

# CHAPTER

# 23

# COMMUNICATIONS

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## CHAPTER 23 COMMUNICATIONS

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23-EFFECTIVE PAGES			23-10-00 (cont)			23-10-04 (cont)		
1 thru 7	AUG 01/2016		5	Feb 01/2016		204	Feb 01/2016	
8	BLANK		6	BLANK		205	Feb 01/2016	
23-CONTENTS			23-10-00			206	Feb 01/2016	
1	Feb 01/2016		101	Feb 01/2016		207	Feb 01/2016	
2	Feb 01/2016		102	Feb 01/2016		208	Feb 01/2016	
3	Feb 01/2016		103	Feb 01/2016		209	Feb 01/2016	
4	Feb 01/2016		104	Feb 01/2016		210	Feb 01/2016	
5	Feb 01/2016		105	Feb 01/2016		23-10-05		
6	BLANK		106	Feb 01/2016		201	Feb 01/2016	
23-00-00			107	Feb 01/2016		202	Feb 01/2016	
1	Feb 01/2016		108	Feb 01/2016		203	Feb 01/2016	
2	Feb 01/2016	C	23-10-00			204	Feb 01/2016	
3	Feb 01/2016	C	201	Feb 01/2016		205	Feb 01/2016	
4	Feb 01/2016		202	Feb 01/2016		206	Feb 01/2016	
5	Feb 01/2016		203	Feb 01/2016		23-10-06		
6	Feb 01/2016		204	Feb 01/2016		201	Feb 01/2016	
7	Feb 01/2016		205	Feb 01/2016		202	Feb 01/2016	
8	Feb 01/2016		206	Feb 01/2016		203	Feb 01/2016	
9	Feb 01/2016		23-10-01			204	Feb 01/2016	
10	Feb 01/2016		201	Feb 01/2016		23-10-07		
11	Feb 01/2016		202	Feb 01/2016		201	Feb 01/2016	
12	Feb 01/2016		203	Feb 01/2016		202	Feb 01/2016	
13	Feb 01/2016		204	Feb 01/2016		203	Feb 01/2016	
14	Feb 01/2016		205	Feb 01/2016		204	Feb 01/2016	
15	Feb 01/2016		206	Feb 01/2016		23-20-00 Config 1		
16	Feb 01/2016		207	Feb 01/2016		1	Feb 01/2016	
23-00-00			208	Feb 01/2016		2	Feb 01/2016	
201	Feb 01/2015		23-10-02			3	Feb 01/2016	
202	Feb 01/2015		201	Feb 01/2016		4	Feb 01/2016	
203	Feb 01/2015		202	Feb 01/2016		5	Feb 01/2016	
204	Feb 01/2015		203	Feb 01/2016		6	Feb 01/2016	
23-10-00			204	Feb 01/2016		7	Feb 01/2016	
1	Feb 01/2016		23-10-04			8	Feb 01/2016	
2	Feb 01/2016		201	Feb 01/2016		9	Feb 01/2016	
3	Feb 01/2016		202	Feb 01/2016		10	BLANK	
4	Feb 01/2016		203	Feb 01/2016				

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101	Feb 01/2016		201	Feb 01/2016		109	Feb 01/2016	
102	Feb 01/2016		202	Feb 01/2016		110	Feb 01/2016	
103	Feb 01/2016		203	Feb 01/2016		111	Feb 01/2016	
104	Feb 01/2016		204	BLANK		112	Feb 01/2016	
105	Feb 01/2016		23-20-02			113	Feb 01/2016	
106	Feb 01/2016		201	Feb 01/2016		114	BLANK	
107	Feb 01/2016		202	Feb 01/2016		23-21-00		
108	Feb 01/2016		203	Feb 01/2016		201	Feb 01/2016	
109	Feb 01/2016		204	Feb 01/2016		202	Feb 01/2016	
110	Feb 01/2016		23-20-03			203	Feb 01/2016	
111	Feb 01/2016		201	Feb 01/2016		204	Feb 01/2016	
112	Feb 01/2016		202	Feb 01/2016		205	Feb 01/2016	
113	Feb 01/2016		203	Feb 01/2016		206	Feb 01/2016	
114	Feb 01/2016		204	Feb 01/2015		207	Feb 01/2016	
115	Feb 01/2016		205	Feb 01/2016		208	Feb 01/2016	
116	Feb 01/2016		206	Feb 01/2016		209	Feb 01/2016	
117	Feb 01/2016		207	Feb 01/2016		210	Feb 01/2016	
118	Feb 01/2016		208	BLANK		23-21-01 Config 1		
119	Feb 01/2016		23-21-00			201	Feb 01/2016	
120	Feb 01/2016		1	Feb 01/2016		202	Feb 01/2016	
121	Feb 01/2016		2	Feb 01/2016		23-21-02 Config 1		
O 122	BLANK		3	Feb 01/2016		201	Feb 01/2016	C
D 123	Aug 1/2016		4	Feb 01/2016		202	Feb 01/2016	
D 124	Aug 1/2016		5	Feb 01/2016		203	Feb 01/2016	C
23-20-00			6	Feb 01/2016		204	Feb 01/2015	
201	Feb 01/2016		7	Feb 01/2016		23-24-00		
202	Feb 01/2016		8	BLANK		1	Feb 01/2016	
203	Feb 01/2016		23-21-00			2	Feb 01/2016	
204	Feb 01/2016		101	Feb 01/2016		3	Feb 01/2016	
205	Feb 01/2016		102	Feb 01/2015		4	BLANK	
206	Feb 01/2016		103	Feb 01/2016		23-24-00		
207	Feb 01/2016		104	Feb 01/2016		101	Feb 01/2016	
208	Feb 01/2016		105	Feb 01/2016		102	Feb 01/2016	
209	Feb 01/2016		106	Feb 01/2016		103	Feb 01/2016	
210	Feb 01/2016		107	Feb 01/2016		104	Feb 01/2016	
			108	Feb 01/2016		105	Feb 01/2016	

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106	BLANK		1	Feb 01/2016		201	Feb 01/2016	
23-24-00			2	Feb 01/2016		202	Feb 01/2016	
201	Feb 01/2016		3	Feb 01/2016		203	Feb 01/2016	
202	Feb 01/2016		4	Feb 01/2016		204	Feb 01/2016	
203	Feb 01/2016		5	Feb 01/2016		205	Feb 01/2016	
204	Feb 01/2016		6	Feb 01/2016		206	Feb 01/2016	
205	Feb 01/2016		7	Feb 01/2016		207	Feb 01/2016	
206	Feb 01/2016		8	Feb 01/2016		208	Feb 01/2016	
207	Feb 01/2016		9	Feb 01/2016		209	Feb 01/2016	
208	Feb 01/2016		10	Feb 01/2016		210	Feb 01/2016	
209	Feb 01/2016		11	Feb 01/2016		211	Feb 01/2016	
210	BLANK		12	BLANK		212	Feb 01/2016	
23-24-01 Config 1			23-30-00			213	Feb 01/2016	
201	Feb 01/2016		101	Feb 01/2016		214	Feb 01/2016	
202	Feb 01/2016		102	Feb 01/2016		215	Feb 01/2016	
203	Feb 01/2016		103	Feb 01/2015		216	Feb 01/2016	
204	Feb 01/2016		104	Feb 01/2016		217	Feb 01/2016	
205	Feb 01/2016		105	Feb 01/2016		218	Feb 01/2016	
206	BLANK		106	Feb 01/2016		219	Feb 01/2016	
23-24-03			107	Feb 01/2016		220	Feb 01/2016	
201	Feb 01/2016		108	Feb 01/2016		221	Feb 01/2016	
202	Feb 01/2016		109	Feb 01/2016		222	Feb 01/2016	
203	Feb 01/2016		110	Feb 01/2016		223	Feb 01/2016	
204	Feb 01/2016		111	Feb 01/2016		224	Feb 01/2016	
205	Feb 01/2016		112	Feb 01/2016		225	Feb 01/2016	
206	Feb 01/2016		113	Feb 01/2016		226	Feb 01/2016	
23-24-03			114	Feb 01/2016		227	Feb 01/2016	
701	Feb 01/2016		115	Feb 01/2016		228	Feb 01/2016	
702	Feb 01/2016		116	Feb 01/2016		229	Feb 01/2016	
23-24-06			117	Feb 01/2016		230	Feb 01/2016	
201	Feb 01/2016		118	Feb 01/2016		231	Feb 01/2016	
202	Feb 01/2016		119	Feb 01/2016		232	Feb 01/2016	
203	Feb 01/2016		120	Feb 01/2016		233	Feb 01/2016	
204	BLANK		121	Feb 01/2016		234	Feb 01/2016	
			122	Feb 01/2016		235	Feb 01/2016	
						236	Feb 01/2016	

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237	Feb 01/2016		201	Feb 01/2016		201	Feb 01/2015	
238	Feb 01/2016		202	Feb 01/2016		202	BLANK	
239	Feb 01/2016		203	Feb 01/2016		23-32-02		
240	Feb 01/2016		204	BLANK		201	Feb 01/2016	
241	Feb 01/2016		23-30-02 Config 2			202	Feb 01/2016	
242	Feb 01/2016		201	Feb 01/2016		23-33-00		
243	Feb 01/2016		202	Feb 01/2016		1	Feb 01/2016	
244	Feb 01/2016		203	Feb 01/2016		2	Feb 01/2016	
245	Feb 01/2016		204	BLANK		3	Feb 01/2016	
246	Feb 01/2016		23-30-03			4	Feb 01/2015	
247	Feb 01/2016		201	Feb 01/2016		5	Feb 01/2016	
248	Feb 01/2016		202	Feb 01/2016		6	Feb 01/2015	
249	Feb 01/2016		203	Feb 01/2016		7	Feb 01/2015	
250	Feb 01/2016		204	Feb 01/2016		8	Feb 01/2016	
251	Feb 01/2016		23-30-04			9	Feb 01/2015	
252	Feb 01/2016		201	Feb 01/2016		10	BLANK	
253	Feb 01/2016		202	Feb 01/2016		23-33-00		
254	Feb 01/2016		203	Feb 01/2015		201	Feb 01/2016	
255	Feb 01/2016		204	Feb 01/2015		202	Feb 01/2016	
256	Feb 01/2016		23-30-05			203	Feb 01/2016	
257	Feb 01/2016		201	Feb 01/2016		204	Feb 01/2016	
258	Feb 01/2016		202	Feb 01/2016		205	Feb 01/2016	
259	Feb 01/2016		23-32-00			206	Feb 01/2016	
260	Feb 01/2016		1	Feb 01/2016		207	Feb 01/2016	
261	Feb 01/2016		2	Feb 01/2016		208	Feb 01/2016	
262	Feb 01/2016		3	Feb 01/2015		23-33-02		
263	Feb 01/2016		4	Feb 01/2015		201	Feb 01/2016	
264	BLANK		5	Feb 01/2016		202	Feb 01/2016	
23-30-00			6	BLANK		23-33-30		
501	Feb 01/2015		23-32-00			201	Feb 01/2016	
502	BLANK		201	Feb 01/2016		202	Feb 01/2016	
23-30-01			202	Feb 01/2016		23-34-00		
201	Feb 01/2016		203	Feb 01/2016		201	Feb 01/2016	
202	Feb 01/2016		204	Feb 01/2016		202	BLANK	
203	Feb 01/2015		205	Feb 01/2016				
204	Feb 01/2015		206	BLANK				

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23-34-00			23-40-03			23-50-00 (cont)		
401	Feb 01/2015		201	Feb 01/2015		110	May 01/2016	
402	BLANK		202	Feb 01/2015		111	May 01/2016	
23-34-00			23-40-04			112	May 01/2016	
501	Feb 01/2015		201	Feb 01/2016		113	May 01/2016	
502	BLANK		202	Feb 01/2016		114	May 01/2016	
23-40-00			203	Feb 01/2016		115	May 01/2016	
1	Feb 01/2016		204	Feb 01/2016		116	May 01/2016	
2	Feb 01/2016		205	Feb 01/2016		117	May 01/2016	
3	Feb 01/2016		206	Feb 01/2016		118	May 01/2016	
4	Feb 01/2015		207	Feb 01/2016		119	May 01/2016	
23-40-00			208	Feb 01/2016		120	May 01/2016	
101	May 01/2016		209	Feb 01/2016		121	May 01/2016	
102	May 01/2016		210	BLANK		122	BLANK	
103	May 01/2016		23-50-00			23-50-00		
104	Feb 01/2016		1	Feb 01/2016		201	Feb 01/2016	
105	Feb 01/2016		2	Feb 01/2016		202	Feb 01/2016	
106	Feb 01/2016		3	Feb 01/2016		203	Feb 01/2016	
107	Feb 01/2016		4	Feb 01/2016		204	Feb 01/2016	
108	Feb 01/2016		5	Feb 01/2016		205	Feb 01/2016	
109	Feb 01/2016		6	Feb 01/2016		206	Feb 01/2016	
110	Feb 01/2016		7	Feb 01/2016		207	Feb 01/2016	
111	Feb 01/2016		8	Feb 01/2016		208	Feb 01/2016	
112	Feb 01/2016		9	Feb 01/2016		209	Feb 01/2016	
23-40-00			10	Feb 01/2016		210	Feb 01/2016	
201	Feb 01/2016		11	Feb 01/2016		211	Feb 01/2016	
202	Feb 01/2015	C	12	BLANK		212	Feb 01/2016	
203	Feb 01/2016	C	23-50-00			213	Feb 01/2016	
204	BLANK		101	Feb 01/2016		214	Feb 01/2016	
23-40-01			102	Feb 01/2015		215	Feb 01/2016	
201	Feb 01/2015		103	May 01/2016		216	Feb 01/2016	
202	Feb 01/2015		104	May 01/2016		217	Feb 01/2016	
23-40-02			105	May 01/2016		218	BLANK	
201	Feb 01/2015		106	May 01/2016		23-50-01		
202	Feb 01/2015		107	May 01/2016		201	Feb 01/2015	
			108	May 01/2016		202	Feb 01/2015	
			109	May 01/2016				

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23-50-02			23-60-00 (cont)			23-60-01		
201	Feb 01/2016		506	Feb 01/2015		601	Feb 01/2015	
202	Feb 01/2016		507	Feb 01/2015		602	Feb 01/2015	
203	Feb 01/2016	C	508	Feb 01/2015		603	Feb 01/2015	
204	Feb 01/2015		509	Feb 01/2015		604	Feb 01/2015	
205	Feb 01/2016		510	Feb 01/2015		605	Feb 01/2015	
206	BLANK		511	Feb 01/2015		606	BLANK	
23-50-03			512	Feb 01/2015		23-70-00		
201	Feb 01/2016		513	Feb 01/2015		1	Feb 01/2016	
202	Feb 01/2016		514	BLANK		2	Feb 01/2016	
203	Feb 01/2016		23-60-00 Config 1			3	Feb 01/2016	
204	Feb 01/2016		501	Feb 01/2015		4	Feb 01/2016	
23-50-04			502	Feb 01/2015		5	Feb 01/2016	
201	Feb 01/2016		503	Feb 01/2015		6	Feb 01/2016	
202	Feb 01/2016		504	Feb 01/2015		23-70-00		
203	Feb 01/2016		505	Feb 01/2015		101	Feb 01/2015	
204	Feb 01/2016		506	Feb 01/2015		102	Feb 01/2015	
23-50-05			507	Feb 01/2015		103	Feb 01/2016	
201	Feb 01/2016		508	Feb 01/2015		104	Feb 01/2016	
202	Feb 01/2016		509	Feb 01/2015		105	Feb 01/2016	
203	Feb 01/2016	C	510	Feb 01/2015		106	Feb 01/2016	
204	Feb 01/2016		511	Feb 01/2015		107	Feb 01/2016	
205	Feb 01/2016		512	BLANK		108	Feb 01/2016	
206	Feb 01/2015	C	23-60-01			23-70-00		
207	Feb 01/2016		401	Feb 01/2015		201	Feb 01/2016	
208	BLANK		402	Feb 01/2015		202	Feb 01/2016	
23-60-00			403	Feb 01/2015		203	Feb 01/2016	
1	Feb 01/2015		404	Feb 01/2015		204	Feb 01/2016	
2	Feb 01/2015		405	Feb 01/2015		205	Feb 01/2016	
3	Feb 01/2015		406	Feb 01/2015		206	BLANK	
4	BLANK		407	Feb 01/2015		23-70-00		
23-60-00			408	Feb 01/2015		501	Feb 01/2015	
501	Feb 01/2015		409	Feb 01/2015		502	BLANK	
502	Feb 01/2015		410	Feb 01/2015		23-70-01		
503	Feb 01/2015		411	Feb 01/2015		201	Feb 01/2015	
504	Feb 01/2015		412	Feb 01/2015		202	Feb 01/2015	
505	Feb 01/2015					203	Feb 01/2016	

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23-70-01	(cont)							
204	Feb 01/2016							
205	Feb 01/2016							
206	BLANK							
23-70-02								
201	Feb 01/2015							
202	Feb 01/2016							
203	Feb 01/2015							
204	BLANK							
23-70-03								
201	Feb 01/2015							
202	Feb 01/2016							
203	Feb 01/2016							
204	Feb 01/2015							
205	Feb 01/2015							
206	Feb 01/2015							
207	Feb 01/2015							
208	Feb 01/2015							
209	Feb 01/2015							
210	Feb 01/2015							
23-70-03								
401	Feb 01/2015							
402	BLANK							

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<u>COMMUNICATIONS - DESCRIPTION AND OPERATION</u>	23-00-00		1	WJE ALL
<u>GENERAL - MAINTENANCE PRACTICES</u>	23-00-00		201	WJE ALL
<u>HIGH FREQUENCY (HF) - DESCRIPTION AND OPERATION</u>	23-10-00		1	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HIGH FREQUENCY SYSTEM - TROUBLE SHOOTING</u>	23-10-00		101	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HIGH FREQUENCY SYSTEM - MAINTENANCE PRACTICES</u>	23-10-00		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HIGH FREQUENCY TRANSCEIVER - MAINTENANCE PRACTICES</u>	23-10-01		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HF COMM CONTROL PANEL - MAINTENANCE PRACTICES</u>	23-10-02		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HF ANTENNA COUPLER - MAINTENANCE PRACTICES</u>	23-10-04		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HF ANTENNA COUPLER ACCESSORY UNIT - MAINTENANCE PRACTICES</u>	23-10-05		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HF LIGHTNING ARRESTOR AND RELAY UNIT - MAINTENANCE PRACTICES</u>	23-10-06		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>HF ANTENNA LOADING RESISTOR - MAINTENANCE PRACTICES</u>	23-10-07		201	WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
<u>VHF - DESCRIPTION AND OPERATION</u>	23-20-00	1	1	WJE ALL
<u>VHF - TROUBLE SHOOTING</u>	23-20-00		101	WJE ALL
<u>VHF - MAINTENANCE PRACTICES</u>	23-20-00		201	WJE ALL
<u>VHF COMMUNICATION TRANSCEIVER - MAINTENANCE PRACTICES</u>	23-20-01		201	WJE ALL
<u>VHF FREQUENCY CONTROL PANEL - MAINTENANCE PRACTICES</u>	23-20-02		201	WJE ALL
<u>VHF BLADE ANTENNA - REMOVAL/INSTALLATION</u>	23-20-03		201	WJE ALL

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<u>SELECTIVE CALLING (SELCAL) - DESCRIPTION AND OPERATION</u>	23-21-00			1	WJE ALL
<u>SELECTIVE CALLING (SELCAL) - TROUBLE SHOOTING</u>	23-21-00			101	WJE ALL
<u>SELECTIVE CALLING (SELCAL) - MAINTENANCE PRACTICES</u>	23-21-00			201	WJE ALL
<u>SELCAL DUAL CHANNEL DECODER - MAINTENANCE PRACTICES</u>	23-21-01	1		201	WJE ALL
<u>SELCAL CONTROL PANEL - MAINTENANCE PRACTICES</u>	23-21-02	1		201	WJE ALL
<u>VHF DATA LINK (ACARS) - DESCRIPTION AND OPERATION</u>	23-24-00			1	WJE 401-403, 412, 881, 883
<u>VHF DATA LINK (ACARS) - TROUBLE SHOOTING</u>	23-24-00			101	WJE 401-403, 412, 881, 883
<u>VHF DATA LINK (ACARS) - MAINTENANCE PRACTICES</u>	23-24-00			201	WJE 401-403, 412, 881, 883
<u>ACARS CONTROL UNIT - MAINTENANCE PRACTICES</u>	23-24-01	1		201	WJE 401-403, 412, 881, 883
<u>ACARS PRINTER - MAINTENANCE PRACTICES</u>	23-24-03			201	WJE 401-403, 412, 881, 883
<u>ACARS PRINTER - CLEANING</u>	23-24-03			701	WJE 401-403, 412, 881, 883
<u>OPTIONAL AUXILIARY TERMINAL (OAT) - MAINTENANCE PRACTICES</u>	23-24-06			201	WJE 881, 883
<u>PASSENGER ADDRESS AND ENTERTAINMENT - DESCRIPTION AND OPERATION</u>	23-30-00			1	WJE ALL
<u>PASSENGER ADDRESS AND ENTERTAINMENT - TROUBLE SHOOTING</u>	23-30-00			101	WJE ALL
<u>PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES</u>	23-30-00	1		201	WJE ALL
<u>PASSENGER ADDRESS AND ENTERTAINMENT-ADJUSTMENT/TEST</u>	23-30-00			501	WJE ALL
Operational Check of the Passenger Address Priority System TASK 23-30-00-710-801				501	WJE ALL
Functional Check of the Passenger Address System TASK 23-30-00-720-801				501	WJE ALL

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<u>PASSENGER ADDRESS AMPLIFIER - MAINTENANCE PRACTICES</u>	23-30-01		201	WJE ALL
<u>P/A RELAY AND INTERLOCK PANEL - MAINTENANCE PRACTICES</u>	23-30-02	1	201	WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891
<u>ELECTRONIC SWITCHING UNIT - MAINTENANCE PRACTICES</u>	23-30-02	2	201	WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893
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<u>PASSENGER ADDRESS MICROPHONE PREAMPLIFIER - MAINTENANCE PRACTICES</u>	23-30-04		201	WJE ALL
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<u>ANNOUNCEMENT CONTROL PANEL - MAINTENANCE PRACTICES</u>	23-32-01		201	WJE 401-404, 406-408, 410, 411, 875-880
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<u>PORTABLE COMMUNICATIONS - ADJUSTMENT/TEST</u>	23-34-00		501	WJE ALL
Operational Check of the Megaphone TASK 23-34-00-710-801			501	WJE ALL
<u>SERVICE INTERPHONE - DESCRIPTION AND OPERATION</u>	23-40-00		1	WJE ALL
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## CHAPTER 23 COMMUNICATIONS

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## COMMUNICATIONS - DESCRIPTION AND OPERATION

### 1. General

- A. The communication system provides a means of conveying or transmitting messages from one part of the aircraft to another and between the aircraft and other aircraft or ground stations. The system also provides for recording of audio signals and dissipation of static electricity. The communication system consists of the following:

**Table 1 Aircraft Communication Systems**

Audio Integrating
<b>WJE 401-404, 412, 414</b>
Automatic Communications Addressing and Reporting System (ACARS)
<b>WJE ALL</b>
Flight Interphone
Passenger Address and Entertainment
<b>WJE 401-404, 407, 408, 410-412, 414, 861-866, 868, 869, 871-881, 883, 886, 887, 891, 892</b>
Passenger Music/Recorded Announcements
<b>WJE 401-404, 412, 414</b>
Portable Communications
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>
Portable Communications (Provisions)
<b>WJE ALL</b>
Selective Calling (SELCAL)
Service Interphone
Static Discharging
Very High Frequency (VHF)
Voice Recording
<b>WJE 401-404, 410, 412, 414, 886, 887</b>
High Frequency System (HF)
<b>WJE 405-411, 415-427, 429, 884, 886, 887, 893</b>
High Frequency System (HF) (Provisions)
<b>WJE ALL</b>

### 2. Description

- A. The audio integrating system provides a means of selecting and monitoring the audio outputs of the communication transceivers and navigation receivers into the flight crew headphones and speakers. The system also controls the output of the flight crew microphones into the communications transceivers.

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<b>WJE ALL</b>

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### WJE 401-404, 412, 414

- B. The automatic communications addressing and reporting system (ACARS) is used in conjunction with the very high frequency (VHF) communications system to provide automated operational control communication between the aircraft and ACARS-equipped ground stations. Basic reporting is of time of occurrence of the flight events Out-Off-On-In (000I), as sensed by parking brake, cabin door and engine oil pressure switches, and ground control relays. Other data may be entered into the system through a control unit keyboard.

### WJE ALL

- C. The flight interphone system provides communication within the flight compartment, avionics compartment, and a handset jack outlet located on the ground power receptacle panel in the vicinity aft of the nose gear wheelwell.
- D. The passenger address system enables the pilots and applicable cabin attendants to speak to the passengers. Passenger address announcements are amplified by the passenger address amplifiers and the output is connected to a sufficient number of speakers located throughout the main cabin, and lavatories to give complete audio coverage.

### WJE 405, 406, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 881, 883, 884, 886, 887, 891-893

- E. Provisions for recorded music and announcements are installed for transmission of boarding music or pre-recorded announcements through the passenger address system. Space provisions, with wiring stowed, are provided for a pre-recorded announcement panel.

### WJE 401-404, 407, 408, 411, 412, 414, 875-880

- F. The passenger music/recorded announcements system provides music or pre-recorded announcements through the passenger address system. Music or announcements are selected by the cabin attendants.

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

- G. The portable communications provide an alternate means of addressing the passengers. Provisions for battery operated portable megaphones are located in the forward and aft passenger compartment. Portable communications are used in the event of a failure of the passenger address system.

### WJE 412, 414

- H. The portable communications provide an alternate means of addressing the passengers. Provisions for battery operated portable megaphones are located in the forward and aft passenger compartment. Portable communications are used in the event of a failure of the passenger address system.

### WJE ALL

- I. The SELCAL (Selective Calling) system provides the pilots with visual and aural indications that the aircraft is being called and operates in conjunction with communication receivers. The SELCAL system enables ground stations equipped with code tone transmitting facilities to selectively call an individual aircraft. All signals on the particular communication channel may be monitored, however it is not necessary to maintain a constant listening watch on all transmission.
- J. The service interphone system provides communication between areas where service and maintenance operations are most frequently performed and between the flight compartment and cabin attendant stations.
- K. Static dischargers located on the wings and empennage provide a means of dissipating precipitation static accumulated on the airframe.

EFFECTIVITY  
WJE ALL

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- WJE** L. The Very High Frequency (VHF) system provides communication between the aircraft, other aircraft, and ground stations and is used for transmitting and receiving amplitude modulated voice signals.
- WJE** M. The voice recording system provides recording capability for a total of four separate audio inputs on an endless magnetic tape. These inputs represent either transmission or reception of voice signals originating at the flight crew stations. An area microphone, located in the flight compartment, picks up and supplies to the voice recorder a composite of all the audio signals generated in the flight compartment.

**WJE 401-404, 412, 414**

- N. The High Frequency (HF) system provides communication between the aircraft and ground stations or other aircraft over distances beyond the capability of the VHF system.

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

- O. Provisions for a high frequency (HF) system are installed in the aircraft. The HF system provides communication between the aircraft and ground stations or other aircraft.

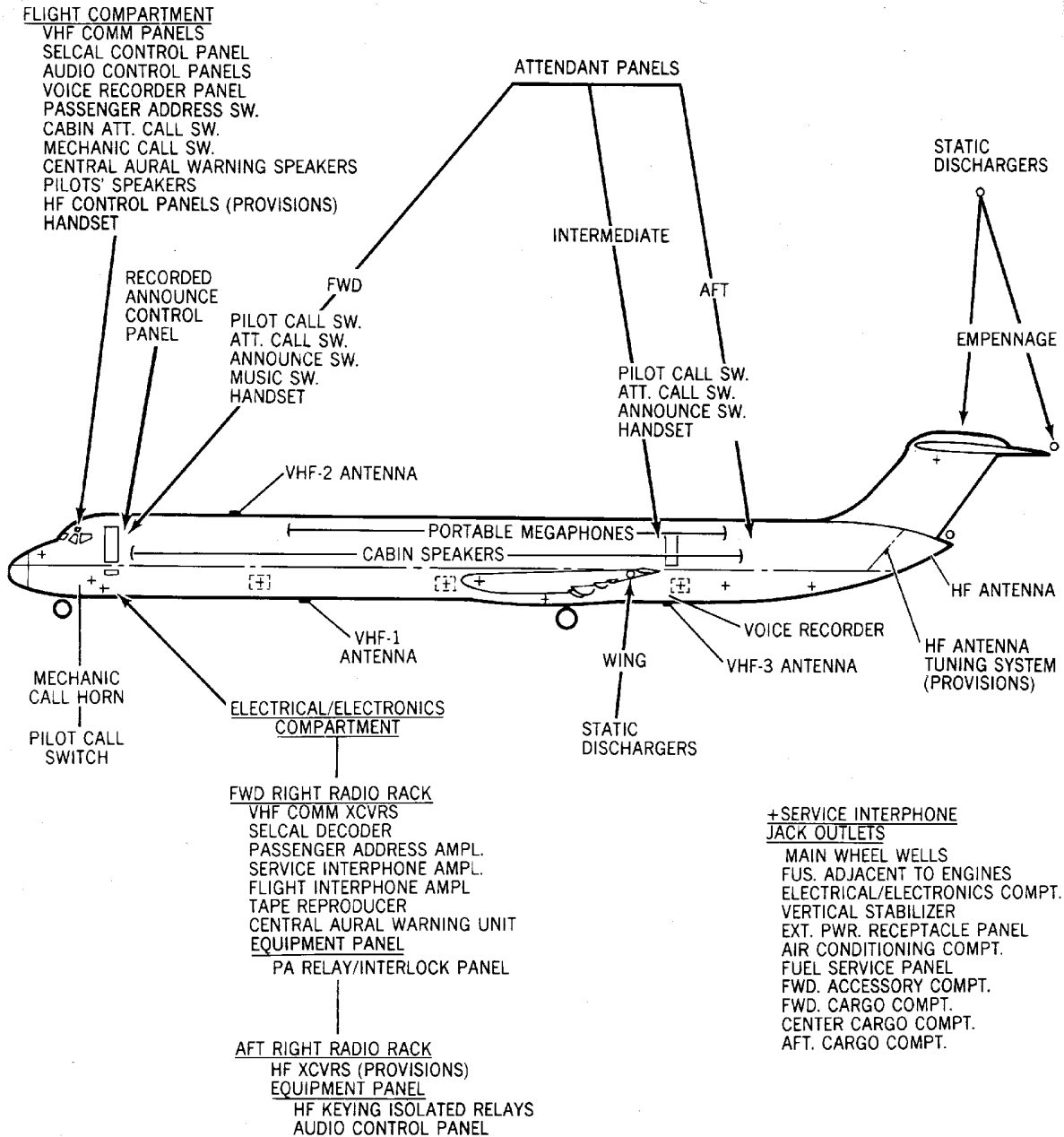
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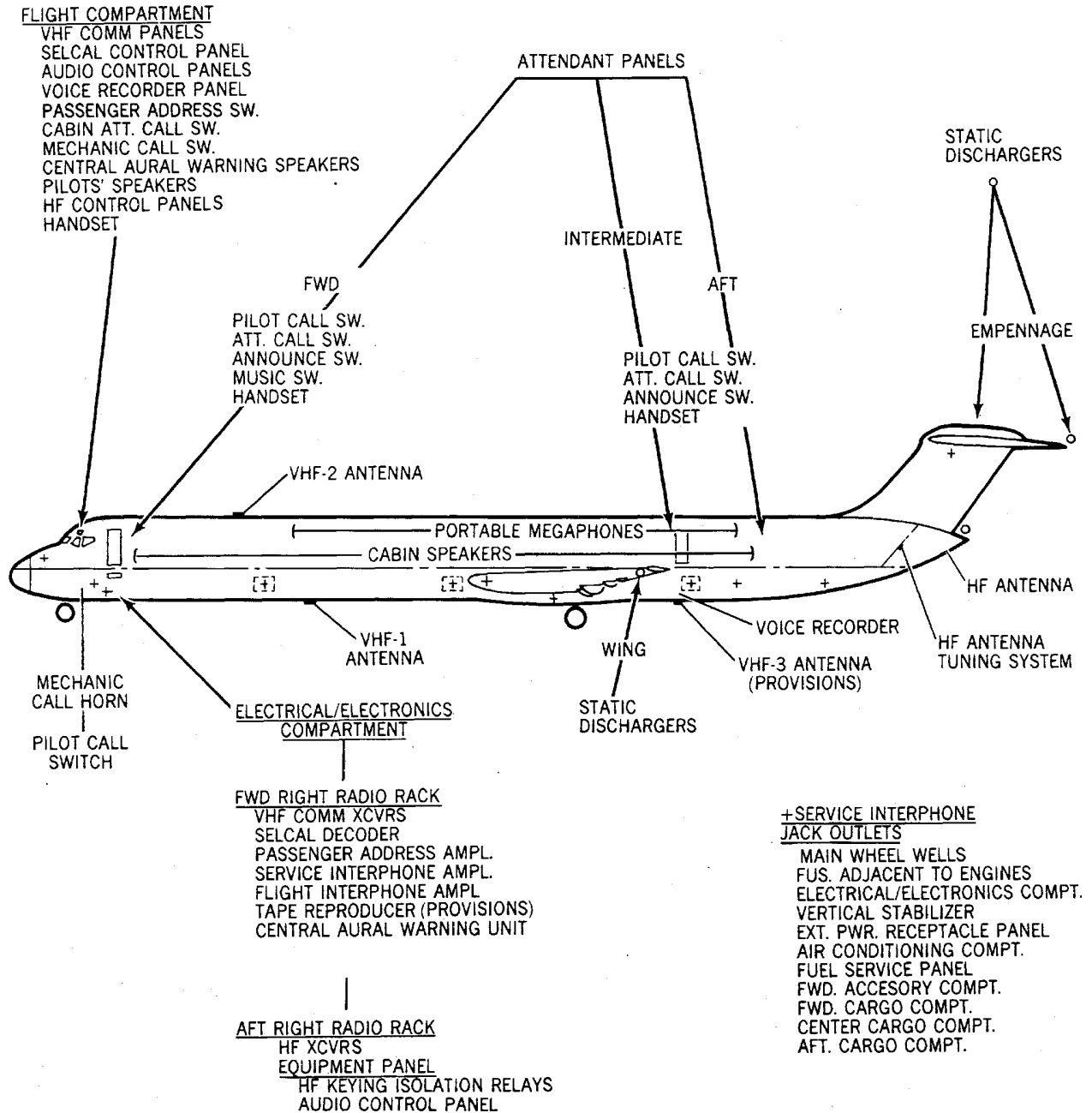
**Communications - Component Locations  
Figure 1/23-00-00-990-803 (Sheet 1 of 4)**

EFFECTIVITY  
WJE 875-879

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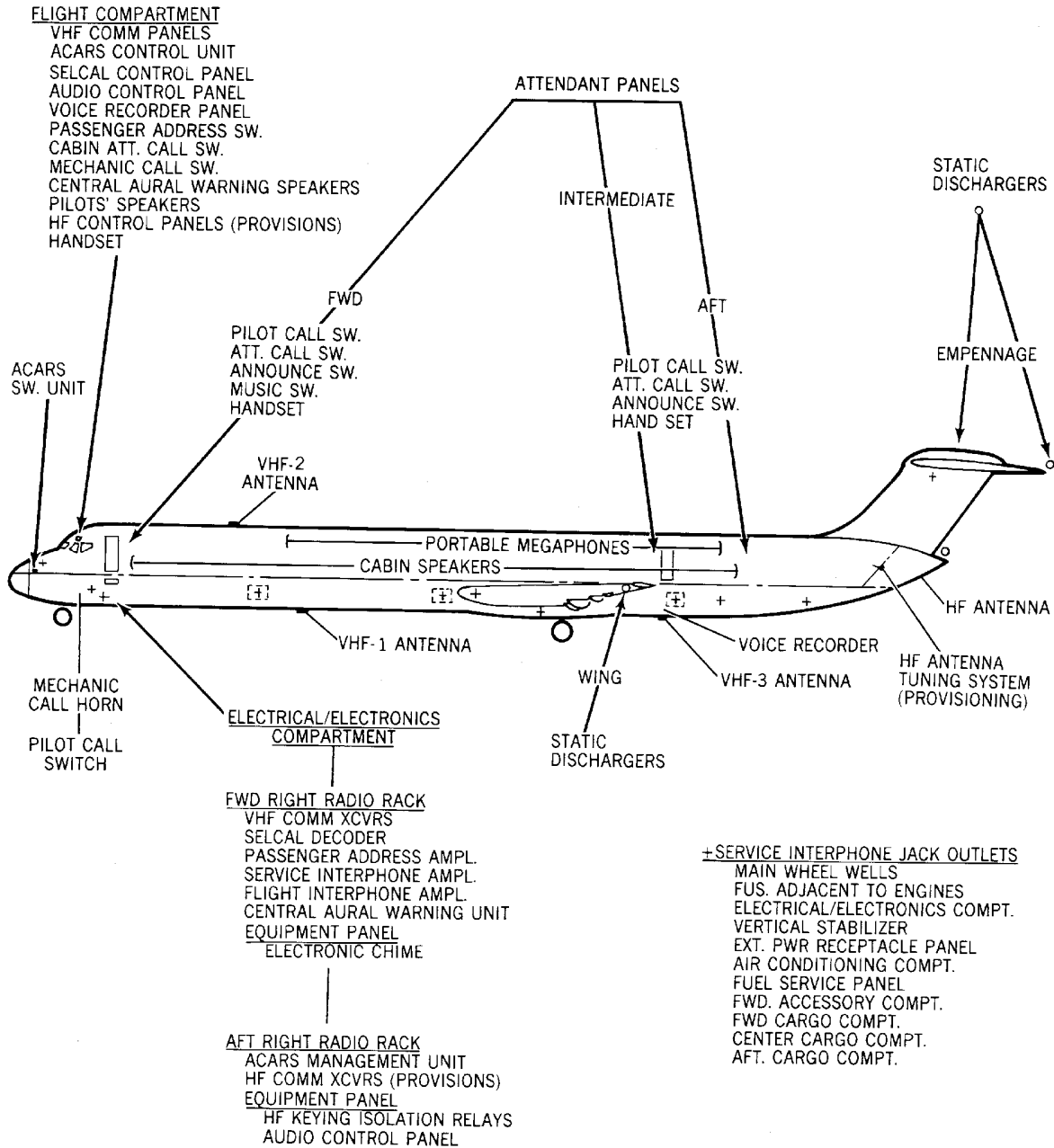
**Communications - Component Locations  
Figure 1/23-00-00-990-803 (Sheet 2 of 4)**

EFFECTIVITY  
WJE 886, 887

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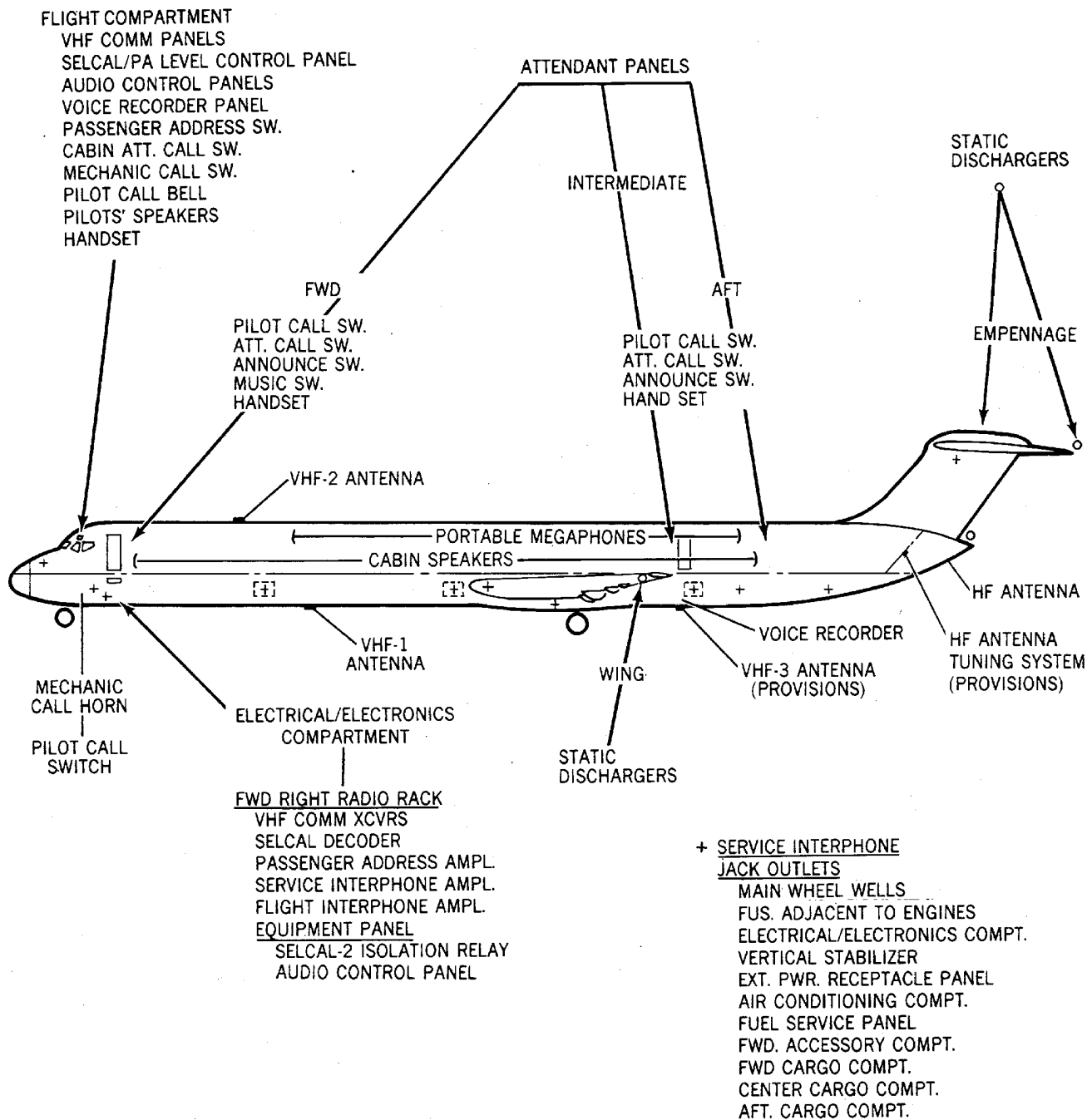
**Communications - Component Locations  
Figure 1/23-00-00-990-803 (Sheet 3 of 4)**

EFFECTIVITY  
WJE 401-404, 412, 414

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**Communications - Component Locations  
Figure 1/23-00-00-990-803 (Sheet 4 of 4)**

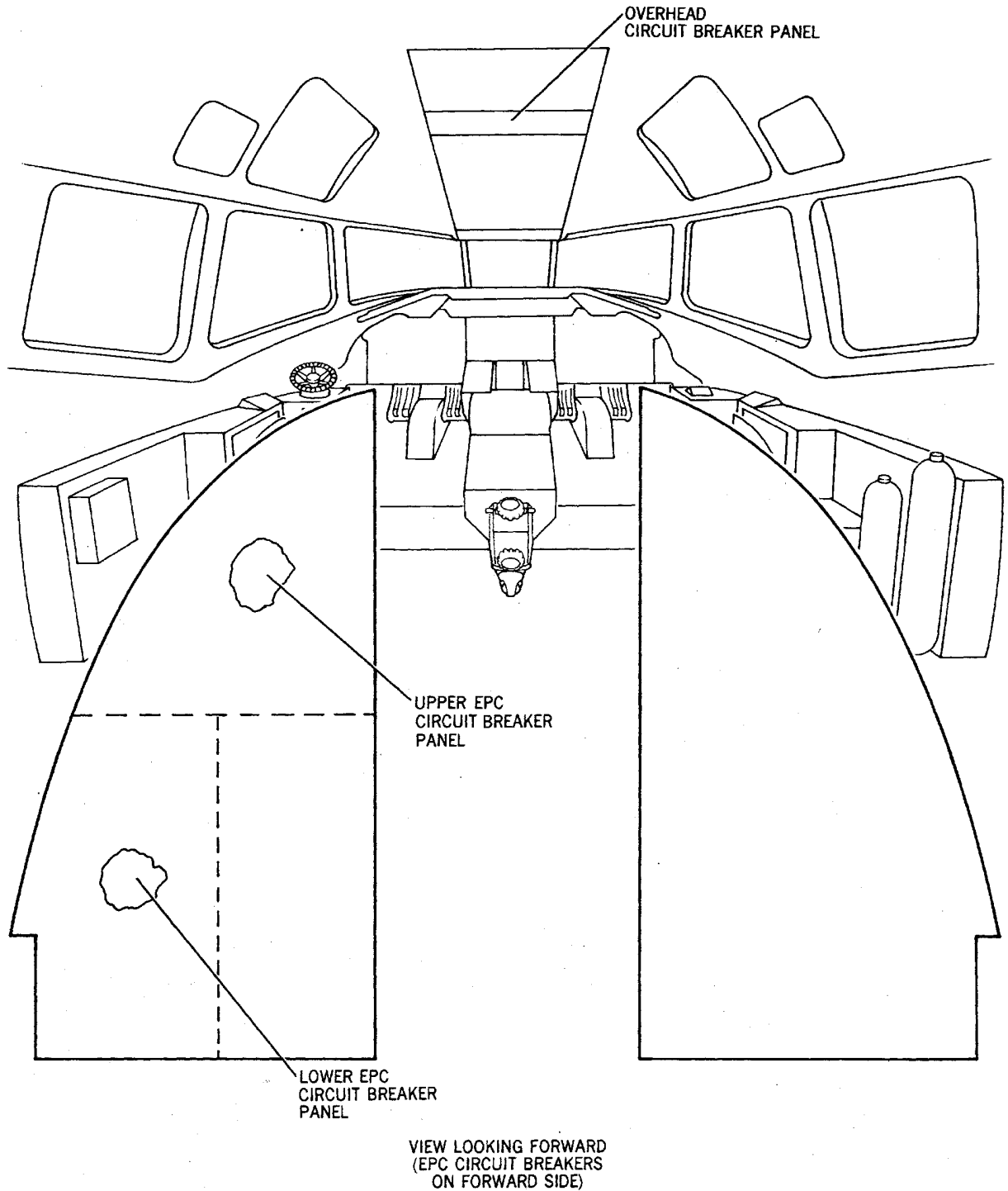
EFFECTIVITY  
 WJE 415-427, 429, 861-866, 868, 869, 871-874,  
 891-893

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**Communications - Component Locations**  
**Figure 2/23-00-00-990-804**

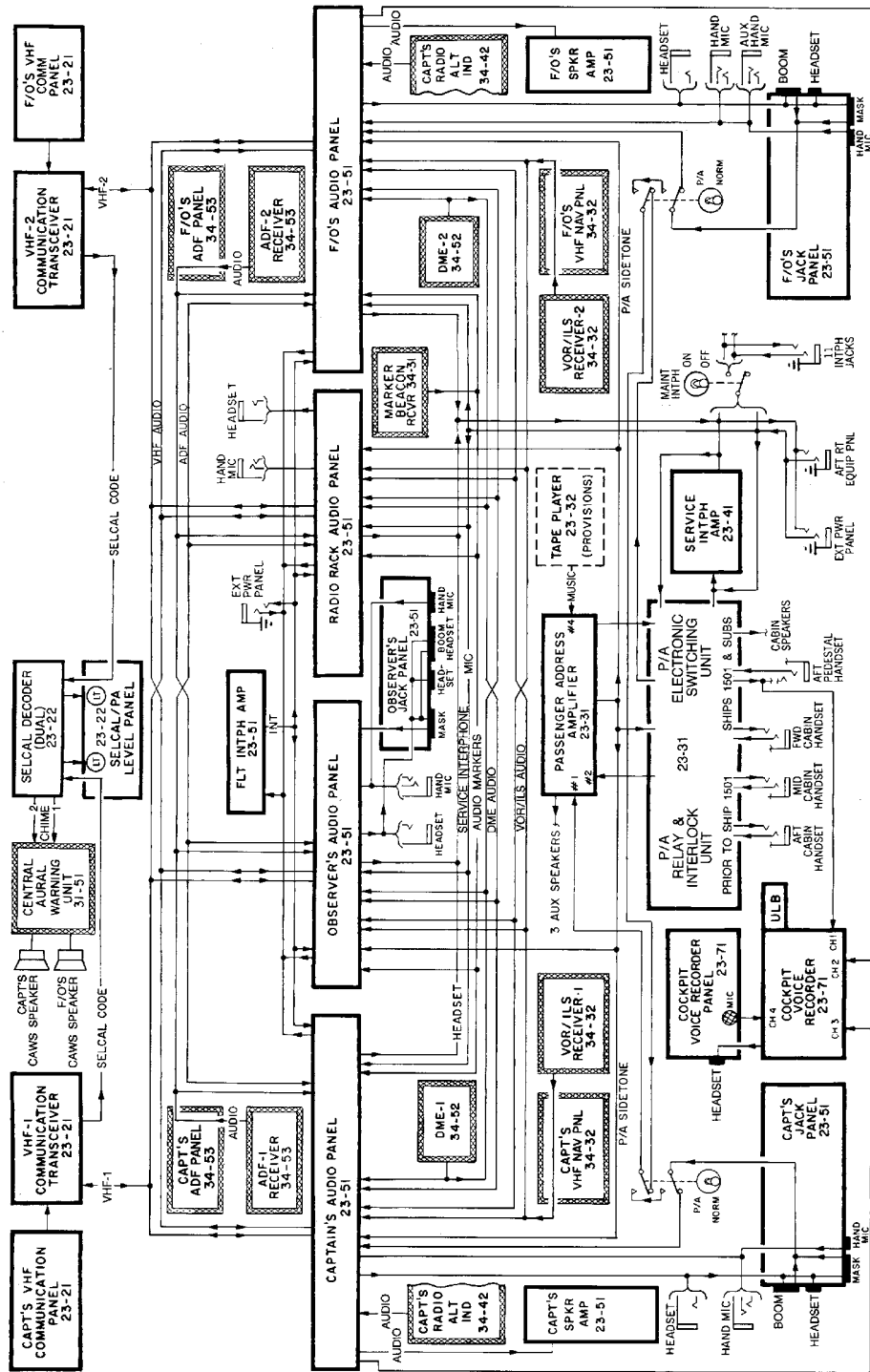
EFFECTIVITY  
WJE ALL

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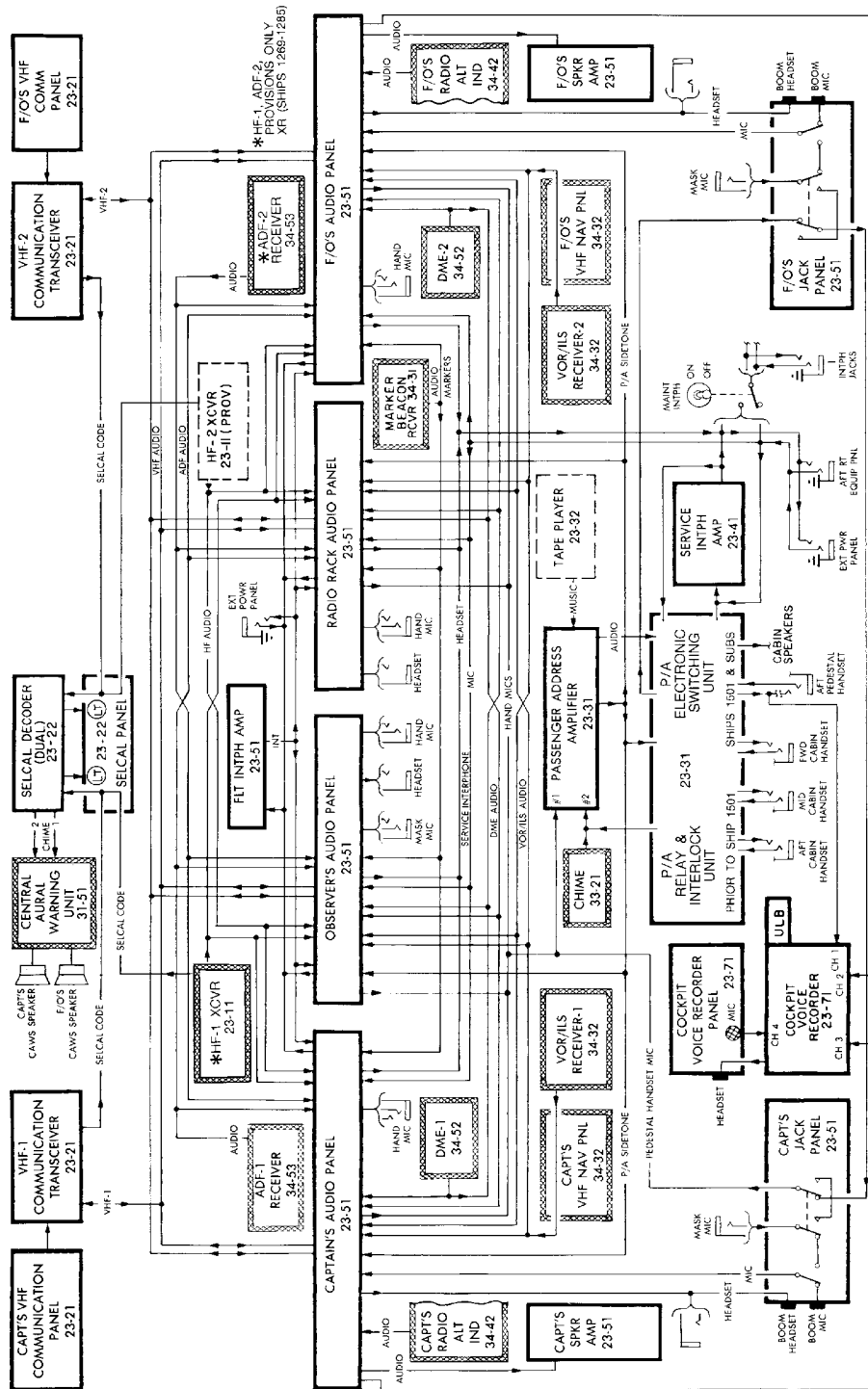
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REFERENCED DATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
MDC PROPRIETARY

Communications System - Block Diagram  
Figure 3/23-00-00-990-805 (Sheet 1 of 5)

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

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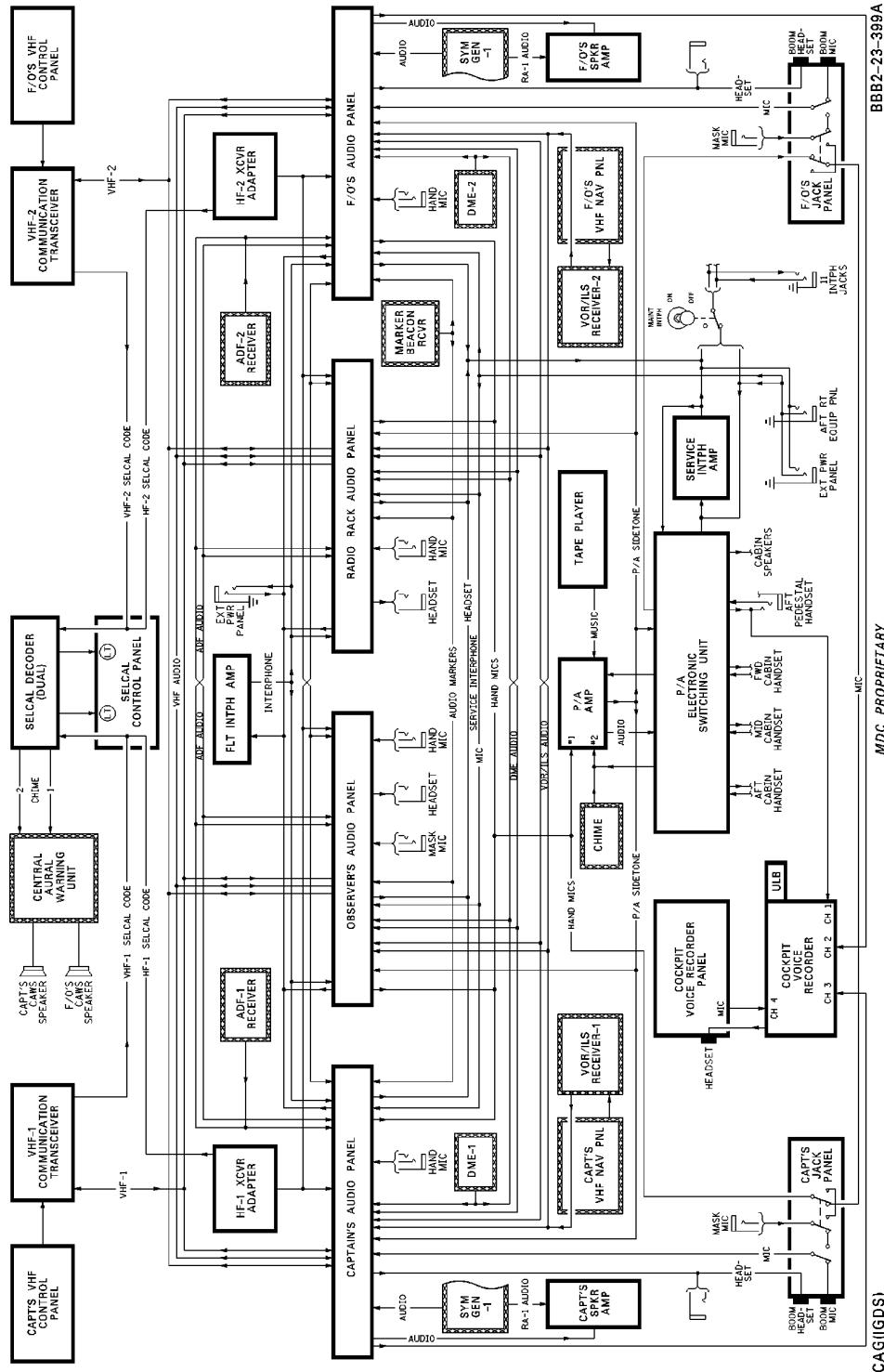
MDC PROPRIETARY

**Communications System - Block Diagram**  
Figure 3/23-00-00-990-805 (Sheet 2 of 5)

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

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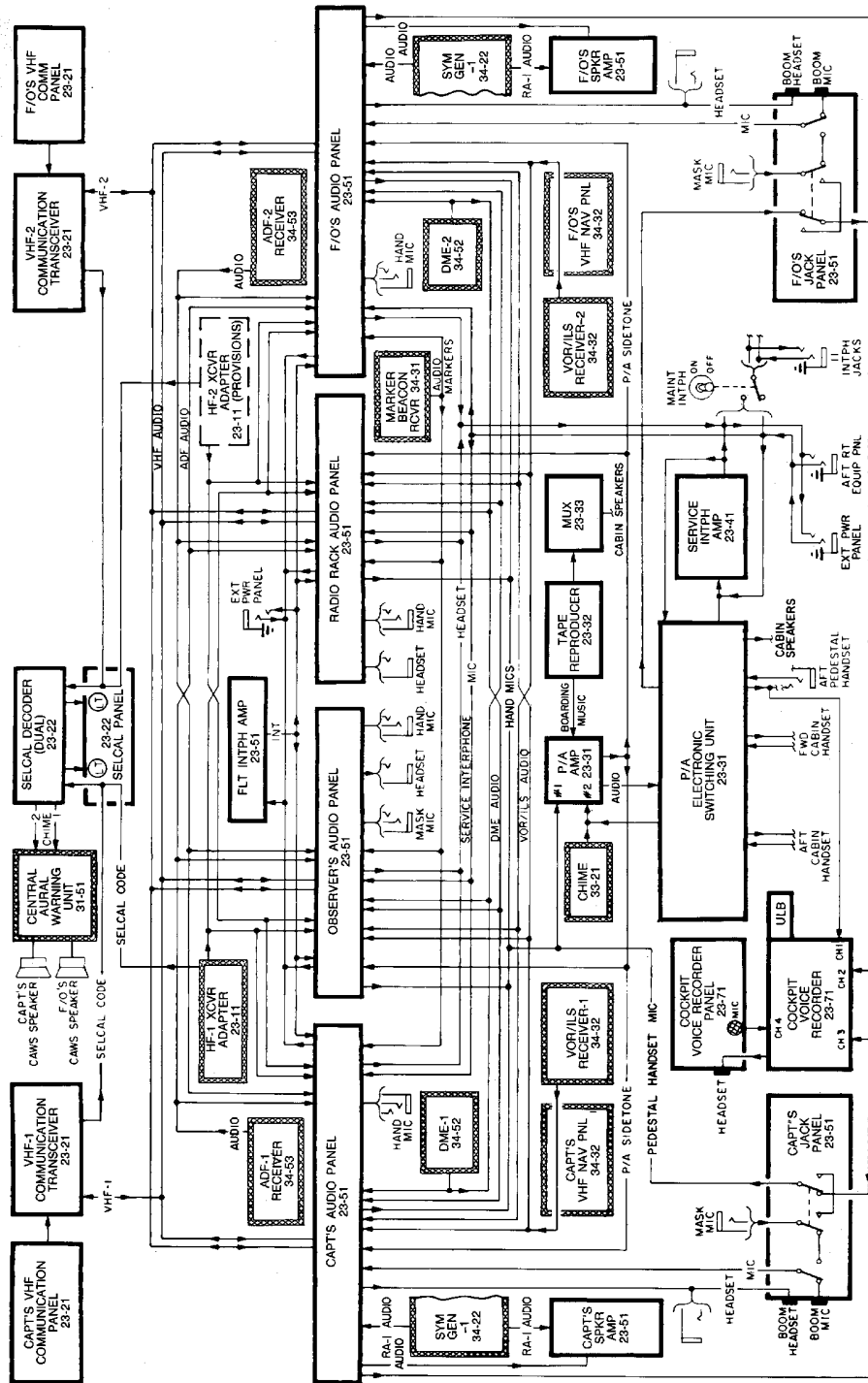


Communications System - Block Diagram  
Figure 3/23-00-00-990-805 (Sheet 3 of 5)

EFFECTIVITY  
WJE 410

23-00-00

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

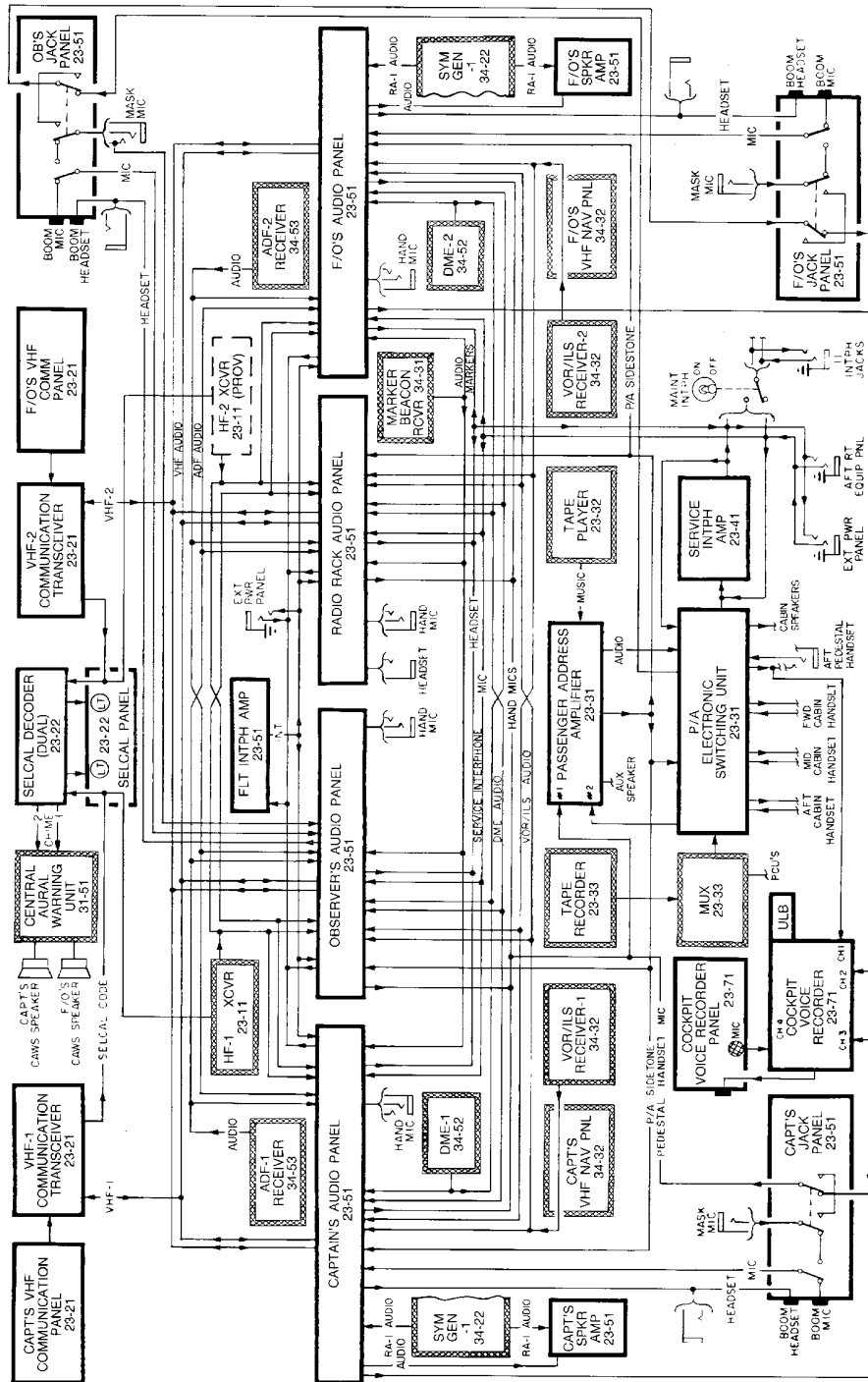
Communications System - Block Diagram  
Figure 3/23-00-00-990-805 (Sheet 4 of 5)

EFFECTIVITY  
WJE 886, 887

23-00-00

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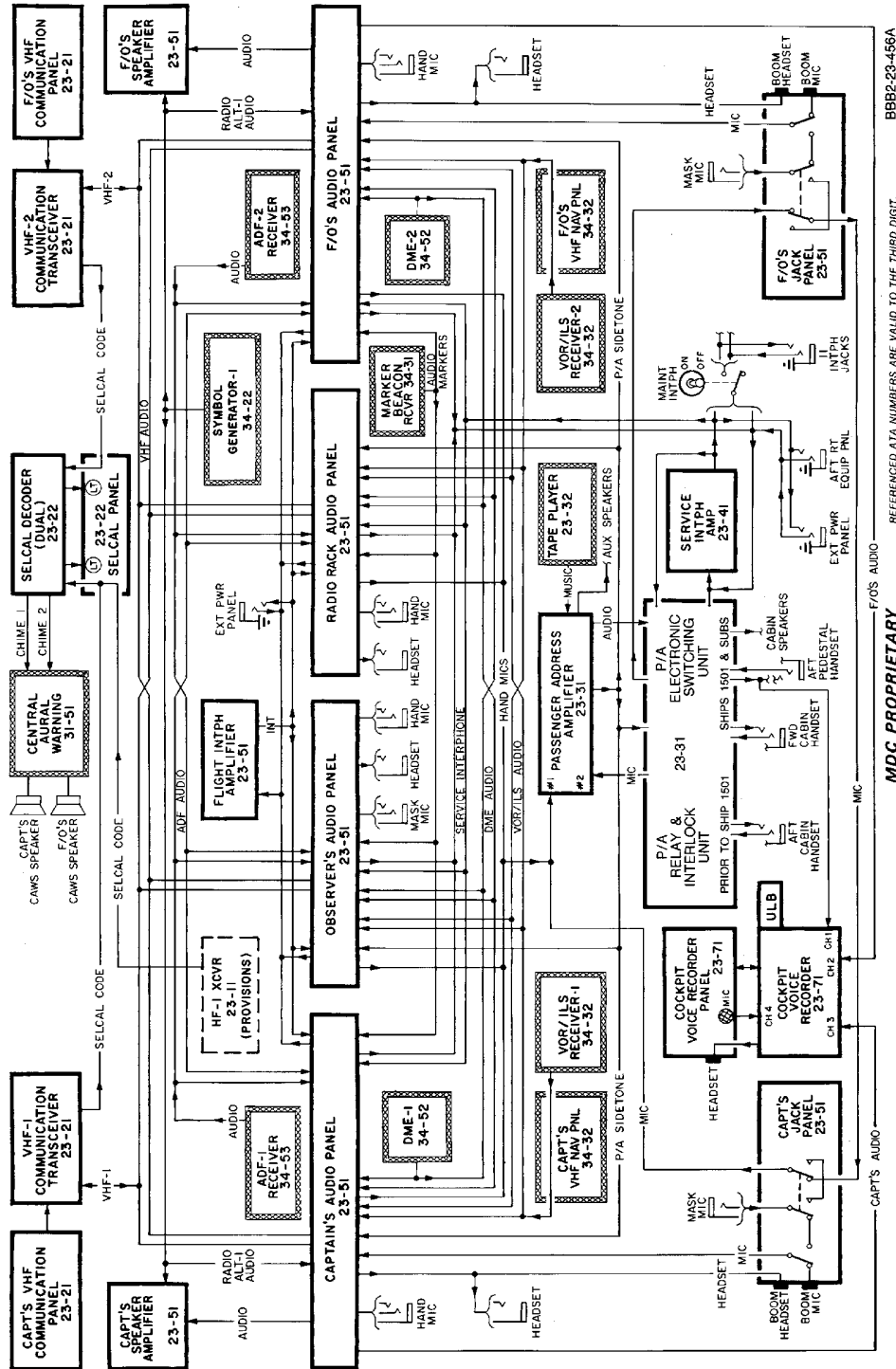
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BBB2-23-567

**Communications System - Block Diagram**  
Figure 3/23-00-00-990-805 (Sheet 5 of 5)

EFFECTIVITY  
WJE 401-404, 412, 414

**23-00-00**

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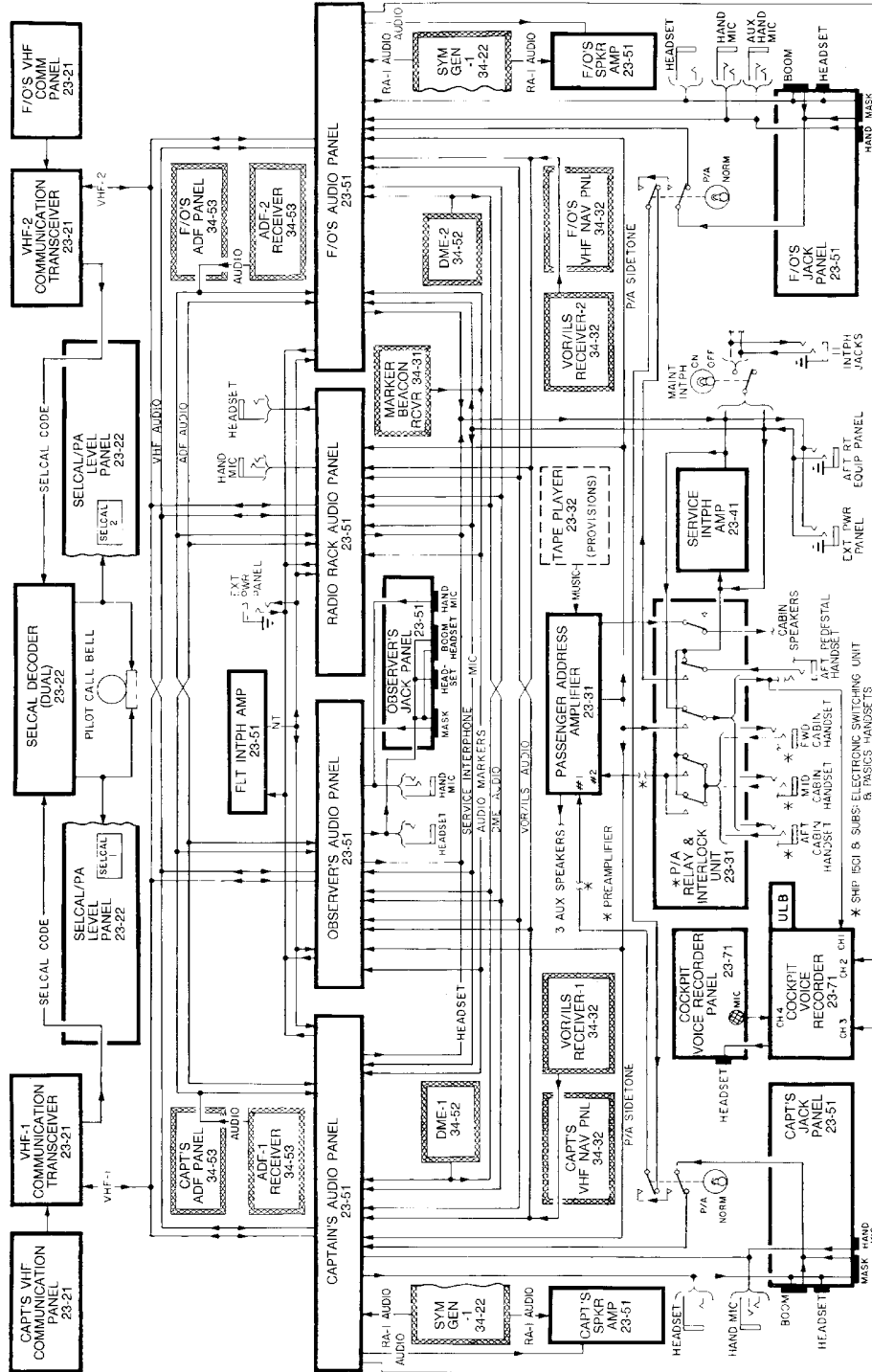


Communication System - Block Diagram  
Figure 4/23-00-00-990-806 (Sheet 1 of 3)

EFFECTIVITY  
WJE 407, 408, 411, 880

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Communication System - Block Diagram  
Figure 4/23-00-00-990-806 (Sheet 2 of 3)

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

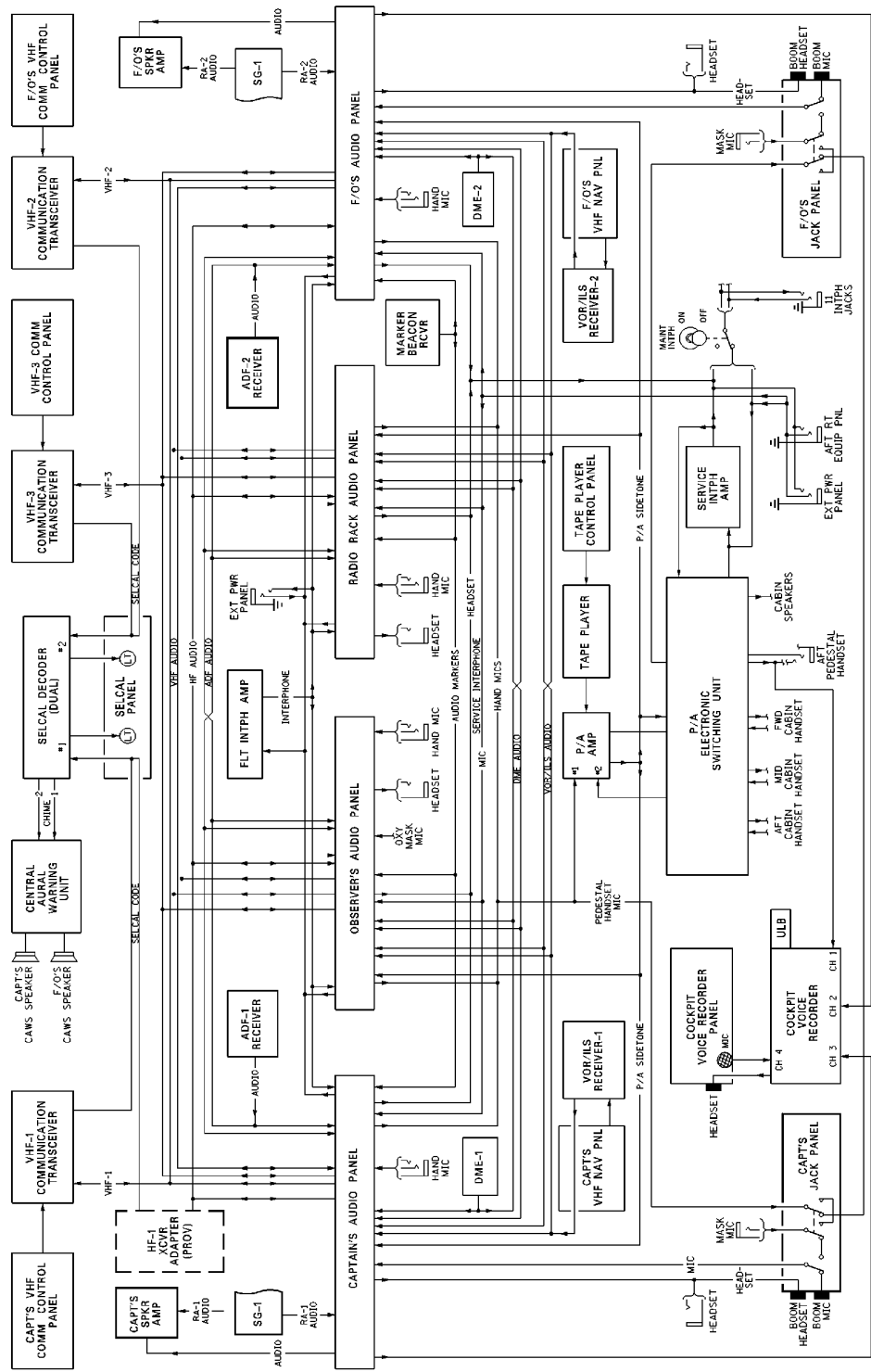
EFFECTIVITY  
WJE 415, 418, 863, 864, 866

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TP-80MM-WJE



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MDC PROPRIETARY

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Communication System - Block Diagram  
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WJE 875-879

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## GENERAL - MAINTENANCE PRACTICES

### 1. General

- A. General Maintenance Practices provides certain common practices applicable to most maintenance procedures performed on the aircraft. The general common practices pertain to safety procedures, typical removal/installations of rack mounted units, control panels, and instruments, handling of replaced units which are repairable, observant inspection of system components during maintenance procedures, cleaning, and corrosion treatment.

### 2. Safety Precautions

- A. Prior to removal/installation of any electrically operated component, the applicable circuit breakers should be opened, then tagged and safetied per customers procedures.
- B. Before any procedure that will cause operation of a movable aircraft component, make certain of the following:
  - (1) Any obstructions, such as workstands, should be free of the field of operation of the component to prevent damage to the aircraft.
  - (2) All personnel working in or about the aircraft should be cognizant of the operation to prevent injury to personnel.

**CAUTION:** WHEN AIRCRAFT IS ON JACKS, ELECTRICAL CIRCUITS TO INSTRUMENT COOLING FAN ARE DE-ENERGIZED THROUGH GROUND CONTROL RELAY. DAMAGE TO ELECTRONIC EQUIPMENT ON INSTRUMENT PANEL CAN OCCUR WHEN INSTRUMENT COOLING FAN IS INOPERATIVE AND CONDITIONED AIR IS NOT AVAILABLE. CHAPTER 21 PROVIDES PROCEDURES FOR OPERATION OF INSTRUMENT COOLING FAN WITH AIRCRAFT ON JACKS.

- C. Before ground operation of avionics system components, make certain adequate cooling air is provided to components to prevent overheating of components.
- D. The following is applicable to aircraft with HF antenna installed. When HF system is installed this antenna is connected to the lightning arrestor and relay unit. If HF system is not installed or the lightning arrestor and relay unit is removed from the aircraft, an HF antenna shorting strap must be connected to ground the antenna to the airframe. The strap is provided and is stowed in the tail cone. (Figure 202)

### 3. Observant Inspection

- A. During maintenance procedures involving instruments, check for cracked or broken glass faces, obscured face or instrument markings, and looseness of instrument mounting.
- B. During removal/installation of rack mounted units, check electrical connectors on rack and unit for bent/broken or contaminated pins, check for cracked, loose or corrosion in or about plugs, check for damaged wiring.
- C. During removal/installation of plugs or coaxial connectors from components, check for bent/broken and contaminated connector pins, damaged wiring or corrosion.

### 4. Component Handling

- A. When a repairable component is removed and replaced, the component removed should be properly packaged or handled for transport to repair depot or shop.

### 5. Electrical Connectors and Lines

- A. After disconnection of electrical connectors, hoses or lines, the open connection points of connectors, hoses, or lines should be protected from damage and contamination by suitable caps or coverings.

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WJE ALL

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### 6. Cleaning

- A. When toxic materials such as cleaning solvents are used in enclosed areas the area should be well ventilated to prevent personnel from inhalation of fumes.
- B. Removal of sealants from aircraft surfaces should be removed with a non-metallic scraper to prevent damage to aircraft surface covering.
- C. Aircraft surfaces stripped and cleaned for bonding purposes should not be extensively cleaned beyond the bonding area. Exposed surfaces are subject to corrosion. Exposed areas beyond bonding should be treated to match the adjoining surface.

### 7. Corrosion

**NOTE:** Any procedure for corrosion removal from components or surfaces should be analyzed for possible damage to component or surface. The component or surface should be properly inspected after corrosion treatment to make certain it is structurally or operable accepted.

- A. Corrosion can be removed with a nylon abrasive pad, surface should be thoroughly cleaned of residue, dried and treated with a corrosive inhibitive compound. After sufficient drying, the surface should be treated to correspond to the surrounding surface.
- B. The following is recommended when any antenna is replaced, or moisture accumulation is suspected:
  - (1) Remove any existing corrosion from antenna connector plug and receptacle with stainless steel wire brush or nylon abrasive pad.

**WARNING:** P-D-680 TYPE 1 SOLVENT IS AN AGENT THAT IS FLAMMABLE AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN P-D-680 TYPE 1 SOLVENT 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 P-D-680 TYPE 1 SOLVENT 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.

- (2) Remove residue with clean cloth dampened with P-D-680.
- (3) Connect coax cable to antenna receptacle.
- (4) After mating connectors, coat all metal surfaces of entire assembly (antenna receptacle and coax connectors, as applicable) with corrosion inhibiting compound.
- (5) Allow applied compound to air dry for four (4) hours with adequate ventilation before installing antenna.

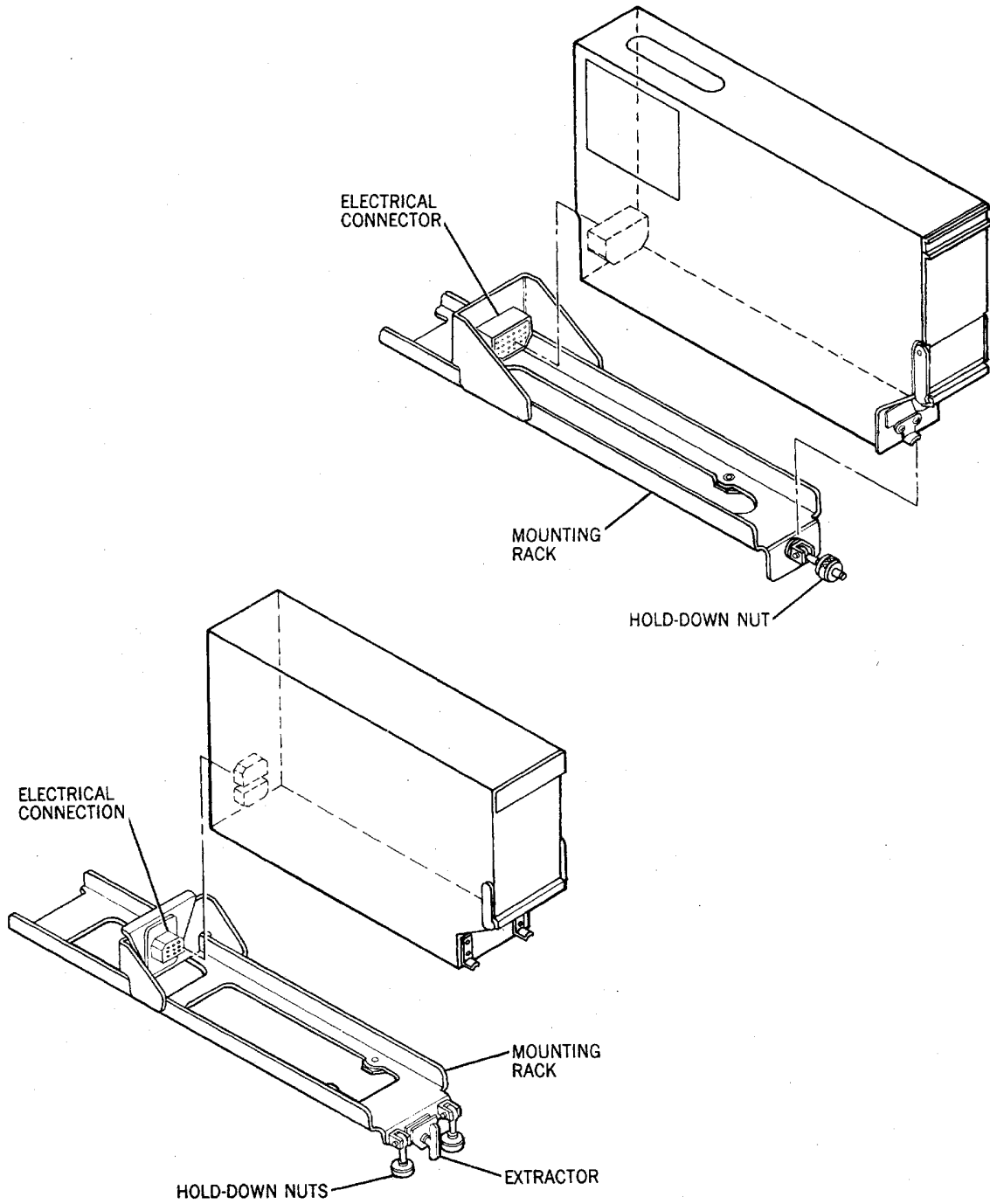
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**Rack Mounted Units - Removal/Installation -- Typical**  
Figure 201/23-00-00-990-801

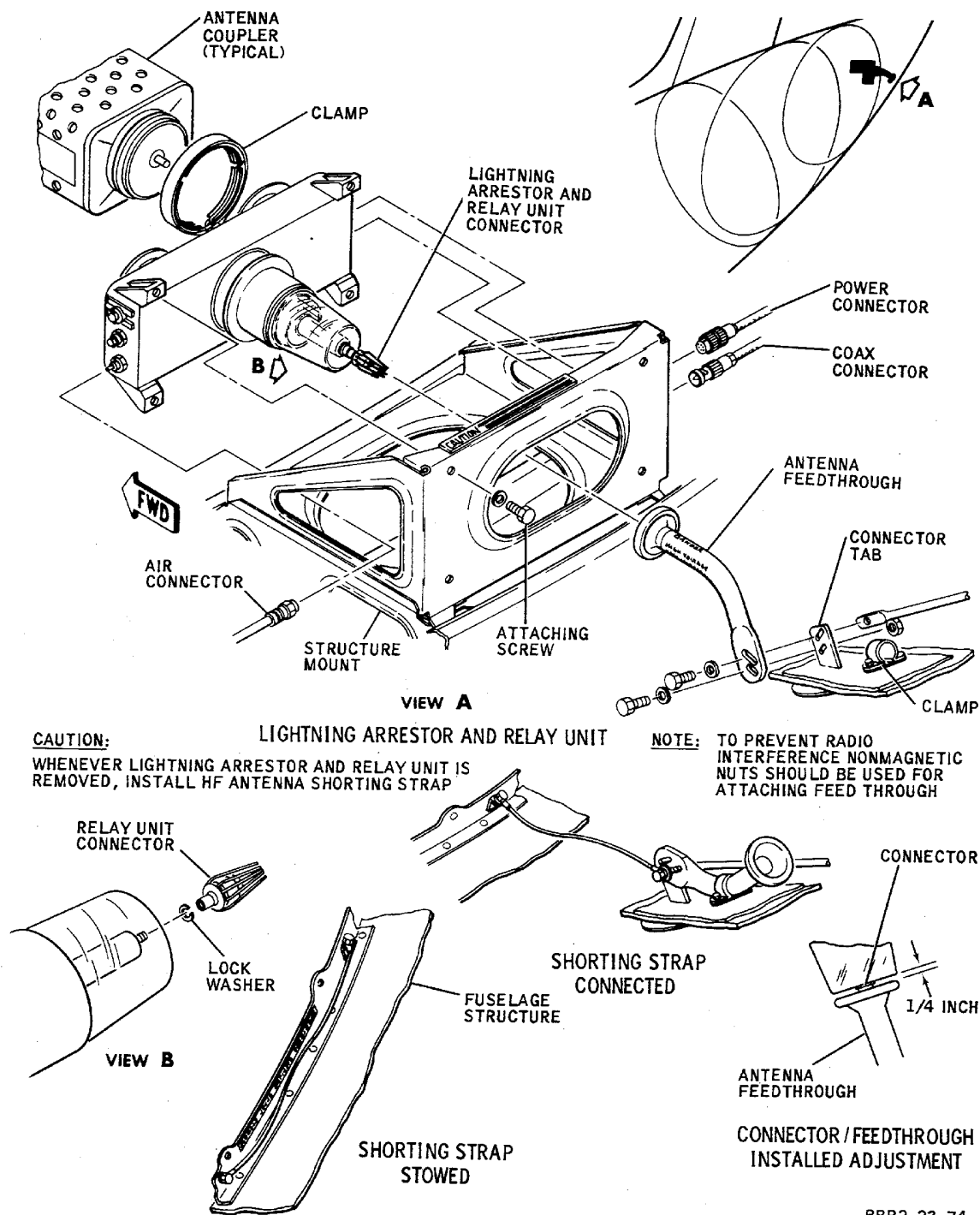
EFFECTIVITY  
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Lightning Arrestor and Relay Unit -- Removal/Installation  
Figure 202/23-00-00-990-802

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### HIGH FREQUENCY (HF) - DESCRIPTION AND OPERATION

#### 1. General

##### **WJE 410, 881, 883, 892**

- A. The high frequency (HF) system provides long range communication between the aircraft and a ground station or another aircraft. The system comprises dual installations designated HF-1 and HF-2, which are used for transmitting and receiving single-side-band and amplitude-modulated signals. The system provides communication facilities for a maximum of 24,200 frequencies within a range of 2.000 to 26.999 MHz. The HF communication system is composed of: two HF transceivers, control panels, HF keying isolation relays, HF antenna couplers, HF antenna coupler accessory units, lightning arrestor and relay units, and one HF antenna.

NOTE: With a Collins HF communications part number P/N 622-5377-001, the frequency range is 2.8000 to 23.9999 MHz.

##### **WJE 401-404, 407, 408, 411, 412, 414**

- B. The high frequency (HF) system provides long range communication between the aircraft and a ground station or another aircraft. The system is a single installation designated HF-1 and is used for transmitting and receiving single-side-band and amplitude-modulated signals. The system provides communication facilities for a maximum of 24,200 frequencies within a range of 2.000 to 26.999 MHz. The HF communication system is composed of: an HF transceiver, control panel, HF keying isolation relays, HF antenna coupler, HF antenna coupler accessory unit, lightning arrestor and relay unit, and HF antenna.

NOTE: With a Collins HF communications part number P/N 622-5377-001, the frequency range is 2.8000 to 23.9999 MHz.

##### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

#### 2. Description

- A. HF Transceiver - The HF transceiver is a crystal-controlled, electronically-tuned component. The transceiver contains circuits which automatically tune the transmitter-receiver sections to the proper frequency whenever a channel is selected on the HF control panel. The transmitter is capable of transmitting up to 100 watts of amplitude-modulated RF energy and 200 watts peak emitted power for single-side-band transmission. The receiver employs dual conversion. Outputs are 200 mW voice and 0.5-V SELCAL audio. The receiver also provides 200-mW sidetone output during transmissions, and a 1,000 Hz tone during the tuning cycle of the external antenna coupler. Front-panel features comprise two fault lamps, phone and microphone jacks, and a squelch/lamp-test switch (Paragraph 2.H.). Electrical connections are made through connectors located at the rear of the transceiver. Transceiver location is the aft left radio rack in the electrical/electronics compartment.
- B. Power Supply - The power supply is contained within the transceiver case and provides all necessary voltages required for operation of the HF system. When the aircraft buses are energized and the HF system circuit breakers are closed, primary aircraft power is available to the power supply. When the mode selector switch on the control panel is placed in the USB, LSB, or AM positions, an on-off power relay in the transceiver is closed and operating voltages from the power supply are applied to all portions of the systems except for the high-voltage dc required by the transmitter sections. When the microphone push-to-talk button is pressed, an HF keying isolation relay is energized. Contacts of the energized relay connect 28-volts dc to a transmitter-start relay in the power supply. The transmitter-start relay is, in turn, energized and permits the voltages required for transmitting to be applied to the transmitter power amplifiers.

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- C. Transceiver Adapter - The transceiver adapter is used to fit the 3/4-ATR transceiver to standard 1-ATR mounting racks. The adapter is an L-shaped unit that has a dual DPX connector that interfaces with the transceiver, and a single DPA connector that interfaces with the radio-rack mount. A front-panel coax connector is connected to the external antenna coupler. A special screw-down fastener on the front panel secures the adapter to the transceiver. Refer to Paragraph 2.H. for additional features of front panel.

### WJE 401-404, 407, 408, 411, 412, 414, 875-879, 892

- D. HF Control Panel - The HF communication control panel is used for remote control of certain HF transmitting and receiving functions. Rotation of the frequency selection switches, until the desired channel appears in the adjacent window, will automatically tune the HF transceiver and associated equipment to the selected frequency. An RF SENS control provides adjustment of receiver audio level. A mode selector switch on the control panel provides selection of system OFF, upper side band (USB), lower side band (LSB), and amplitude modulation (AM). Control panel location is the overhead switch panel in the flight compartment.

### WJE 410, 881, 883

- E. HF Control Panel - The HF communication control panel is used for remote control of certain HF transmitting and receiving functions. Rotation of the frequency selection switches, until the desired channel appears in the adjacent window, will automatically tune the HF transceiver and associated equipment to the selected frequency. An RF SENS control provides adjustment of receiver audio level. A mode selector switch on the control panel provides selection of system OFF, upper side band (USB), lower side band (LSB), and amplitude modulation (AM). Control panel location is on the aft pedestal in the flight compartment.

### WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- F. Antenna Coupler - The antenna coupler provides impedance-matched coupling between the HF antenna and the transceiver. Because an antenna will become efficient and resonate properly only at a specific frequency, and since the HF system operates on a wide range of frequencies, a means of varying the antenna impedance to match that of the transceiver at all frequencies is required. Such matching is accomplished through use of a servo system which varies the inductance and capacitance of reactive elements within the HF antenna coupler. The servo system is controlled by circuits in the antenna coupler accessory units. Antenna coupler location is in the tail section aft of the pressure bulkhead.
- G. Antenna Coupler Accessory Unit - The antenna coupler accessory unit is composed of the relays and servo amplifiers necessary for operating tuning elements in the HF antenna coupler. When the HF transmitter is keyed by operation of the microphone push-to-talk button, an attenuated RF signal is supplied to the antenna coupler accessory unit for sampling purposes. If elements in the HF antenna coupler are aligned so that antenna impedance matches transmitter impedance, circuits in the HF antenna coupler accessory unit are advanced to the operate position. The system is then ready to accept a full power RF signal. If a mismatch is present, an error signal is generated in the HF antenna coupler and applied to servo amplifiers in the HF antenna coupler accessory unit. The servo amplifiers use the error signal to drive control circuits in the HF antenna coupler. The control circuits, in turn, drive reactive elements toward resonance with the antenna. When resonance is attained, the error signal is canceled by feedback signals, the control circuits come to rest, and the system is ready for Paragraph 2.H. transmitting operation. Electrical connections are made through connectors on the face of the unit along with coaxial connectors available for signal connections. HF antenna coupler accessory unit location is in the tail section aft of the pressure bulkhead.
- H. Front-panel Features, Transceiver & Adapter

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**Table 1**

ITEM (LOCATION)	FUNCTION
R/T FAULT lamp (Transceiver)	Yellow lamp lights for the following transceiver faults: Frequency synthesizer out of lock Low transmitter power output (60 watts nominal threshold) in AME transmit mode Low power supply voltage (+20-, +10- and +5-V dc monitored).
KEY INTERLOCK lamp (Transceiver)	Yellow lamp lights when transceiver is keyed if a fault exists in antenna coupler. Transceiver cannot transmit during this time.
SQL/LAMP TEST switch (Transceiver)	When pressed, R/T FAULT and KEY INTERLOCK lamps light and receiver squelch is disabled.
PHONE jack (Transceiver)	Receptacle for headphone plug.
MIC jack (Transceiver)	Receptacle for microphone plug.
SENS-SQL switch (Adapter)	Routes selected function from control panel to transceiver and grounds the other function. (Screwdriver operated)
ANT-A connector (Adapter)	Receptacle for transmit coax cable.
AUX ANT-B connector (Adapter)	Receptacle for receive coax cable.
ANT SELECT switch (Adapter)	Selects single antenna connection in A position or both antenna connections in A+B position. Use A+B position only. (Screwdriver operated)
OTHER-B747 switch (Adapter)	Selects microphone input circuitry compatible with type aircraft in which adapter installed. Toggle switch - use in OTHER position only.

- I. Lightning Arrestor and Relay Unit - The lightning arrestor and relay unit is designed to provide lightning strike protection to the HF system. Antenna transfer relays within the unit serve to electrically connect the HF antenna to the HF antenna coupler accessory unit when receiving or to the antenna coupler when transmitting. The receiver is disconnected from the antenna when the transmitter is operating. The lightning arrestor and relay unit is electrically mated and clamped to the antenna coupler, and is located in the aft accessory compartment at the tail cone attaching frame. Electrical connection to the HF antenna is provided by an antenna connector which slides into the antenna feedthrough. Pressurized air is supplied to the unit to prevent arcing at high altitudes. Whenever the lightning arrestor and relay unit is removed from the aircraft, an HF antenna shorting strap is provided for grounding the HF antenna to the airframe. The strap is permanently stowed in the tail cone.
- J. HF Antenna - The HF antenna is a tail-cap type and is an integral part of the aircraft tail cone. The antenna element is formed of metal-sprayed aluminum which covers a portion of the tail cone. Electrical connection to the antenna is made through a plate attached to the metal-sprayed surface by screws. The connector is bolted to an antenna feedthrough which connects, on the opposite end, to the lightning arrestor and relay unit. The attaching tab of the antenna connector and antenna feedthrough is also used to connect an HF antenna shorting strap when the lightning arrestor and relay unit has been removed from the aircraft.
- K. Audio Integration - The audio integrating system provides the interface between flight crew and the HF system. It comprises an audio control panel at each crew member's station, and one in the electrical/electronics compartment, with associated microphones, headsets, and pilot's speakers. Push-to-talk (PTT) and microphone audio signals may be connected to the HF transceiver selectively from any of the audio panels. The transceiver audio output is connected to all audio control panels through an HF keying isolation relay. (PAGEBLOCK 23-50-00/001)

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- L. Keying Isolation Relays - The HF keying isolation relays in the deenergized state connect audio from the opposite receiver to the audio integrating system, i.e., HF-1 relay connects HF-2 audio (if present) to the HF-2 input of the audio panels, and HF-2 relay connects HF-1 audio to the HF-1 input of the audio panels. An HF-1 PTT ground from an audio panel will cause the HF-1 keying isolation relay to energize. Similarly, an HF-2 PTT will cause the HF-2 relay to energize. When energized, HF-1 relay supplies a ground to the key input of the HF-1 transceiver, interrupts the receiver output line of HF-2, and connects HF-1 audio to the HF-2 input of the audio panels. HF-2 relay, when energized, supplies a ground to key the HF-2 transceiver (if installed), interrupts the receiver output line of HF-1, and connects HF-2 audio to the HF-1 input of the audio panels. The keying isolation relays are located on the equipment panel of the aft right radio rack, in the electrical/electronics compartment.

### 3. Operation

- A. Selection of a channel on the HF communication control panel frequency selection switches causes all circuits in the HF transceiver and the related antenna circuits to tune to the selected frequency. When the HF system is in the transmit mode, the audio picked up by the microphone is converted to electrical energy and applied as audio input, through the audio control panel, to the transceiver. The audio input signal is then amplified and applied to a modulator stage. The modulator impresses the audio signal upon the HF carrier signal at the power amplifier. The resultant modulated RF signal is then applied through the applicable antenna coupler to the lightning arrestor and relay unit. A transmit relay, energized by keying of the transmitter, connects the signal to the HF antenna. Sidetone is generated during transmission by rectifying a portion of the carrier signal in the RF power amplifier. The signal thus produced is coupled to the transceiver audio output amplifier and then applied to the headsets via the audio integrating system.
- B. When the HF system is in the receive mode, a receive relay in the lightning arrestor and relay unit is energized to the receive position. The selected frequency signals are received at the antenna and applied through the receive relay and the HF antenna coupler accessory unit to the HF transceiver. In the transceiver, the RF signal is amplified, converted to an IF signal, and demodulated. The resultant audio signal is applied through the audio control panels to the headsets or the flight compartment speakers. The RF SENS control on the HF control panel and the VOL control on the audio panel are used together to adjust the audio signal for clarity and comfortable level.

### 4. To Operate System

- A. System Operation.

**Table 2 To Operate System**

	Control	Position
<b>CAUTION:</b> DO NOT OPERATE RADIO EQUIPMENT WHEN RADIO RACK COOLING FAN WARNING LIGHT IS ON. OPERATION OF RADIO EQUIPMENT WHEN RADIO RACK BLOWER IS INOPERATIVE SHORTENS LIFE OF EQUIPMENT.		
A	Set RADIO RACK switch to FAN position.	
B.	Place controls to position indicated.	
<b>CAUTION:</b> TRANSCEIVER BLOWER SHOULD START WHEN TRANSMITTER IS KEYED. IF BLOWER DOES NOT START, CEASE TRANSMITTING IMMEDIATELY, TO AVOID OVERHEATING OF TRANSCEIVER.		
(1)	HF control panel mode selector switch	To desired mode (USB, LSB, or AM)

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**Table 2 To Operate System (Continued)**

	Control	Position
<b>NOTE:</b> Allow 10 minutes for system warm-up.		
(2)	Audio control panel HF microphone selector	Depressed
(3)	Audio control panel HF volume control lever	Mid-range
(4)	HF control panel frequency selection switches	Desired frequency
(5)	Audio control panel volume control and HF control panel RF SENS control	Adjust for best audio
<b>NOTE:</b> System is now ready to operate. When microphone PTT switch is pressed, system antenna will radiate at selected frequency.		

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### HIGH FREQUENCY SYSTEM - TROUBLE SHOOTING

#### 1. General

- A. Trouble shooting procedures described in this section are basic for isolating and correcting faults in the HF communications system in the aircraft.
- B. The basic causes of a faulty system operation are generally, faulty aircraft wiring or faulty Line Replaceable Units (LRUs).
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.
- D. The major components of the system are: the HF transceiver, HF control panel, antenna, antenna coupler, antenna coupler accessory unit, lightning arrestor and relay unit and the keying isolation relays. The system interfaces with the audio integrating system, which is involved in Trouble Shooting.
- E. The components are located as follows:

**Table 101**

Component	Location
Audio Control Panels	Flight Compartment, Crews' Station Electrical/electronics Compartment
Accessory Unit, Antenna Coupler	Aft Accessory Compartment
Antenna	Integral with Tail Cone
Coupler, Antenna	Aft Accessory Compartment
Lightning Arrestor/Relay Unit	Aft Accessory Compartment
Relays, Keying Isolation	Aft Right Equipment Panel, Electrical/Electronics Compartment
Circuit Breakers	
HF COMM-1 (3): Phase A, B, & C	EPC Circuit Breaker Panel
HF COMM-1 (28 VDC)	EPC Circuit Breaker Panel
<b>WJE 410, 881, 883, 892</b>	
HF COMM-2 (3): Phase A, B, & C	EPC Circuit Breaker Panel
HF COMM-2 (28 VDC)	EPC Circuit Breaker Panel
<b>WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892</b>	
FLIGHT INTERPHONE -1	Overhead Circuit Breaker Panel
FLIGHT INTERPHONE -2	EPC Circuit Breaker Panel

#### 2. Equipment and Materials

NOTE: Equivalent substitutes can be used in place of the following listed item.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

Table 102

Name and Number	Manufacturer
Multimeter 2000A	Dana

### 3. Trouble Shooting HF Communications System

#### 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. LRUs are HF transceiver, control panel, coupler, coupler accessory unit, lightning arrestor/relay unit and keying isolation relay.

NOTE: The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volt RMS  $\pm$  10% across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.

**CAUTION:** TO AVOID OVERHEATING OF TRANSCEIVER WHEN OPERATED:

- (1) RADIO RACK FAN MUST BE OPERATION.
- (2) TRANSCEIVER BLOWER MUST START WHEN USB, LSB, OR AM MODE IS SELECTED. IF IT DOES NOT, SWITCH OFF.
- (3) TRANSCEIVER BLOWER SPEED MUST INCREASE WHENEVER TRANSMITTER IS KEYED. IF IT DOES NOT, UNKEY IMMEDIATELY.

Table 103

	Procedures	Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Substitute units known to be serviceable, for LRUs or components suspected of being faulty.	Replace faulty LRUs or components.
(3)	Check for proper grounds at LRUs. 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 LRUs.
(4)	Perform continuity check of airplane wiring. A hot continuity check may be required to check operation of relays or other associated actuation components to complete a continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in airplane wiring.

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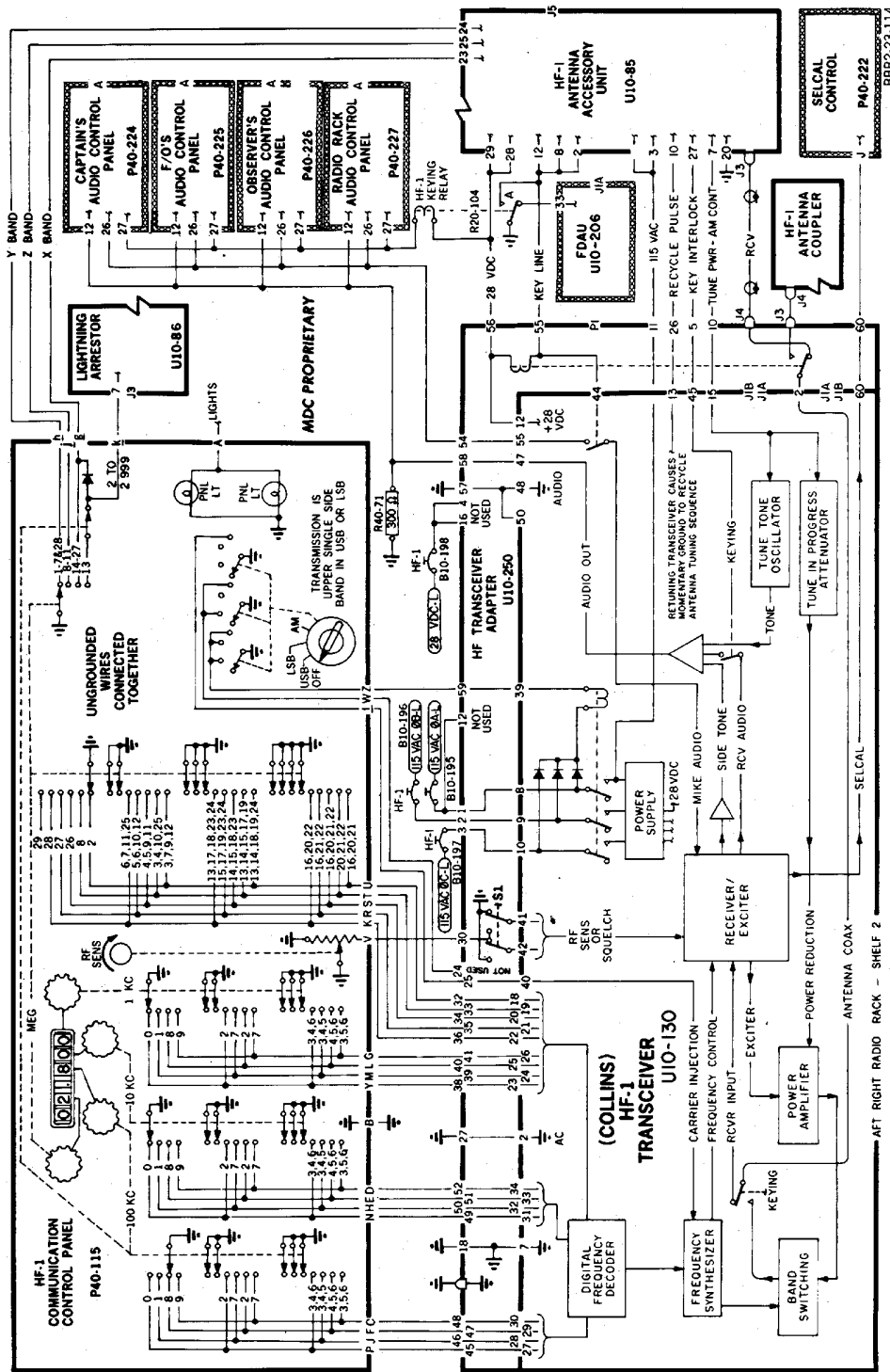
WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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HF-1 Communication System -- Schematic  
Figure 101/23-10-00-990-802 (Sheet 1 of 4)

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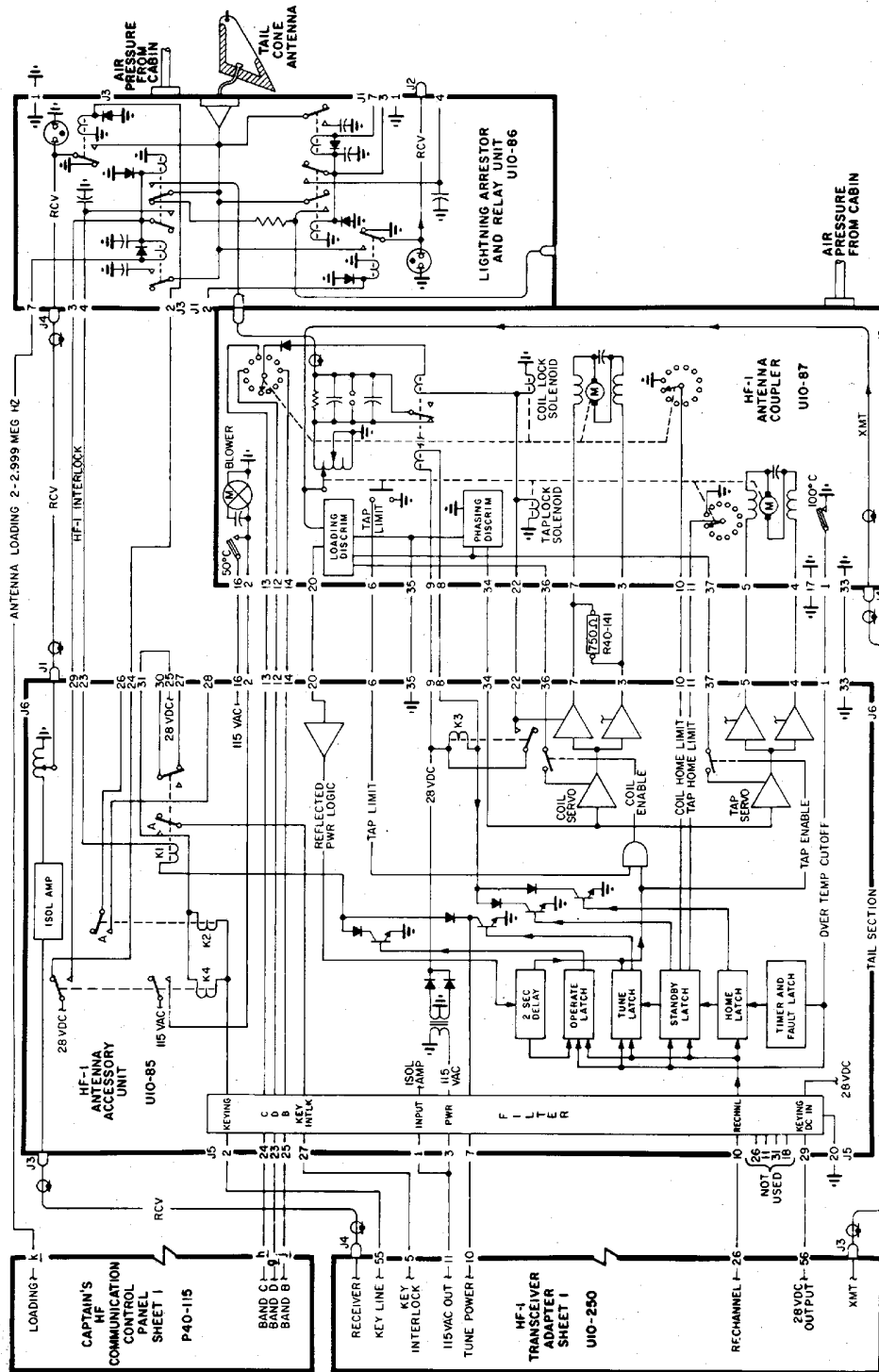
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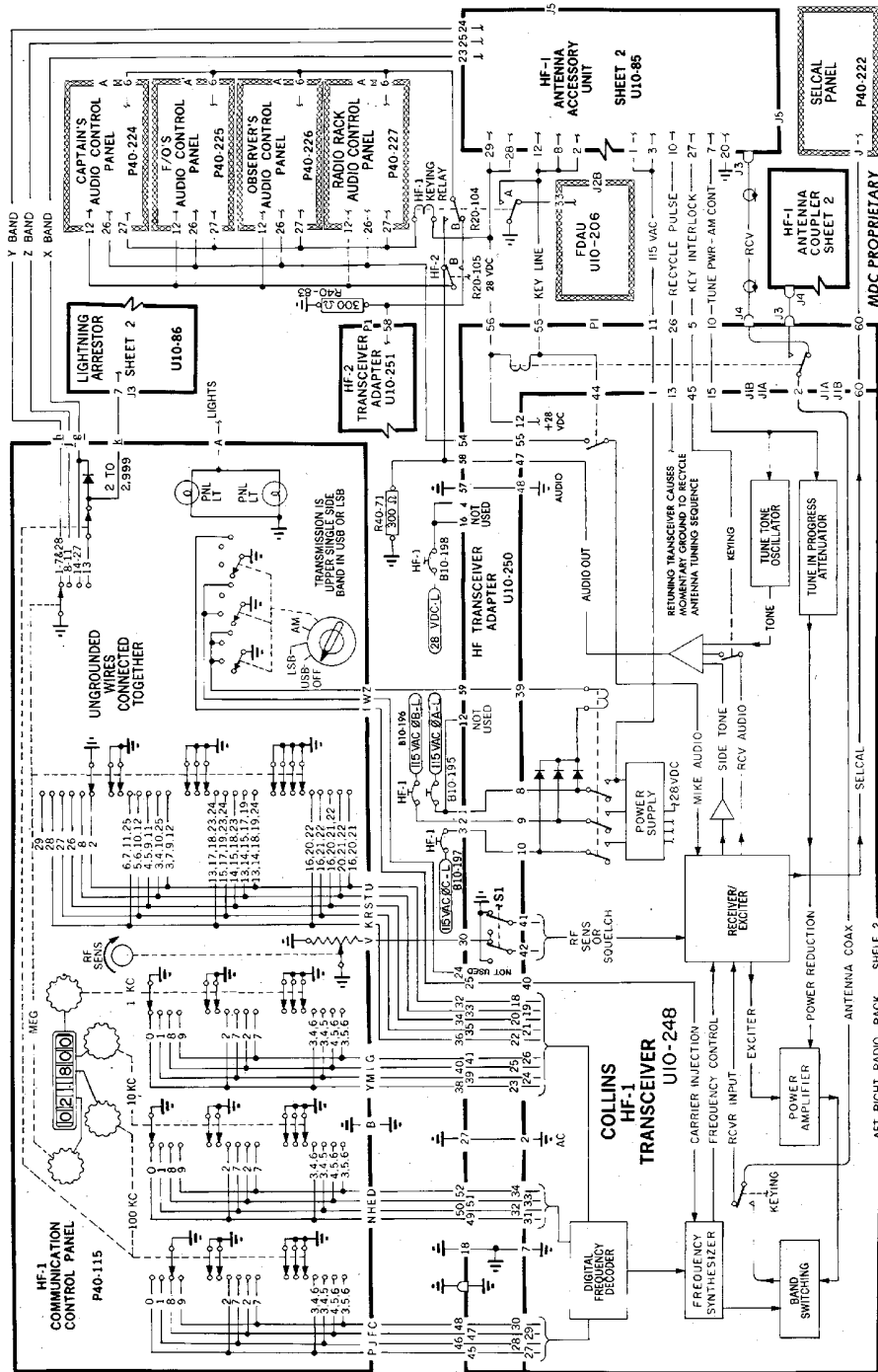
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HF-1 Communication System -- Schematic  
Figure 101/23-10-00-990-802 (Sheet 2 of 4)

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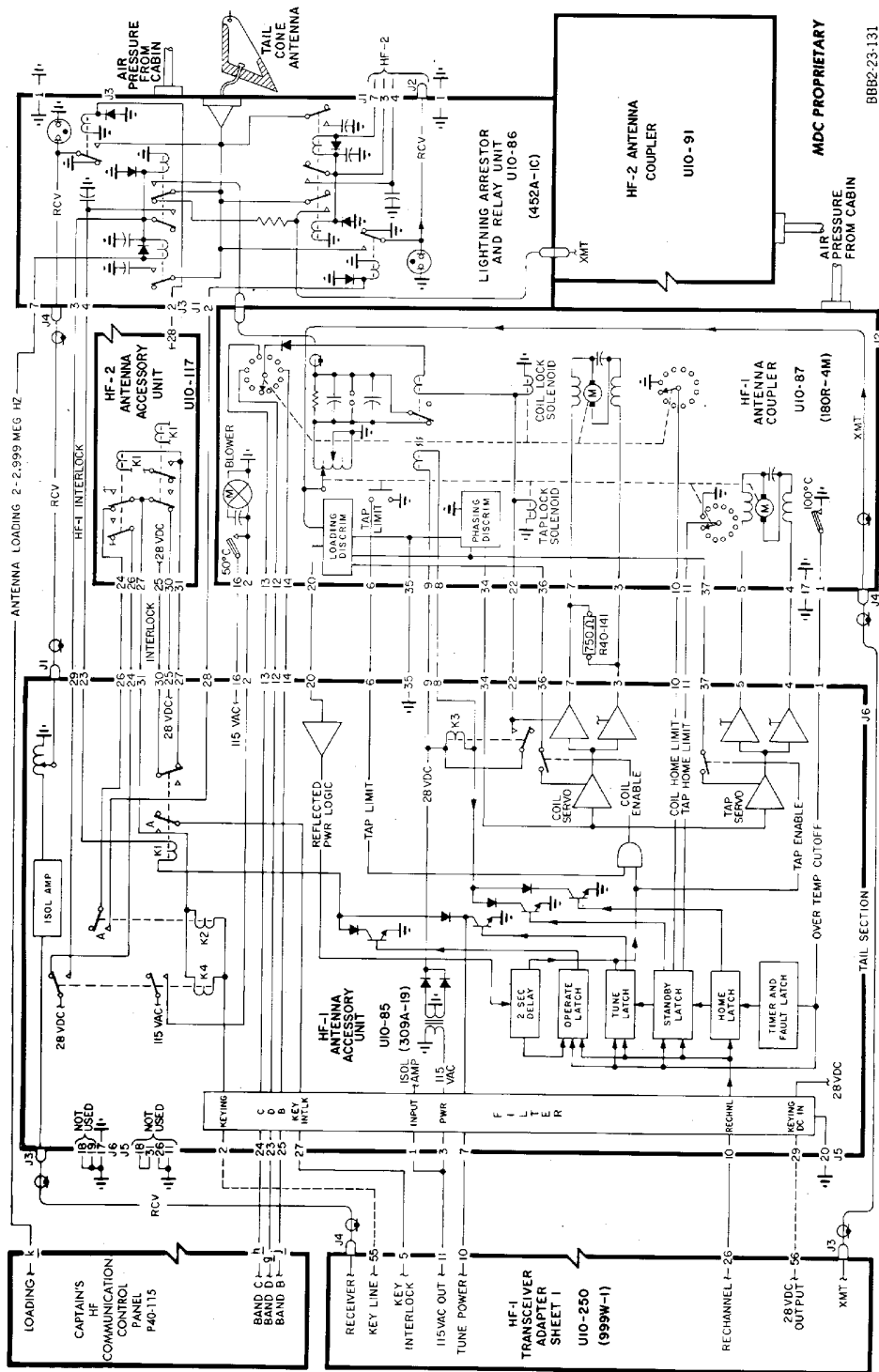
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HF-1 Communication System -- Schematic  
Figure 101/23-10-00-990-802 (Sheet 3 of 4)

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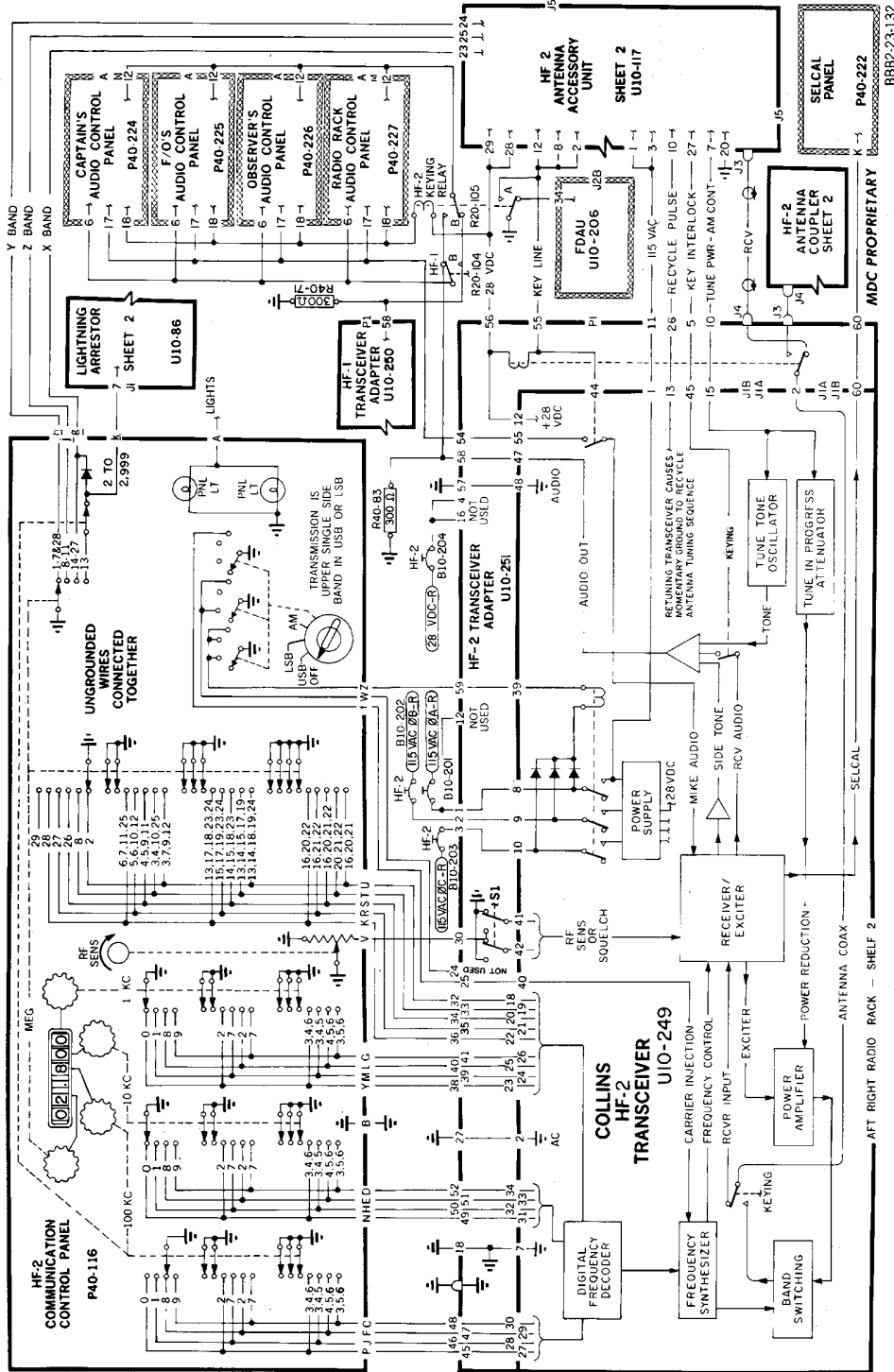
**HF-1 Communication System -- Schematic  
Figure 101/23-10-00-990-802 (Sheet 4 of 4)**

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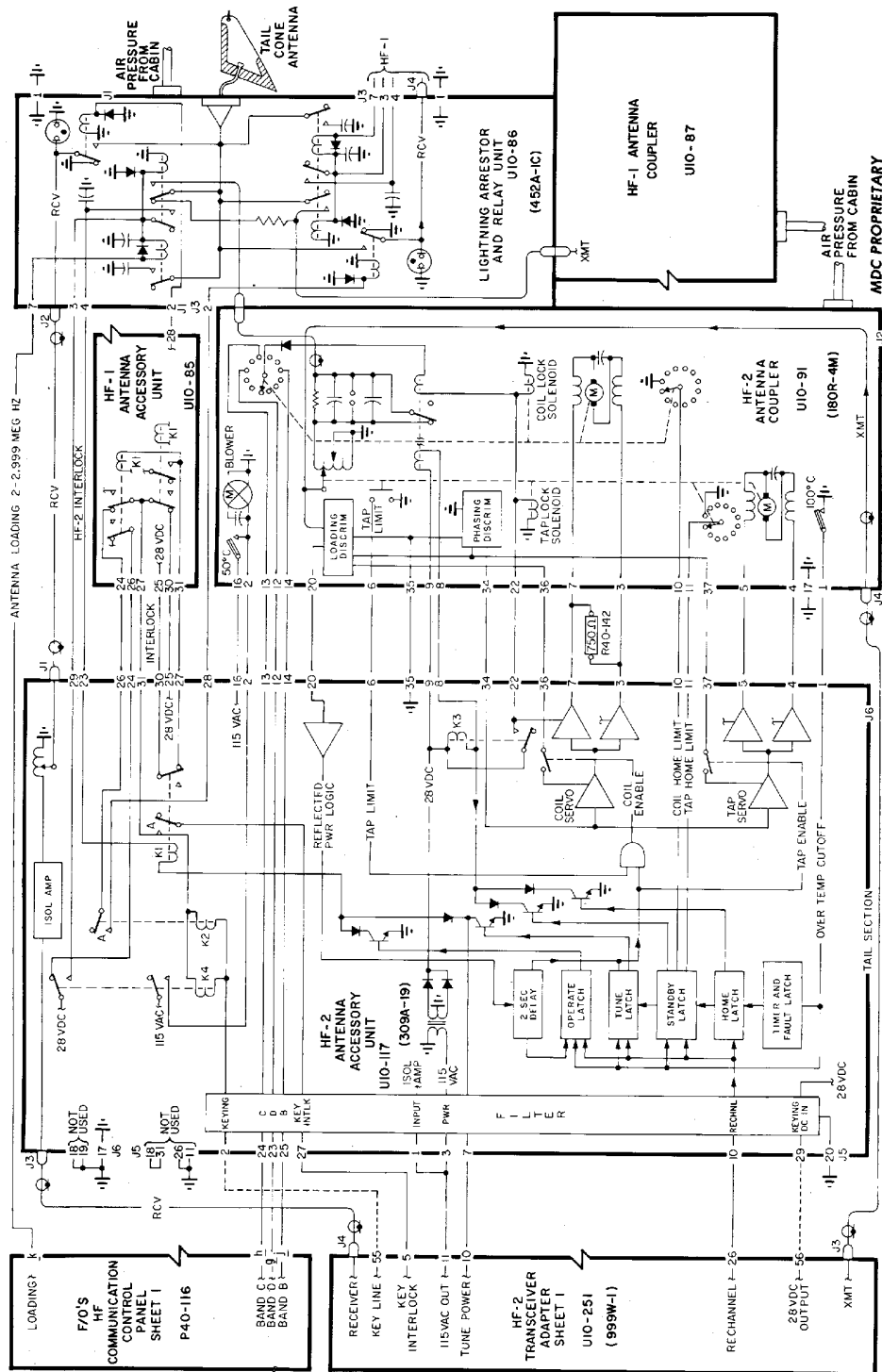


**HF-2 Communication System -- Schematic  
Figure 102/23-10-00-990-807 (Sheet 1 of 2)**

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**HF-2 Communication System -- Schematic  
Figure 102/23-10-00-990-807 (Sheet 2 of 2)**

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## HIGH FREQUENCY SYSTEM - MAINTENANCE PRACTICES

### 1. General

#### WJE 410, 881, 883, 892

- A. These maintenance practices are adjustment/test procedures for verifying correct performance of the HF system. Procedures are written for HF-1 or HF-2 system.

#### WJE 401-404, 407, 408, 411, 412, 414

- B. These maintenance practices are adjustment/test procedures for verifying correct performance of the HF system.

#### WJE 401-404, 407, 408, 410-412, 414, 875-879

- C. The remote control panel for the HF system is located on the overhead switch panel in the flight compartment. Audio control panels are located on the pedestal, the observer's console, and on the aft right radio rack equipment panel in the electrical/electronics compartment.

#### WJE 881, 883, 892

- D. The remote control panels for the HF system are located on the aft pedestal in the flight compartment. Audio control panels are located on captain's and first officer's outboard consoles, overhead switch panel, and on the aft right radio rack equipment panel in the electrical/electronics compartment.

#### WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

### 2. Equipment and Materials

NOTE: Equivalent substitute may be used instead of the following listed item:

**Table 201**

Name and Number	Manufacturer
RF Wattmeter with 250 watt element, 2.0 to 30.0 MHz, ThruLine 43	Bird Electronics Corp.

### 3. Adjustment/Test HF System

- A. Preliminary
  - (1) Energize aircraft electrical buses.

**CAUTION:** THE GROUND OPERATION OF THE HF COMM SYSTEM WITH ANY EXTERNAL GROUND EQUIPMENT ATTACHED TO THE AIRCRAFT MAY INTERFERE WITH OTHER ELECTRICAL AND/OR ELECTRONIC SYSTEMS IN THE AIRCRAFT.

- (2) Make sure that these circuit breakers are closed:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 411, 412, 414, 875-879, 881, 883, 892</b>			
A	10	B10-47	FLIGHT INTERPHONE-1

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(Continued)

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410			
A	11	B10-47	FLIGHT INTERPHONE-1

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883, 892			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883			
E	3	B10-204	HF COMM-2

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**CAUTION:** DO NOT OPERATE RADIO RACK EQUIPMENT WHEN RADIO RACK COOLING FAN IS INOPERATIVE. OPERATING RADIO RACK EQUIPMENT WHEN FAN IS INOPERATIVE GREATLY SHORTENS LIFE OF EQUIPMENT.

(3) Set the radio rack fan switch to FAN.

B. Test Receiving Function

**NOTE:** The HF antenna coupler systems are designed to channel not more than once for each minute of operation. If it is necessary to channel more often, check for overheating of units.

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**Table 202**

	Operation	Desired Result
<p><b>CAUTION:</b> THE GROUND OPERATION OF THE HF COMM SYSTEM WITH ANY EXTERNAL GROUND EQUIPMENT ATTACHED TO THE AIRCRAFT MAY INTERFERE WITH OTHER ELECTRICAL AND/OR ELECTRONIC SYSTEMS IN THE AIRCRAFT.</p>		
(1)	On HF control panel, rotate mode selector to AM position, and RF SENS control clockwise.	
(2)	On captain's audio panel, adjust HF volume control to mid range. Adjust all other volume controls to OFF position.	Receiver background noise, or audio is present.
<p><b>NOTE:</b> Adjustment of audio panel volume control in conjunction with adjustment of HF control panel RF SENS may be necessary for optimum audio level with minimum noise.</p>		
(3)	Using captain's headset, listen while tuning receiver to several frequencies.	Background noise present on all frequencies.
(4)	Select channel having strongest signal and rotate RF SENS control on HF control panel.	Smooth variation in signal (or noise) level.
(5)	During reception of a voice transmission, switch mode selector on HF control panel to USB.	Voice quality equally good in both modes.
(6)	Repeat steps (1) through (5) using, in turn, first officer's, observer's, and radio rack stations.	Same as for captain's station.
(7)	On HF control panel, rotate mode selector to OFF.	

WJE 401-404, 407, 408, 411, 412, 414

**Table 203**

	Operation	Desired Result
(1)	On HF control panel, rotate mode selector to AM position, and RF SENS control clockwise.	
(2)	On captain's audio panel, adjust HF-1 volume control to mid range. Adjust all other volume controls to OFF position.	Receiver background noise, or audio is present.
<p><b>NOTE:</b> Adjustment of audio panel volume control in conjunction with adjustment of HF control panel RF SENS may be necessary for optimum audio level with minimum noise.</p>		
(3)	Using captain's headset, listen while tuning receiver to several frequencies.	Background noise present on all frequencies.
(4)	Select channel having strongest signal and rotate RF SENS control on HF control panel.	Smooth variation in signal (or noise) level.
(5)	During reception of a voice transmission, switch mode selector on HF control panel to USB.	Voice quality equally good in both modes.
(6)	Repeat steps (1) through (6) using, in turn, first officer's, observer's, and radio rack stations.	Same as for captain's station.
(7)	On HF control panel, rotate mode selector to OFF.	

**EFFECTIVITY**

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

C. Test Transmitting Function

**WJE 401-404, 407, 408, 411, 412, 414**

**Table 204**

Operation		Desired Result
(1)	On HF control panel, set mode selector to OFF.	
(2)	On EPC circuit breaker panel, open four (4) HF-1 circuit breakers.	Power removed from HF system.
(3)	Install thruline wattmeter between transceiver adapter ANT - A terminal and transmit coaxial cable. Rotate element to point face arrow in direction of antenna cable.	Wattmeter installed.
(4)	Close circuit breakers opened in step (2).	Power available to HF system.
(5)	On HF control panel, rotate mode selector to AM position.	
(6)	Channel transceiver to frequency in vicinity of 3000 kHz.	
(7)	On radio rack audio panel, press HF-1 microphone selector.	
(8)	Press microphone PTT switch and allow antenna system to tune.	BLOWER SPEED INCREASES. 1000 Hz tune tone in headset during tune cycle.
(9)	At HF control panel, tune transceiver for communication with local tower, establish communication.	Frequency correct; signal strength acceptable and audio clear.
(10)	Make test transmissions in AM, USB, AND LSB modes.	Sidetone of good quality in all modes.
(11)	At radio rack audio panel, press microphone PTT switch (do not speak) and observe thruline wattmeter indication of forward power.	50 watts minimum.
(12)	Cease transmitting, and rotate wattmeter element to point face arrow in direction of transceiver.	
(13)	Press PTT switch (do not speak) and observe wattmeter indication of reflected power.	Not more than 5 watts.
<b>CAUTION:</b> IN FOLLOWING STEP, DO NOT USE 8364 KHZ EMERGENCY FREQUENCY.		
(14)	Repeat step (10) using available frequencies near as possible to the following: 3.000, 5.000, 9.000, 13.000, 17.000, and 21.000 MHz.	Same as for step (10).
(15)	On HF control panel tune HF system to establish AM communications with local tower.	
(16)	Communicate with tower using captain's, first officer's, observer's and radio rack audio panels in turn, with their associated microphones and headsets.	Sidetone and received audio of good quality at each station.

**EFFECTIVITY**

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 401-404, 407, 408, 411, 412, 414 (Continued)**

**Table 204 (Continued)**

Operation		Desired Result
(17)	Turn HF mode selector to OFF, and open HF-1 circuit breakers.	Power removed from HF system.
(18)	Remove wattmeter and reconnect antenna coax to transceiver.	
(19)	The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS $\pm 10\%$ across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.	
(20)	Return Aircraft to required configuration.	

**WJE 410, 881, 883, 892**

**Table 205**

Operation		Desired Result
(1)	On HF control panel, set mode selector to OFF.	
(2)	On EPC circuit breaker panel, open four (4) applicable HF system circuit breakers.	Power removed from HF system.
(3)	Install thru-line wattmeter between transceiver adapter ANT - A terminal and transmit coaxial cable. Rotate element to point face arrow in direction of antenna cable.	Wattmeter installed.
(4)	Close circuit breakers opened in step (2).	Power available to HF system.
(5)	On HF control panel, rotate mode selector to AM position.	
(6)	Channel transceiver to frequency in vicinity of 3.000 MHz.	
(7)	On audio panel, press applicable HF microphone selector.	
(8)	Press microphone PTT switch and allow antenna system to tune.	TRANSCEIVER BLOWER STARTS. 1000 Hz tune tone in headset during tune cycle.
(9)	At HF control panel, tune transceiver for communication with local tower, establish communication.	Frequency correct; signal strength acceptable and audio clear.
(10)	Make test transmissions in AM, USB, AND LSB modes.	Sidetone of good quality in all modes.
(11)	At audio panel, press microphone PTT switch (do not speak) and observe thru-line wattmeter indication of forward power.	50 watts minimum.
(12)	Cease transmitting, and rotate wattmeter element to point face arrow in direction of transceiver.	
(13)	Press PTT switch (do not speak) and observe wattmeter indication of reflected power.	Not more than 5 watts.

EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 410, 881, 883, 892 (Continued)

**Table 205 (Continued)**

	Operation	Desired Result
<b>CAUTION:</b> IN FOLLOWING STEP, DO NOT USE 8364 KHZ EMERGENCY FREQUENCY.		
(14)	Repeat step (10) using available frequencies near as possible to the following: 3.000, 5.000, 9.000, 13.000, 17.000, and 21.000 MHz.	Same as for step (10).
(15)	On HF control panel tune HF system to establish AM communications with local tower.	
(16)	Communicate with tower using captain's, first officer's, observer's and radio rack audio panels in turn, with their associated microphones and headsets.	Sidetone and received audio of good quality at each station.
(17)	Turn HF mode selector to OFF, and open applicable HF system circuit breakers.	Power removed from HF system.
(18)	Remove wattmeter and reconnect transmit coax to transceiver adapter.	
(19)	Close circuit breakers opened in step (17).	
(20)	On HF-1 and HF-2 control panels, set mode selector to AM and turn RF SENS clockwise.	
(21)	On captain's audio panel, press HF-1 microphone selector and place HF-1 volume lever up. Place all other volume levers down.	
(22)	On first officer's audio panel, press HF-2 microphone selector and adjust HF-2 volume control to mid range. Adjust all other volume controls to off position.	
(23)	With HF-1 keyed at captain's station, attempt to transmit on HF-2 from first officer's station.	No HF-2 sidetone in headset at first officer's station, indicating HF-2 not keyed.
(24)	Unkey HF-1.	
(25)	With HF-2 keyed at first officer's station, attempt to transmit on HF-1 from captain's station.	NO HF-1 sidetone in headset at captain's station, indicating HF-1 not keyed.
(26)	Unkey HF-2.	
(27)	The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS $\pm 10\%$ across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.	
(28)	Return Aircraft to required configuration.	

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## HIGH FREQUENCY TRANSCEIVER - MAINTENANCE PRACTICES

### 1. General

#### **WJE 410, 875-879, 881, 883, 892**

- A. These maintenance practices provide removal/installation and adjustment/test procedures for the HF transceivers and transceiver adapters, both as an assembly and separately. The HF transceivers are located in the E/E compartment on shelf 2 of the aft right radio rack. Access to the transceivers is through the E/E compartment lower door.

#### **WJE 401-404, 407, 408, 411, 412, 414, 875-879**

- B. These maintenance practices provide removal/installation and adjustment/test procedures for the HF transceiver and transceiver adapter, both as an assembly and separately. The HF transceiver is located in the E/E compartment on shelf 2 of the aft right radio rack. Access to the transceiver is through the E/E compartment lower door.

#### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

### 2. Removal/Installation

- A. Remove HF Transceiver/Adapter Assembly

**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>
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#### **WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892**

D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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E	15	B10-198	HF COMM-1
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#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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#### **WJE 410, 881, 883, 892**

D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

#### **UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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#### **WJE 410, 881, 883**

E	3	B10-204	HF COMM-2
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EFFECTIVITY

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**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) At adapter ANT connector and AUX RCVR ANT connector, disconnect coaxial cables.
- (3) Loosen hold-down nuts that secure transceiver and adapter to radio-rack mount, and swing downward to clear hold-down hooks.
- (4) Loosen hold-down nuts that secure transceiver radio-rack mount, and swing downward to clear hold-down hooks.
- (5) Using handle on front of transceiver, pull out on transceiver until rear connector of adapter is disengaged from radio-rack mount.
- (6) Using both hands slide transceiver/adapter assembly out of mount.

NOTE: Assembly weight 17.2 kg (38 pounds).

**B. Remove HF Transceiver Separately**

**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>
------------	------------	---------------	-------------

**WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892**

D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

**UPPER EPC, LEFT RADIO DC BUS**

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

E	15	B10-198	HF COMM-1
---	----	---------	-----------

**UPPER EPC, RIGHT RADIO AC BUS**

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

**WJE 410, 881, 883, 892**

D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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**WJE 410, 881, 883**

E	3	B10-204	HF COMM-2
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**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Loosen hold-down nut that secures transceiver to adapter and swing clear of hook on transceiver.
- (3) Loosen hold-down nut that secures transceiver to radio-rack mount, swing downward to clear hold-down hooks.
- (4) Using handle on front of transceiver, pull out on transceiver until rear connector is disengaged from adapter.

EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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- (5) Using both hands slide transceiver/adapter assembly out of mount.

NOTE: Assembly weight 13.6 kg (30 pounds).

C. Remove Transceiver Adapter Separately

**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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

**UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Disconnect coaxial cables from adapter ANT and AUX RCVR ANT connectors.  
 (3) Loosen hold-down nut that secures adapter to radio-rack mount.  
 (4) Pull out on adapter until rear connector is disengaged from radio-rack mount.  
 (5) Using both hands, slide adapter out of mount.

NOTE: Adapter weight 3.62 kg (8 pounds).

D. Install HF Transceiver/Adapter Assembly

**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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			

EFFECTIVITY <b>WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892</b>
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892 (Continued)

(Continued)

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (2) Visually check transceiver adapter, and mounting rack connectors for damaged pins and foreign objects.
- (3) Place transceiver/adapter assembly on mounting rack.  
NOTE: Transceiver weight 17.2 kg. (38 pounds).
- (4) Carefully slide assembly into mount until alignment pins are engaged and adapter connector is mated with radio-rack connector.
- (5) Firmly push in on transceiver/adapter assembly until connectors are completely engaged.
- (6) Raise hold-down nuts, mate with hold-down hooks on transceiver and adapter, and tighten securely.
- (7) On transceiver adapter, verify selector switches are set correctly: ANT SELECT to A + B; SQUELCH/RF SENS to RF SENS.
- (8) Connect coaxial cables to ANT connector and AUX RCVR ANT connector on adapter.
- (9) 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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

(10) Proceed to Paragraph 3..

E. Install HF Transceiver Adapter Separately

**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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 410, 881, 883, 892 (Continued)

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

(2) Visually check transceiver adapter, and mounting rack connectors for damaged pins and foreign objects.

(3) Place adapter on mounting rack.

NOTE: Adapter weight 3.62 kg. (8 pounds).

(4) Carefully slide adapter into mount until alignment pins are engaged and connector is mated with radio-rack connector.

(5) Firmly push in on adapter until connectors are completely engaged.

(6) Raise hold-down nuts, mate with hold-down hook on adapter, and tighten securely.

(7) Verify selector switches are set correctly: ANT SELECT to A + B; SQUELCH/RF SENS to RF SENS.

(8) Connect coaxial cables to ANT connector and AUX RCVR ANT connector on adapter.

F. Install HF Transceiver Separately

**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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 410, 881, 883, 892 (Continued)

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (2) Visually check transceiver adapter connectors for damaged pins and foreign objects.
- (3) Place transceiver on mounting rack.  
NOTE: Adapter weight 13.6 kg. (30 pounds).
- (4) Carefully slide transceiver into mount until alignment pins are engaged and connector is mated with adapter connector.
- (5) Firmly push in on transceiver until connectors are completely engaged.
- (6) Engage hold-down fastener that secures transceiver to adapter/rack mount, and tighten securely.
- (7) Raise hold-down nut that secures transceiver to mount, mate with hold-down hook on transceiver, and tighten securely.
- (8) 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 401-404, 407, 408, 410-412, 414, 881, 883, 892			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883, 892			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (9) Proceed to Paragraph 3..

### 3. Adjustment/Test HF Transceiver

- A. Test HF Transceiver

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** DO NOT OPERATE RADIO EQUIPMENT WHEN RADIO RACK COOLING FAN WARNING LIGHT IS ON. OPERATION OF RADIO EQUIPMENT WHEN RADIO RACK BLOWER IS INOPERATIVE SHORTENS LIFE OF EQUIPMENT.

**CAUTION:** THE GROUND OPERATION OF THE HF COMM SYSTEM WITH ANY EXTERNAL GROUND EQUIPMENT ATTACHED TO THE AIRCRAFT MAY INTERFERE WITH OTHER ELECTRICAL AND/OR ELECTRONIC SYSTEMS IN THE AIRCRAFT.

- (1) Set radio rack fan switch to FAN.

**WJE 410, 875-879, 881, 883, 892**

- (2) On audio control panel, move HF-1 (HF-2) volume control up (on), and press HF-1 (HF-2) microphone selector switch.

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (3) On transceiver front panel, press SQL/LAMP TEST pushbutton. R/T FAULT and KEY INTERLOCK lamps should light. Receiver squelch should be disabled, and increased background noise should be audible in headset. Release pushbutton.

**WJE 410, 875-879, 881, 883, 892**

- (4) At HF-1 (HF-2) control panel, rotate RF SENS/SQUELCH to midposition. Rotate mode selector to USB, LSB and AM in turn, selecting several active frequencies in each mode. Received audio should be clear and undistorted.

**NOTE:** Readjust RF SENS/SQUELCH control and volume control as required for best reception.

**WJE 401-404, 407, 408, 411, 412, 414, 875-879**

- (5) At HF control panel, rotate RF SENS to mid-position. Rotate mode selector to USB, LSB and AM in turn, selecting several active frequencies in each mode. Received audio should be clear and undistorted.

**NOTE:** Readjust RF SENS control and volume control as required for best reception.

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

**CAUTION:** TRANSCEIVER BLOWER SHOULD START WHEN TRANSMITTER IS KEYED. IF BLOWER DOES NOT START, CEASE TRANSMITTING IMMEDIATELY, TO AVOID OVERHEATING OF TRANSCEIVER.

- (6) Press push-to-talk switch and communicate with another station, using USB, LSB and AM modes. A tuning tone should be heard in headset during tune cycles, and sidetone should be heard while speaking into microphone.

**NOTE:** R/T FAULT and KEY INTERLOCK lamps should remain off during system operation.

- (7) The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm 10\%$  across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.

- (8) Return aircraft to required configuration.

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

**23-10-01**



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### HF COMM CONTROL PANEL - MAINTENANCE PRACTICES

#### 1. General

- A. These maintenance practices provide removal/installation and adjustment/test procedures for the HF comm control panel(s). The control panel(s) are located in the flight compartment on the forward overhead switch panel.

#### 2. Removal/Installation

- A. Remove HF Comm Control 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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

##### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1
<b>WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892</b>			

##### **UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

##### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

##### **UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Apply hand pressure on control panel face, unlock slot-head fasteners, and release hand pressure.
- (3) Lower control panel from cavity and disconnect electrical connector.

- B. Install HF Comm Control Panel

#### EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1
<b>WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892</b>			

### UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Visually check control panel receptacle and mating connector for damage and foreign objects.
- (3) Connect electrical connector to control panel.
- (4) Position control panel in cavity.
- (5) Apply hand pressure to control panel face and lock slot-head fasteners.
- (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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

### UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883, 892			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

### 3. Adjustment/Test HF Comm Control Panel

A. Test HF Comm Control Panel

**CAUTION:** DO NOT OPERATE RADIO EQUIPMENT WHEN RADIO RACK COOLING FAN WARNING LIGHT IS ON. OPERATION OF RADIO EQUIPMENT WHEN RADIO RACK BLOWER IS INOPERATIVE SHORTENS LIFE OF EQUIPMENT.

- (1) Set radio rack fan switch to FAN.
- (2) Make sure that these circuit breakers are closed:

### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 407, 408, 411, 412, 414, 875-879, 881, 883, 892			
A	10	B10-47	FLIGHT INTERPHONE-1
WJE 410			
A	11	B10-47	FLIGHT INTERPHONE-1

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 410 (Continued)

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (3) On audio control panel, move HF-1 (HF-2) volume control up (on), and press HF-1 (HF-2) microphone selector switch.
- (4) At HF control panel, rotate RF SENS to mid-position. Rotate mode selector to USB, LSB and AM in turn, selecting several active frequencies in each mode. Received audio should be clear and undistorted.

NOTE: Readjust RF SENS control and volume control as required for best reception.

**CAUTION:** TRANSCEIVER BLOWER SHOULD START WHEN TRANSMITTER IS KEYED. IF BLOWER DOES NOT START, CEASE TRANSMITTING IMMEDIATELY, TO AVOID OVERHEATING OF TRANSCEIVER.

- (5) Press push-to-talk switch and communicate with another station, using USB and AM modes. A tuning tone should be heard in headset during tune cycles, and sidetone should be heard while speaking into microphone.
- (6) If control panel was replaced because of faulty operation of the HF system on certain frequencies, operation on those frequencies should be verified.
- (7) The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm 10\%$  across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.
- (8) Return airplane to required configuration.

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## HF ANTENNA COUPLER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and adjustment/test procedures for the HF antenna coupler(s). The HF antenna coupler(s) are located in the aft accessory compartment at the tail cone attaching frame. Access to the HF antenna coupler(s) is through the access door in the lower surface of the tail cone, or through the emergency exit in the aft pressure bulkhead.

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used in place of the following item; which is used to perform test of antenna coupler.

**Table 201**

Name and Number	Manufacturer
RF wattmeter with 250-watt, 2.0 to 30.0 MHz element, ThruLine 43	Bird Electronics Corp.
Torque wrench (0-100 inch pounds) (0-11.3 N·m)	

### 3. Removal/Installation HF Antenna Coupler

- A. Remove HF Antenna Coupler

**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>
------------	------------	---------------	-------------

**WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892**

D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

#### **UPPER EPC, LEFT RADIO DC BUS**

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

E	15	B10-198	HF COMM-1
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#### **UPPER EPC, RIGHT RADIO AC BUS**

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

**WJE 410, 881, 883, 892**

D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

**EFFECTIVITY**

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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WJE 410, 881, 883, 892 (Continued)

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 410, 881, 883

E	3	B10-204	HF COMM-2
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WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (2) At antenna coupler disconnect coaxial cable, electrical power, and air connectors from unit.
- (3) Remove outboard screws from support which attaches HF antenna coupler to structure.
- (4) While holding HF antenna coupler, loosen clamp which attaches HF antenna coupler to lightning arrestor and relay unit.
- (5) Move HF antenna coupler away from forward face of lightning arrestor and relay unit, and remove HF antenna coupler.

B. Install HF Antenna Coupler

**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>
------------	------------	---------------	-------------

WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892

D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

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

E	15	B10-198	HF COMM-1
---	----	---------	-----------

### UPPER EPC, RIGHT RADIO AC BUS

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

WJE 410, 881, 883, 892

D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

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

WJE 410, 881, 883

E	3	B10-204	HF COMM-2
---	---	---------	-----------

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (2) Make certain that mating contacts of HF antenna coupler and lightning arrestor and relay unit are clean.
- (3) Place loosened clamp around mounting flange of HF antenna coupler.

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892
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- (4) Align mounting flange and female connector on HF antenna coupler with mounting flange and male connector on lightning arrestor and relay unit. Rotate HF antenna coupler until air fitting is at bottom of unit.
- (5) Push HF antenna coupler into position.
- (6) Hold HF antenna coupler in place and tighten clamp around mounting flanges to torque of 65 to 75 inch-pounds (7.34-8.47 N·m).
- (7) Install outboard screws in support which attached HF antenna coupler to structure.
- (8) Connect transmitter coax, power, and air connectors to coupler.
- (9) 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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

#### 4. Adjustment/Test HF Antenna Coupler

- A. Test Antenna Coupler
  - (1) Verify HF mode selector is 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.

- (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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B

EFFECTIVITY <b>WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892</b>
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(Continued)

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (3) Install RF wattmeter in line between transceiver antenna terminal and antenna coupler. Rotate wattmeter element to point element face arrow in direction of cable leading to antenna coupler.
- (4) Close these circuit breakers:

### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 411, 412, 414, 875-879, 881, 883, 892</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

**CAUTION:** DO NOT OPERATE RADIO EQUIPMENT WHEN RADIO RACK COOLING FAN WARNING LIGHT IS ON. OPERATION OF RADIO EQUIPMENT WHEN RADIO RACK BLOWER IS INOPERATIVE SHORTENS LIFE OF EQUIPMENT.

- (5) Set radio rack fan switch to FAN.

WJE 401-404, 407, 408, 411, 412, 414, 875-879

- (6) On audio control panel, place HF-1 volume lever up, and press HF-1 microphone selector switch.

WJE 410, 875-879, 881, 883, 892

- (7) On audio control panel, place HF volume lever up and press HF microphone selector switch.

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

**CAUTION:** TRANSCIVER BLOWER SHOULD START WHEN TRANSMITTER IS KEYED. IF BLOWER DOES NOT START, CEASE TRANSMITTING IMMEDIATELY, TO AVOID OVERHEATING OF TRANSCIVER.

- (8) Rotate mode selector to AM position.
- (9) Press applicable push-to-talk button (do not talk), and observe output power reading on RF wattmeter. Forward power as read on wattmeter must be at least 50 watts.
- (10) Open push-to-talk button. CEASE ALL TRANSMISSIONS, and rotate the wattmeter element to point the element face arrow in the direction of the cable leading to the transceiver.
- (11) Again press push-to-talk button. The reflected power (with the wattmeter element rotated) should not exceed 5 watts.

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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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.

- (12) Open these circuit breakers:

### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 411, 412, 414, 875-879, 881, 883, 892</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (13) Remove RF wattmeter from line and reconnect transmitter coaxial cable.  
 (14) Remove the safety tags and close these circuit breakers:

### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 411, 412, 414, 875-879, 881, 883, 892</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

#### **WJE 401-404, 407, 408, 411, 412, 414**

- (15) On audio control panel, place HF-1 toggle volume lever up and press HF-1 microphone selector switch.

#### **WJE 410, 881, 883, 892**

- (16) On audio control panel, place HF toggle volume lever up and press HF microphone selector switch.

#### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (17) At HF control panel, rotate RF SENS to mid-position. Rotate mode selector to USB, LSB and AM in turn, selecting several active frequencies in each mode. Received audio should be clear and undistorted.

NOTE: Adjust RF SENS control and volume control as required for best reception.

#### EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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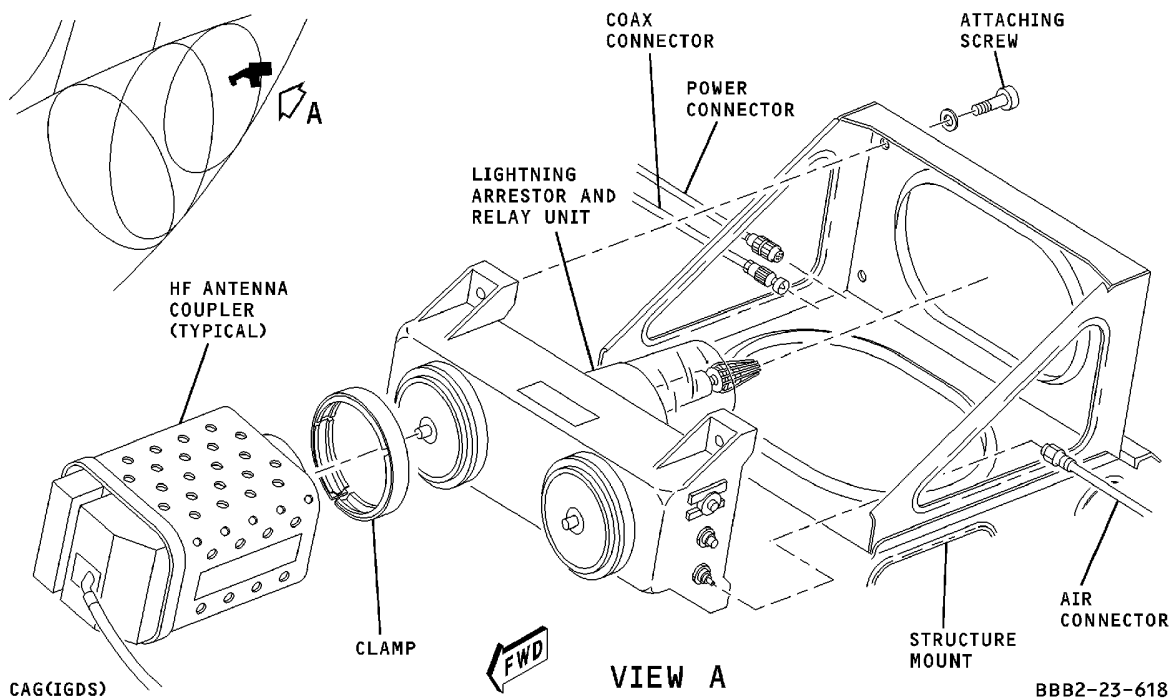
## MD-80 AIRCRAFT MAINTENANCE MANUAL

**CAUTION:** TRANSCEIVER BLOWER SHOULD START WHEN TRANSMITTER IS KEYED. IF BLOWER DOES NOT START, CEASE TRANSMITTING IMMEDIATELY, TO AVOID OVERHEATING OF TRANSCEIVER.

- (18) Press push-to-talk switch and communicate with another station, using USB, LSB and AM modes. A tuning tone should be heard in headset during tune cycles, and sidetone should be heard while speaking into microphone.

**NOTE:** If frequency change is made of less than 1 kHz, tuning tone will not be present during tune cycle.

- (19) The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm 10\%$  across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.
- (20) Return aircraft to required configuration.



**HF Antenna Coupler - Removal/Installation  
Figure 201/23-10-04-990-804**

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

TP-80MM-WJE

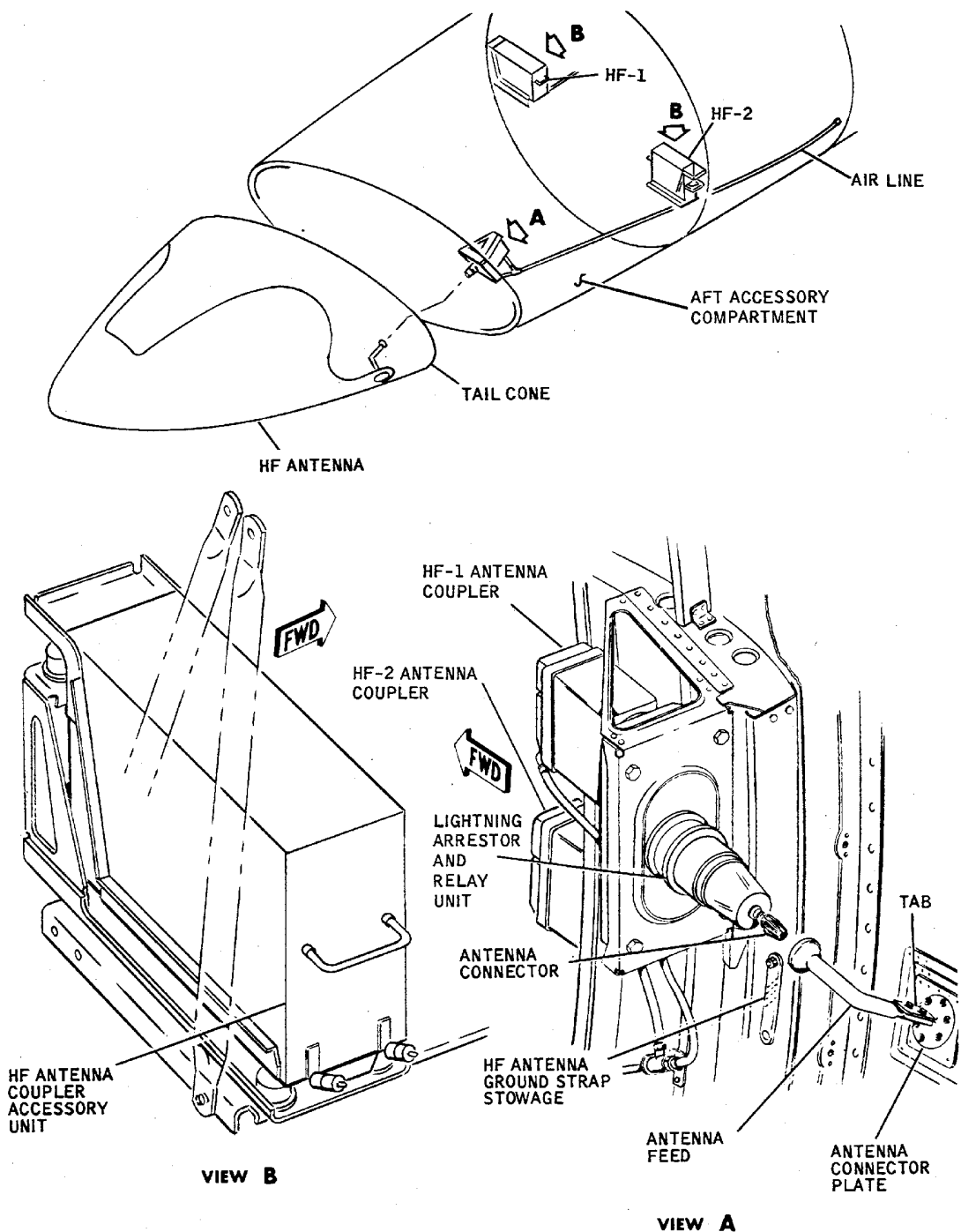
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AIRCRAFT MAINTENANCE MANUAL**



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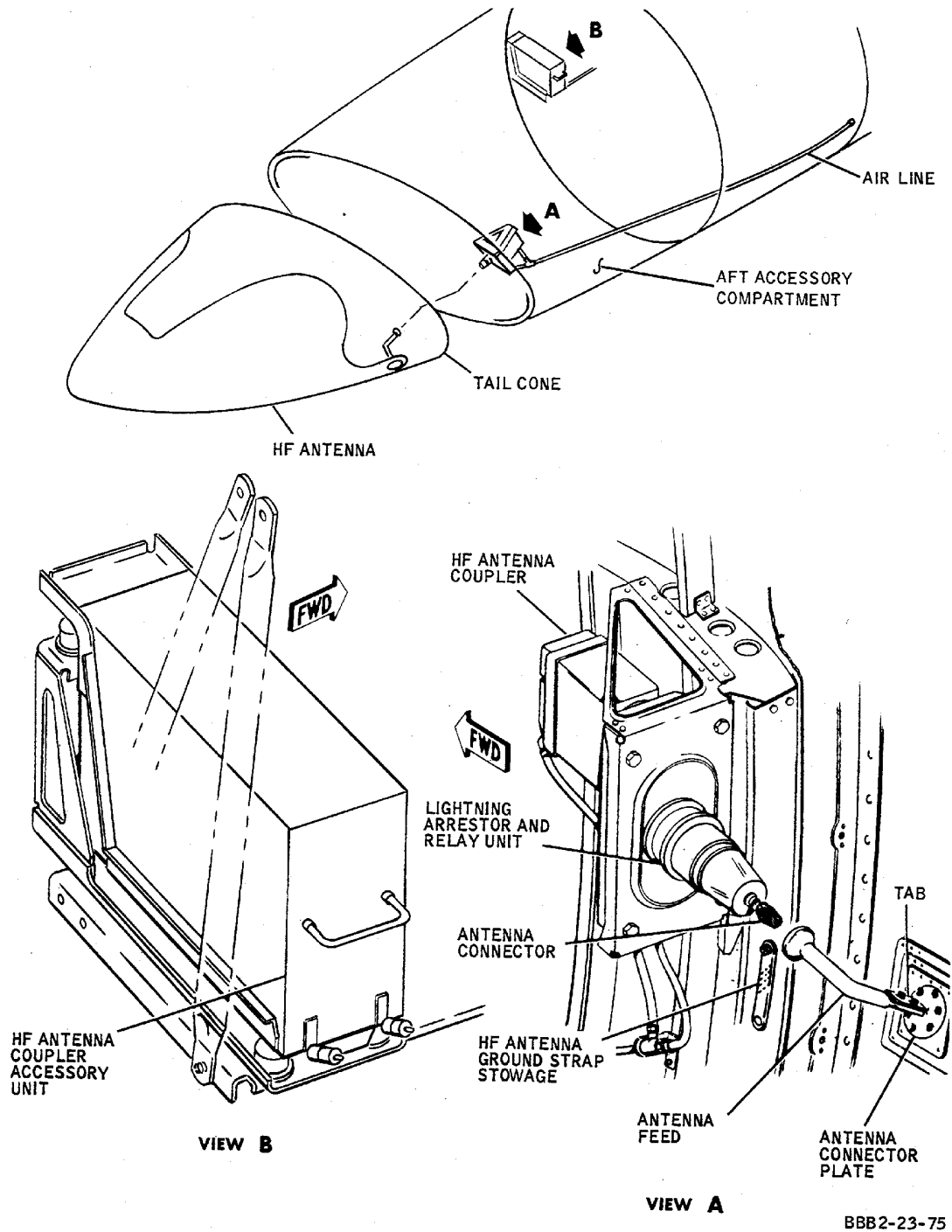
**High Frequency -- Antenna Tuning System Components  
Figure 202/23-10-04-990-802 (Sheet 1 of 2)**

EFFECTIVITY  
WJE 410, 875-879, 881, 883, 892

**23-10-04**

TP-80MM-WJE

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**High Frequency -- Antenna Tuning System Components  
Figure 202/23-10-04-990-802 (Sheet 2 of 2)**

EFFECTIVITY  
WJE 401-404, 407, 408, 411, 412, 414

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TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### HF ANTENNA COUPLER ACCESSORY UNIT - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation and adjustment/test procedures for the HF antenna coupler accessory unit. The HF antenna coupler accessory unit is located in the aft accessory compartment. Access to the unit is through the access door in the lower surface of the tail cone, or through the emergency exit in the aft pressure bulkhead.

#### 2. Removal/Installation HF Antenna Coupler Accessory Unit

- A. Remove HF Antenna Coupler Accessory 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:

##### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

##### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

##### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

##### **UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Disconnect electrical and coaxial connectors from unit.  
 (3) Loosen and disengage knurled nuts from mounting brackets on lower front panel of unit.

**WJE 410, 875-879, 881, 883, 892**

- (4) Pull unit inboard and out of mount.

**WJE 401-404, 407, 408, 411, 412, 414**

- (5) Pull unit out of mount.

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- B. Install HF Antenna Coupler Accessory Unit

#### EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Make certain that mating contacts of HF antenna coupler accessory unit and electrical and coaxial connectors are clean.
- (3) Engage and tighten knurled nuts on mounting brackets on lower front panel of unit.
- (4) Connect electrical and coaxial connectors to unit.

**NOTE:** Make certain coaxial cable from transceiver is connected to J3.

- (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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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TP-80MM-WJE



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AIRCRAFT MAINTENANCE MANUAL**

WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892 (Continued)

**UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883, 892			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

EFFECTIVITY

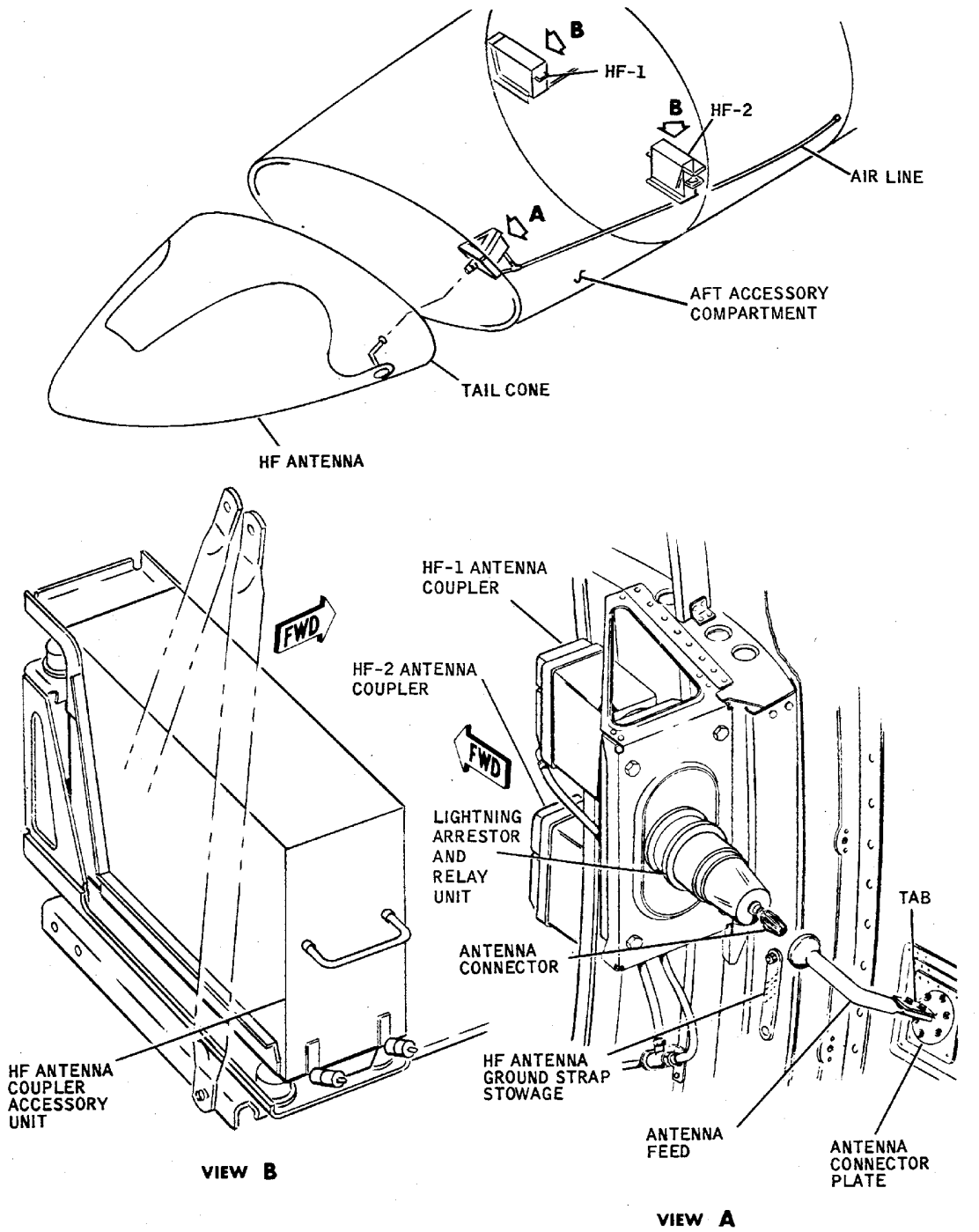
WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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**HF Antenna Coupler Accessory Unit -- Removal/Installation**  
Figure 201/23-10-05-990-801 (Sheet 1 of 2)

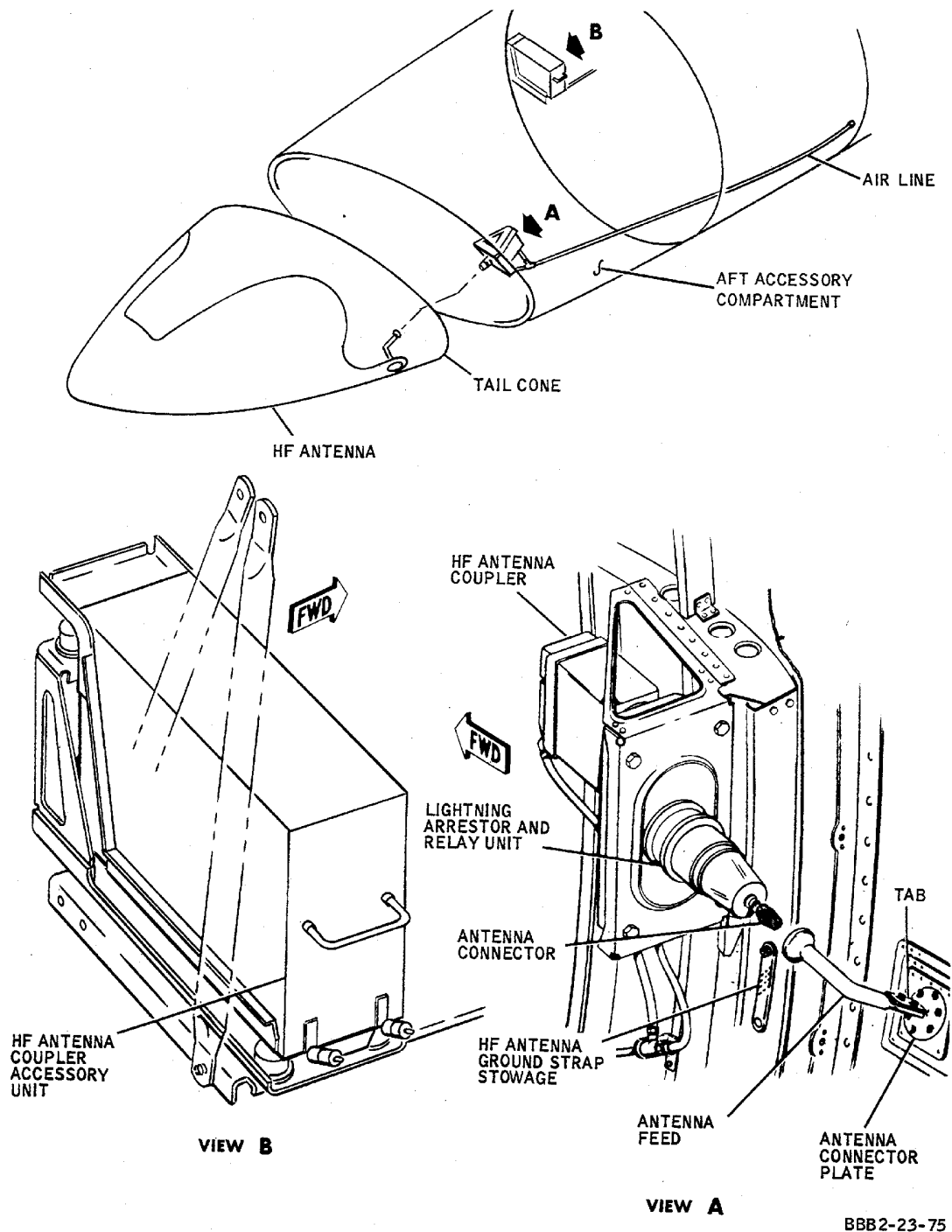
EFFECTIVITY  
WJE 410, 875-879, 881, 883, 892

**23-10-05**

TP-80MM-WJE

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AIRCRAFT MAINTENANCE MANUAL**



**HF Antenna Coupler Accessory Unit -- Removal/Installation**  
Figure 201/23-10-05-990-801 (Sheet 2 of 2)

EFFECTIVITY  
WJE 401-404, 407, 408, 411, 412, 414

**23-10-05**

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test HF Antenna Coupler Accessory Unit

**CAUTION:** DO NOT OPERATE RADIO EQUIPMENT WHEN "RADIO FAN OFF" WARNING ANNUNCIATOR LIGHT IS ON. OPERATION OF RADIO EQUIPMENT, WHEN RADIO RACK BLOWER IS INOPERATIVE, SHORTENS LIFE OF EQUIPMENT.

#### A. Test Antenna Coupler Accessory Unit

**NOTE:** The HF antenna coupler system is designed to channel not more than once for each minute of operation. If it is necessary to channel more often, check for over-heating of units.

- (1) Set radio rack fan switch to FAN.

#### **WJE 401-404, 407, 408, 411, 412, 414**

- (2) On HF control panel, place mode selector to AM and rotate RF SENS control clockwise.

#### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (3) On audio control panel, place HF-1 volume lever up and press HF-1 microphone selector switch.

**CAUTION:** TRANSCEIVER BLOWER SHOULD START WHEN TRANSMITTER IS KEYED. IF BLOWER SPEED DOES NOT START, CEASE TRANSMITTING IMMEDIATELY TO AVOID OVERHEATING TRANSCEIVER.

- (4) Press push-to-talk switch and communicate with another station, using USB, LSB, and AM modes. A tuning tone should be heard in headset during tune cycles, and sidetone should be heard while speaking into microphone.
- (5) The following adjustment to the HF Transceiver is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm 10\%$  across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate HF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.
- (6) Return aircraft to required configuration.

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## HF LIGHTNING ARRESTOR AND RELAY UNIT - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and adjustment/test procedures for the lightning arrestor and relay unit. The lightning arrestor and relay unit is located in the aft accessory compartment. Access to the unit is through the access door in the lower surface of the tail cone, or through the emergency exit in the aft pressure bulkhead.

### 2. Removal/Installation Lightning Arrestor and Relay Unit

- A. Remove Lightning Arrestor and Relay 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:

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

#### **UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Remove HF antenna coupler (PAGEBLOCK 23-10-04/201).  
 (3) Remove nuts, bolts, and washers which attach antenna feedthrough to antenna connector tab.

**WARNING:** FAILURE TO REMOVE ANTENNA FEEDTHROUGH PRIOR TO THE REMOVAL OF THE LIGHTNING ARRESTOR AND RELAY UNIT MAY RESULT IN FEEDTHROUGH DAMAGE.

- (4) Carefully pull antenna feed aft to disengage from antenna connector on lightning arrestor and relay unit, and remove feedthrough.  
 (5) At HF antenna shorting strap stowage, remove nut which attaches shorting strap to ground stud.

EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

**23-10-06**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (6) Attach free end of HF antenna feed and tube assembly to antenna connector tab with nuts, bolts, and washer removed in Paragraph 2.A.(3).
- (7) Disconnect receiver coax, power, and air connectors from lightning arrestor and relay unit.
- (8) Remove bolts, nuts, and washers which attach lightning arrestor and relay unit to structure and remove unit.

### B. Install Lightning Arrestor and Relay 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) 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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

#### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

#### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

### WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (2) Rotate lightning arrestor and relay unit so that end with air connector faces floor of airplane. Align unit with structure mounting holes.
- (3) Attach lightning arrestor and relay unit to structure screws, nuts, and washers.

**WARNING:** TO PREVENT THREAD BURN OUT DAMAGE TO LIGHTNING ARRESTOR CONNECTOR, CONNECTOR SHOULD BE IN A TIGHT CONDITION.

- (4) Check lightning arrestor connector to ensure that connector is tight and secured by internal toothed lockwasher.
- (5) Remove HF antenna shorting strap from antenna connector tab and install on ground stud.
- (6) Carefully slide antenna feed over antenna connector located on lightning arrestor and relay unit. Ensure a 1/4-inch space between feedthrough and lightning arrestor face.
- (7) Attach flat end of antenna feed to antenna connector tab with nuts, bolts, and washers.

#### EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

## 23-10-06

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (8) Connect receiver coax, power, and air connectors to lightning arrestor and relay unit.
- (9) Install antenna coupler. (PAGEBLOCK 23-10-04/201)
- (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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (11) Verify HF system operation. (PAGEBLOCK 23-10-00/201)

**NOTE:** The HF Transceiver and antenna coupler systems are designed to channel not more than once for each minute of operation. If it is necessary to channel more often, check for overheating of units.

EFFECTIVITY

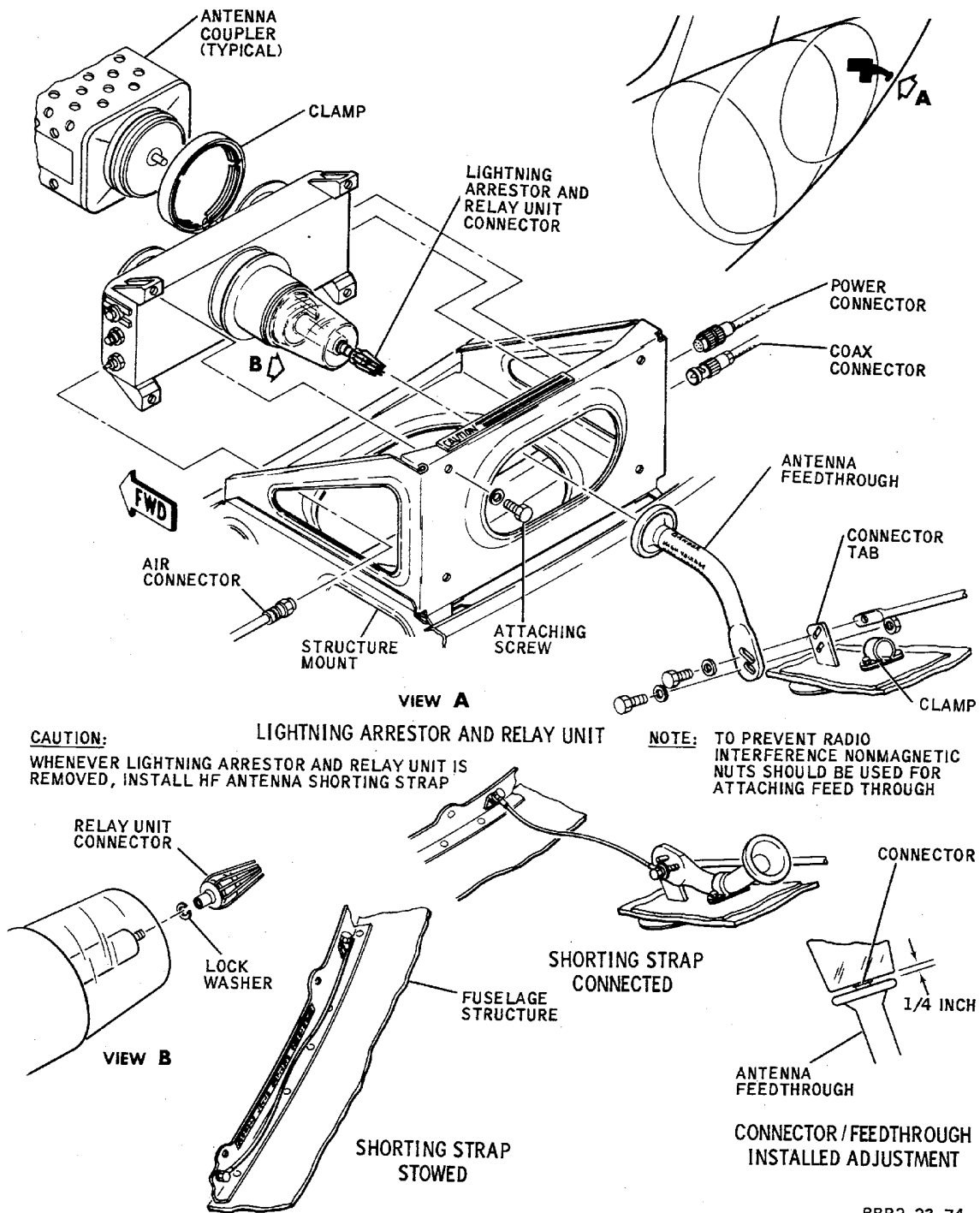
WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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Lightning Arrestor and Relay Unit - Removal/Installation  
Figure 201/23-10-06-990-801

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## HF ANTENNA LOADING RESISTOR - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and adjustment/test procedures for the HF antenna loading resistor. The HF antenna loading resistor is located in the aft accessory compartment at station 1461. Access to the resistor is through the access door in the lower surface of the tail cone, or through the emergency exit in the aft pressure bulkhead. (Figure 201)

### 2. Removal/Installation HF Antenna Loading Resistor

- A. Remove HF Antenna Loading Resistor

**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 applicable system circuit breakers:

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

#### **UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Release camlock fasteners and remove resistor cover.  
 (3) Tag and disconnect wires from resistor.  
 (4) Remove nut and washers securing resistor to bolt and remove resistor.

- B. Install HF Antenna Loading Resistor

#### EFFECTIVITY

**WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

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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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883, 892</b>			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 881, 883</b>			
E	3	B10-204	HF COMM-2

### **WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892**

- (2) Insert bolt through bottom side of mount and resistor and secure resistor to bolt with washers and nut.
- (3) Connect wires to resistor.
- (4) Replace cover and secure camlock fasteners.
- (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>
<b>WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892</b>			
D	15	B10-195	HF COMM-1 PHASE A
D	16	B10-196	HF COMM-1 PHASE B
D	17	B10-197	HF COMM-1 PHASE C

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	15	B10-198	HF COMM-1

EFFECTIVITY

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-404, 407, 408, 410-412, 414, 881, 883, 892 (Continued)

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883, 892			
D	3	B10-201	HF COMM-2 PHASE A
D	4	B10-202	HF COMM-2 PHASE B
D	5	B10-203	HF COMM-2 PHASE C

### UPPER EPC, RIGHT RADIO DC BUS

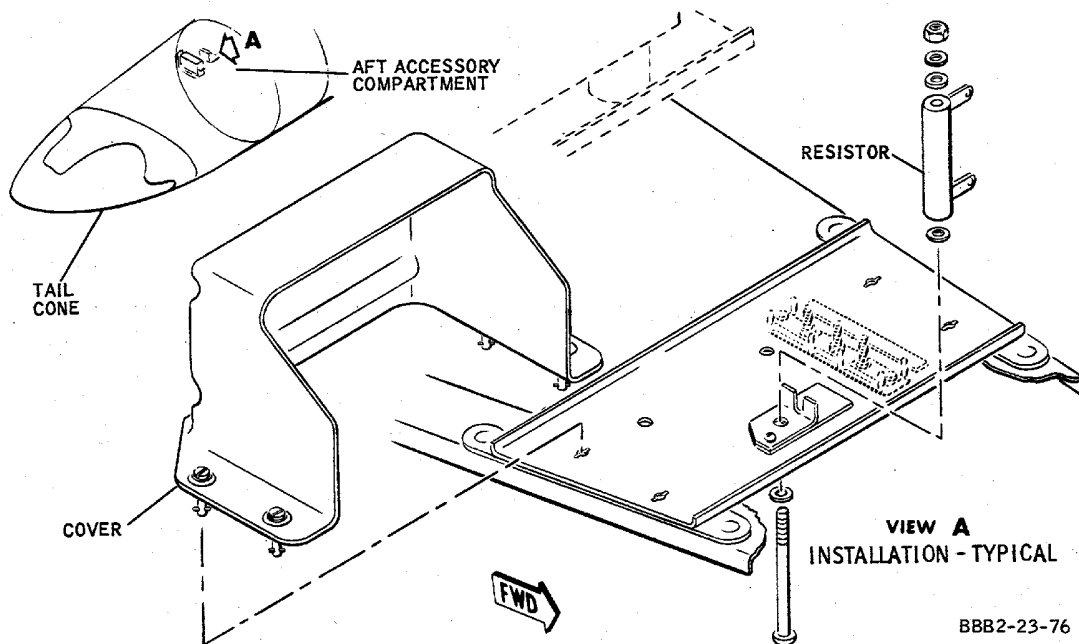
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 881, 883			
E	3	B10-204	HF COMM-2

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

- (6) Perform system test to verify operation. (PAGEBLOCK 23-10-00/201)

NOTE: The HF Transceiver and Antenna Coupler Systems are designed to channel not more than once for each minute of operation. If it is necessary to channel more often, check for overheating of units.

WJE 401-404, 407, 408, 411, 412, 414



**High Frequency -- Loading Resistor  
Figure 201/23-10-07-990-801 (Sheet 1 of 2)**

**EFFECTIVITY**

WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892

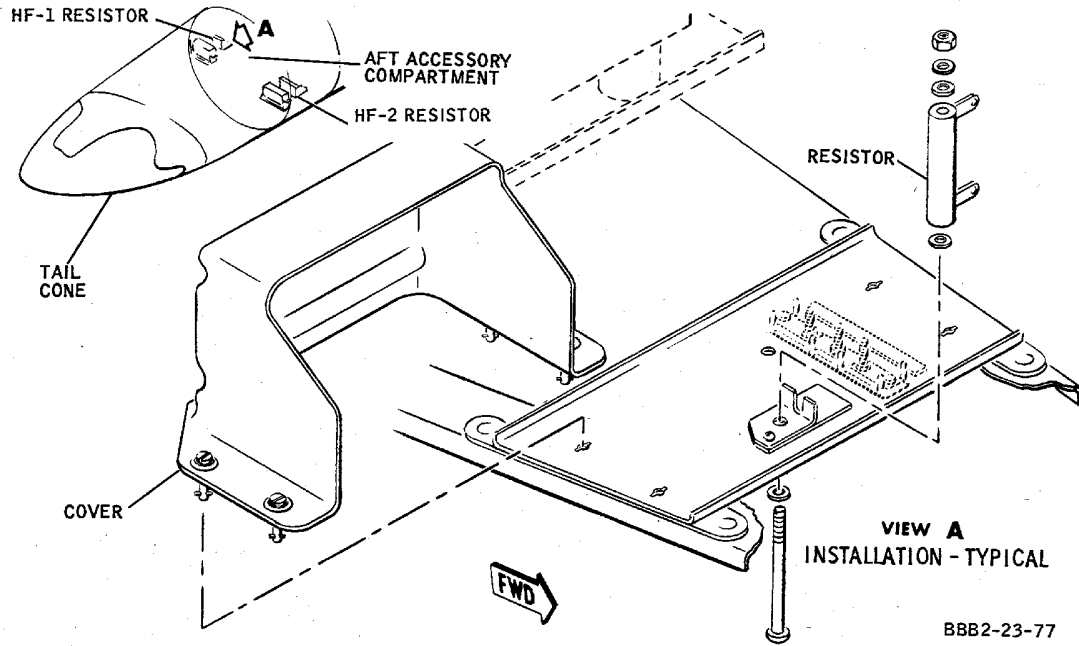
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WJE 410, 875-879, 881, 883, 892



High Frequency -- Loading Resistor  
Figure 201/23-10-07-990-801 (Sheet 2 of 2)

EFFECTIVITY  
WJE 401-404, 407, 408, 410-412, 414, 875-879, 881,  
883, 892

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### VHF - DESCRIPTION AND OPERATION

#### 1. General

**WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 877, 880, 884, 886, 887, 891-893**

- A. The VHF system provides communication between the aircraft, other aircraft and ground stations, and is used for transmitting and receiving amplitude modulated radio signals. The system is a dual installation designated VHF-1 and VHF-2, each system operating independently of the other. Each system consists of a transceiver, control panel, and an antenna. The VHF is operated in conjunction with the audio integrating system and the SELCAL system.

**WJE 401-404, 412, 414**

- B. The VHF system provides communication between the aircraft, other aircraft and ground stations, and is used for transmitting and receiving amplitude modulated radio signals. The system is a dual installation designated VHF-1 and VHF-2, each system operating independently of the other. Each system consists of a transceiver, control panel, and an antenna. The VHF is operated in conjunction with the audio integrating system and the selective calling system (SELCAL). Provisions for VHF-3 are provided.

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875, 876, 878, 879, 881, 883**

- C. The VHF system provides communication between the aircraft, other aircraft and ground stations, and is used for transmitting and receiving amplitude modulated radio signals. The system is a triple installation designated VHF-1, VHF-2, and VHF-3, each system operating independently of the other. Each system consists of a transceiver, control panel, and an antenna. The VHF is operated in conjunction with the audio integrating system and the SELCAL system.

**WJE ALL**

#### 2. VHF System Components

- A. Description

**WJE 405, 407-409, 411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893**

- (1) VHF Communication Transceiver - the VHF communication transceiver is designed for two-way voice communication in the frequency range of 118.000 MHz to 135.975 MHz with 25KHz channel spacing. The transceiver is housed in a standard 1/2 ATR short case and is composed of five major assemblies: power supply, frequency synthesizer, receiver, modulator, and transmitter. The front panel contains a transmitter power indicator light that comes on when the transmitter output is greater than approximately 10 watts. The panel also contains a PHONE jack, a MIC jack, and a SQ/DISABLE switch.

NOTE: For aircraft incorporating the extended range VHF system, the frequency range is 118.000 MHz to 136.975 MHz.

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### WJE 401-404, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879

- (2) VHF Communication Transceiver - the VHF communication transceiver is designed for two-way voice communication in the frequency range of 118.000 MHz to 136.975 MHz with 25KHz channel spacing. The transceiver is housed in a standard 1/2 ATR short case. The front panel contains three switches: SQL/LAMP TEST, RFL/OFF/FWD, and TEST, for testing purposes. The SQL/LAMP TEST switch disables the squelch and at the same time causes both LED indicators to light for the lamp test function. RFL/OFF/FWD switch is spring-loaded, return to center (OFF) position when rotary switch is released. In the FWD position, the forward power level, in watts, is displayed on the indicator. In the RFL position, the reflected power level is displayed. TEST switch initiates the transceiver self-test, input serial word test, and the antenna vswr test. The CONTROL INPUT FAIL indicator illuminates (red) for approximately one second during self-test if tuning data is not valid. The LRU PASS indicator illuminates (green) for approximately one second to indicate proper operation of the transceiver during self test. The front panel also contains PHONE and MIC jacks.

### WJE 405, 407-409, 411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893

- (3) The VHF Frequency Control Panels - the VHF frequency control panels are located on the pedestal. The left panel controls the VHF-1 system, the right panel controls the VHF-2 system. The control panels are identical and interchangeable. Each panel contains dual frequency selectors, and windows that display the selected frequencies. The operating frequency selector is chosen by a transfer switch, located near the center of the panel; a bar obscures the read-out of the frequency that is not in use.

### WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875, 876, 878, 879

- (4) The VHF Frequency Control Panels - the VHF frequency control panels are located on the aft pedestal. The left panel controls the VHF-1 system. The forward right panel controls the VHF-2 system, and the aft right panel controls the VHF-3 system. The control panels are identical and interchangeable. Each panel contains dual frequency selectors, and windows that display the selected frequencies. The operating frequency selector is chosen by a transfer switch, located near the center of the panel; indicator lights are illuminated to show the frequency that is in use.

### WJE 881, 883

- (5) The VHF Frequency Control Panels - the VHF frequency control panels are located on the pedestal. The left panel controls the VHF-1 system, the right panel controls the VHF-2 system and VHF-3. The control panels are identical and inter-changeable. Each panel contains dual frequency selectors, and windows that display the selected frequencies. The operating frequency selector is chosen by a transfer switch, located near the center of the panel; a bar obscures the readout of the frequency that is not in use. A SQ/DISABLE switch is provided on the panels.

### WJE 401-404, 412, 414

- (6) VHF Frequency Control Panels - the VHF frequency control panels are located on the aft pedestal. The left panel controls the VHF-1 system, the right panel controls the VHF-2 system. The control panels are identical and inter-changeable. Each panel contains dual frequency selectors, and windows that display the selected frequencies. The operating frequency selector is chosen by a transfer switch, located near the center of the panel; indicator lights are illuminated to show the frequency that is in use. In addition, a COMM TEST switch is provided on the panels. The COMM TEST switch disables the transceiver squelch.

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**WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 874, 880, 884, 886, 887, 891-893**

- (7) The VHF Blade Antennas - the VHF blade antennas are of the low-drag type. The VHF-2 antenna is located on the top forward fuselage and the VHF-1 antenna is located on the bottom forward fuselage.

**WJE 401-404, 412, 414**

- (8) The VHF Blade Antennas - the VHF blade antennas are of the low-drag type. The VHF-2 antenna is located on the top forward fuselage and the VHF-1 antenna is located on the bottom forward fuselage. Provisions are provided for a VHF-3 antenna located on the bottom aft fuselage.

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

- (9) The VHF Blade Antennas - the VHF blade antennas are of the low-drag type. The VHF-1 antenna is located on the top forward fuselage and the VHF-2 antenna is located on the bottom forward fuselage. The VHF-3 antenna is located on the bottom aft fuselage.

**WJE 401-405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893**

- (10) Audio Control Panels - The VHF system is integrated into the flight crew's communication system through the audio control panels. Each panel provides controls to connect crew microphones to VHF-1 or VHF-2, and to control the level of audio received from VHF-1 or VHF-2. Audio panels are located on the captain's and first officer's consoles, aft overhead panel and in the electrical/electronics compartment.

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

- (11) Audio Control Panels - The VHF system is integrated into the flight crew's communication system through the audio control panels. Each panel provides controls to connect crew microphones to VHF-1, VHF-2, or VHF-3 and to control the level of audio received from VHF-1, VHF-2, or VHF-3. Audio panels are located on the captain's and first officer's outboard consoles, aft overhead panel and in the electrical/electronics compartment.

**WJE 412, 414**

- (12) Audio Control Panels - The VHF system is integrated into the flight crew's communication system through the audio control panels. Each panel provides controls to connect crew microphones to VHF-1 or VHF-2, and to control the level of audio received from VHF-1 or VHF-2. Audio panels are located on the Captain's and F/O's outboard consoles, aft overhead panel and in the electrical/electronics compartment.

**WJE ALL**

B. Operation

**WJE 401-404, 406, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875, 876, 878, 879**

- (1) The applicable VHF communication system operation is continuous, when power is applied to the electrical buses and the applicable VHF circuit breaker is closed. The frequencies are selected by rotating the frequency controls, on the applicable VHF frequency control panel, until the desired frequencies appear in the windows. The operating frequency is selected by placing the transfer switch to right or left position. The readout of the frequency in use is indicated by two illuminated lights.

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**WJE 405, 407-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 877, 880, 881, 883, 884, 886, 887, 891-893**

- (2) The applicable VHF communication system operation is continuous, when power is applied to the electrical buses and the applicable VHF circuit breaker is closed. The frequencies are selected by rotating the frequency controls, on the applicable VHF frequency control panel, until the desired frequencies appear in the windows. The operating frequency is selected by placing the transfer switch to right or left position. The read-out of the frequency not in use is obscured by a bar.

**WJE ALL**

- (3) Any change of the operating frequency causes the synthesizer to automatically adjust the receiver and transmitter to the operating frequency. Channel change time is 40 ms maximum.

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

- (4) Receiver operation is accomplished at any of the audio control panels. Audio panels are located at the captain's and first officer's stations, aft overhead panel and in the electrical/electronics compartment. For receiver operation, place all audio panel volume controls in the off position except the volume control for the VHF system being operated. The RF signals at the antenna are applied through the transceiver transmit/receive switch to the rf tuner. Signals at the operating frequency are converted, amplified, detected and applied to the selcal/ATCSS data output, and to the audio amplifiers. Output audio is applied to an audio load resistor and then to all audio control panels. There the audio is passed through an isolation resistor, volume control, and an isolation amplifier. Isolation amplifier output is applied to the headset and to the applicable flight compartment speaker/amplifier.

**WJE 401-404, 412, 414**

- (5) Receiver operation is accomplished at any of the audio control panels. Audio panels are located at the captain's and first officer's stations, aft overhead panel and in the electrical/electronics compartment. For receiver operation, place all audio panel volume controls in the OFF position except the volume control for the VHF system being operated. The RF signals at the antenna are applied through the transceiver transmit/receive switch to the rf tuner. Signals at the operating frequency are converted, amplified, detected and sent to the SELCAL data output and applied to the audio amplifiers. Output audio is applied to an audio load resistor and then to all audio control panels. There the audio is passed through an isolation resistor, volume control and an isolation amplifier. Isolation amplifier output is applied to the headset and to the applicable flight compartment speaker/amplifier.

**WJE 407, 408, 411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871, 872, 874, 880, 891-893**

- (6) Receiver operation is accomplished at any of the audio control panels. Audio panels are located at the captain's and first officer's stations, aft overhead panel and in the electrical/electronics compartment. For receiver operation, place all audio panel volume control levers in the down position except the volume control lever for the VHF system being operated. The RF signals at the antenna are applied through the transceiver transmit/receive switch to the rf tuner. Signals at the operating frequency are converted, amplified, detected and applied to the selcal/ATCSS data output, and to the audio amplifiers. Output audio is applied to an audio load resistor and then to all audio control panels. There the audio is passed through an isolation resistor, volume control, and an isolation amplifier. Isolation amplifier output is applied to the headset and to the applicable flight compartment speaker/amplifier.

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### WJE 406, 417, 419, 421, 423, 865, 875-879

- (7) Receiver operation is accomplished at any of the audio control panels. Audio panels are located at the captain's and first officer's stations, aft overhead panel and in the electrical/electronics compartment. For receiver operation, place all audio panel volume controls in the off (ccw) position except the volume control for the VHF system being operated. The RF signals at the antenna are applied through the transceiver transmit/receive switch to the rf tuner. Signals at the operating frequency are converted, amplified, detected and applied to the selcal/ATCSS data output, and to the audio amplifiers. Output audio is applied to an audio load resistor and then to all audio control panels. There the audio is passed through an isolation resistor, volume control, and an isolation amplifier. Isolation amplifier output is applied to the headset and to the applicable flight compartment speaker/amplifier.

### WJE 886, 887

- (8) Receiver operation is accomplished at any of the audio control panels. Audio panels are located at the captain's and first officer's stations, aft overhead panel and in the electrical/electronics compartment. For receiver operation, rotate all audio panel volume control in the OFF position except the volume control for the VHF system being operated. The RF signals at the antenna are applied through the transceiver transmit/receive switch to the rf tuner. Signals at the operating frequency are converted, amplified, detected and applied to the selcal/ATCSS data output, and to the audio amplifiers. Output audio is applied to an audio load resistor and then to all audio control panels. There the audio is passed through an isolation resistor, volume control, and an isolation amplifier. Isolation amplifier output is applied to the headset and to the applicable flight compartment speaker/amplifier.

### WJE 412, 414

- (9) Receiver operation is accomplished at any of the audio control panels. Audio panels are located at the Captain's and F/O's stations, aft overhead panel and in the electrical/electronics compartment. For receiver operation, place all audio panel volume controls in the OFF position except the volume control for the VHF system being operated. The RF signals at the antenna are applied through the transceiver transmit/receive switch to the RF tuner. Signals at the operating frequency are converted, amplified, detected and applied to the SELCAL/ATCSS data output, and to the audio amplifiers. Output audio is applied to all audio control panels. At the audio control panels, the audio is passed through an isolation resistor, volume control, and an isolation amplifier. Isolation amplifier output is applied to the headset and to the applicable flight compartment speaker/amplifier.

### WJE 401-404, 406, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 874-879, 886, 887, 891, 893

- (10) For transmitter operation, the applicable audio control panel VHF microphone selector switch is pressed and the applicable push-to-talk switch is pressed to energize the transmitter circuitry. The Flight Data Acquisition Unit (FDAU) is also signaled, to record the time of the transmission. In the transceiver, the microphone audio is amplified, modulated, and applied to a power amplifier. The signal is coupled through a low-pass filter and the transmit/receive switch to the antenna. Sidetone is routed to the receiver audio amplifier circuitry and then to all audio panels. To monitor sidetone, position the applicable VHF volume control for a comfortable audio level.

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C. To Operate System

### System Operation

Step	Procedure	
1	Energize aircraft electrical buses.	
2	Place the controls to position indicated.	
	Control	Position
VHF frequency control panel:		
a	Frequency controls	Approved frequency
b	TFR switch	Desired frequency selector
Audio panel:		
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>		
a	Microphone selector	VHF-1 or VHF-2 pressed
<b>WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>		
a	Microphone selector	VHF-1, VHF-2 or VHF-3 pressed
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 877, 880, 884, 886, 887, 891-893</b>		
b	Volume control	Mid-range, VHF-1 or VHF-2
<b>WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875, 876, 878, 879, 881, 883</b>		
b	Volume control	Mid-position, VHF-1, VHF-2, or VHF-3
<b>WJE ALL</b>		
c	Adjust applicable volume control for a comfortable received audio level.	
3	Use applicable microphone, and press Push-To-Talk (PTT) switch to transmit.	

EFFECTIVITY  
WJE ALL

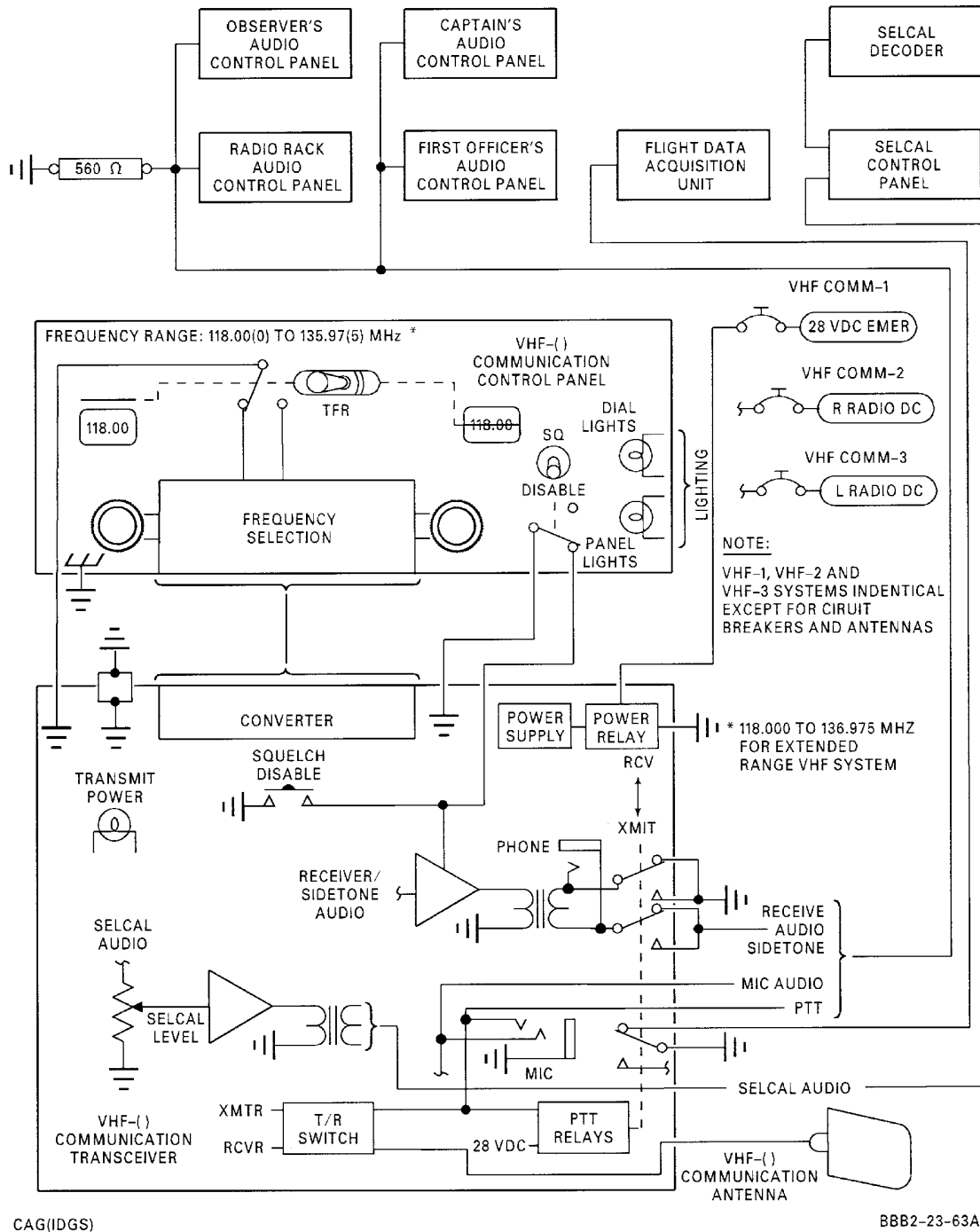
TP-80MM-WJE

**23-20-00**

Config 1  
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## MD-80 AIRCRAFT MAINTENANCE MANUAL



**VHF Communications System, Typical -- Simplified Schematic**  
Figure 1/23-20-00-990-804 (Sheet 1 of 3)

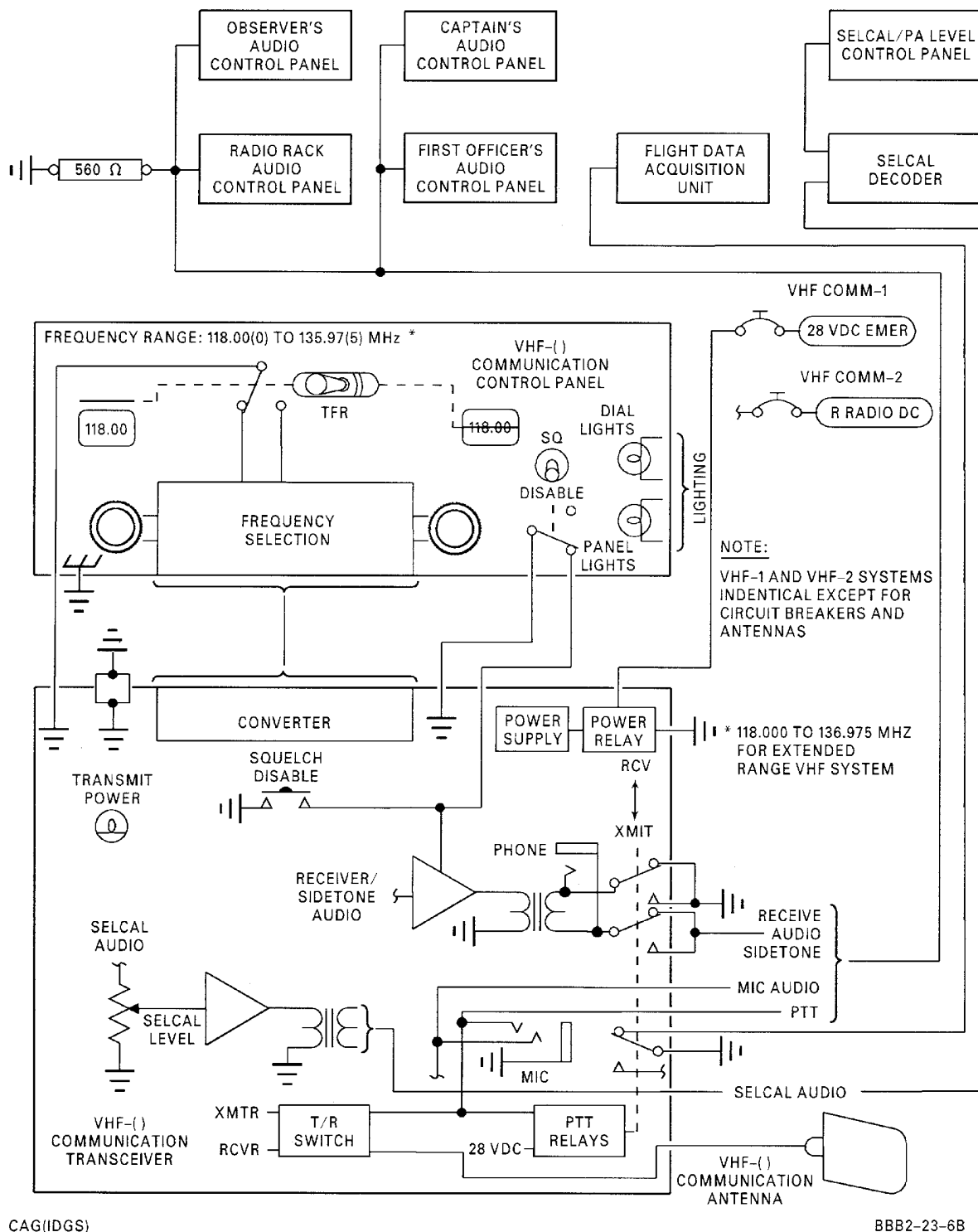
**EFFECTIVITY**  
WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875,  
876, 878, 879, 881, 883

TP-80MM-WJE

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## MD-80 AIRCRAFT MAINTENANCE MANUAL



**VHF Communications System, Typical -- Simplified Schematic**  
**Figure 1/23-20-00-990-804 (Sheet 2 of 3)**

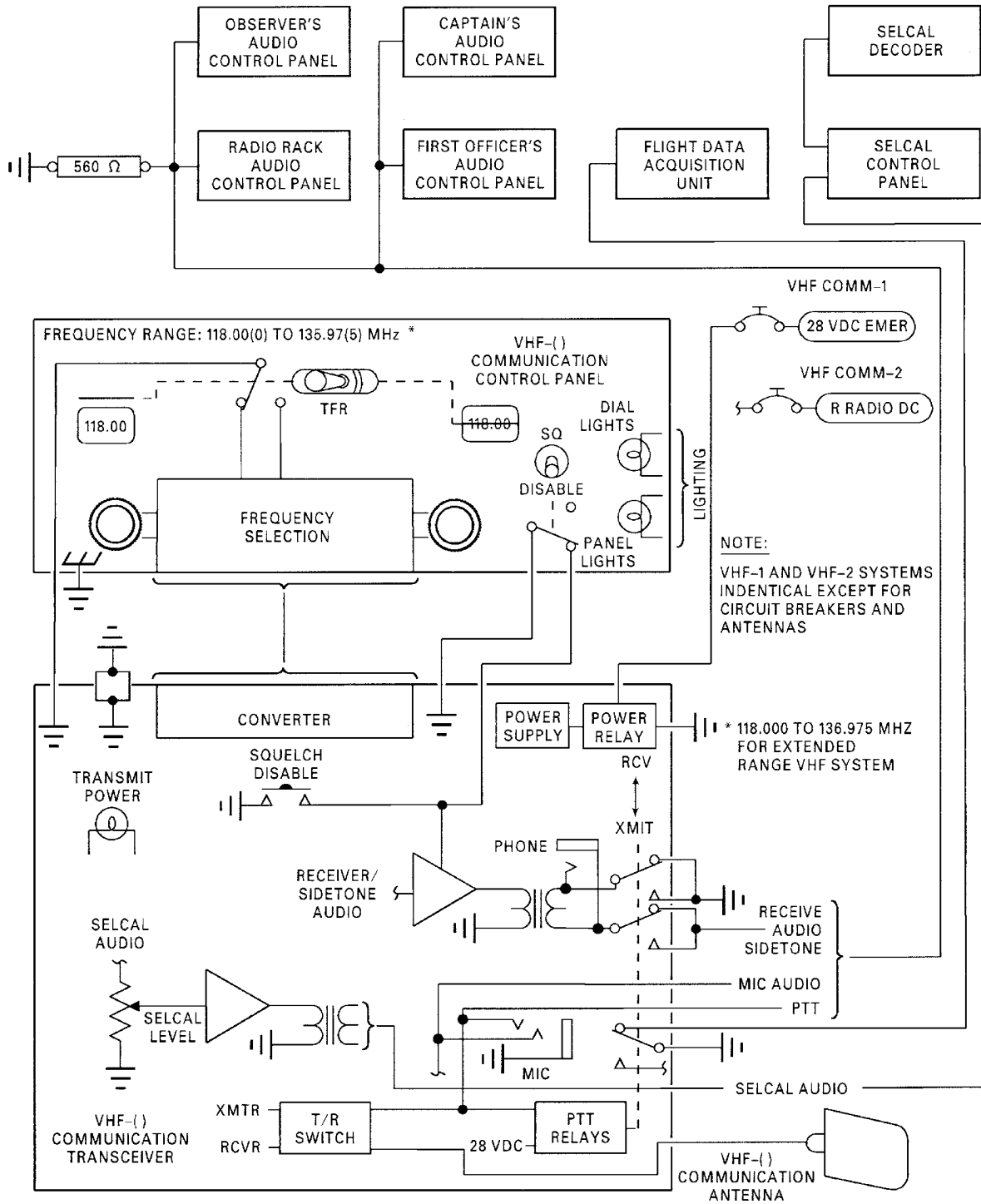
**EFFECTIVITY**  
WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864,  
866, 868, 873, 874, 891-893

TP-80MM-WJE

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CAG(IDGS)

BBB2-23-27A

VHF Communications System, Typical -- Simplified Schematic  
Figure 1/23-20-00-990-804 (Sheet 3 of 3)

EFFECTIVITY  
WJE 405, 407-411, 877, 880, 884, 886, 887

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VHF - TROUBLE SHOOTING

### 1. General

- A. Trouble Shooting procedures provided in this section are basic for isolating and correcting faults in the VHF system in the aircraft.
- B. The basic causes of a faulty system operation are generally faulty aircraft wiring or faulty line replaceable units (LRU's).
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.

**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893**

- D. The major components of each VHF system are the control panel, antenna, and the transceiver. The system interfaces with the flight interphone system audio panels. In Trouble Shooting, some checks may have to be made in interphone system components and wiring.

**WJE 406, 417, 419, 421, 423, 865, 875-879**

- E. The major components of each VHF system are the control panel, antenna, and the transceiver. The system interfaces with the flight interphone system audio panels and the SELCAL system. In Trouble Shooting, some checks may have to be made in components and wiring of those systems.

**WJE ALL**

- F. The VHF system components are located as follows:

**Table 101 VHF System Components Location**

Component	Location
Control Panels	Flight Compartment Pedestal
Transceiver	Radio Rack, Electrical/Electronics Compartment
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>	
Antennas	Forward upper and lower fuselage.
<b>WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>	
Antennas	Forward upper and forward and aft lower fuselage.
<b>WJE ALL</b>	
Audio Control Panels	Captain and First Officer's consoles, Aft Overhead Switch Panel, and Aft Right Radio Rack Equipment Panel.

### G. CIRCUIT BREAKER LOCATIONS

#### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

#### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD EMERGENCY DC BUS

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

**WJE 410**

A	11	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

B	8	B10-7	VHF COMM-1
---	---	-------	------------

**WJE 410**

B	9	B10-7	VHF COMM-1
---	---	-------	------------

### UPPER EPC, LEFT RADIO DC BUS

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

**WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

G	16	B10-176	VHF COMM-3
---	----	---------	------------

### UPPER EPC, RIGHT RADIO DC BUS

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

**WJE ALL**

G	5	B10-44	VHF COMM-2
---	---	--------	------------

## 2. Equipment and Materials

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

**Table 102**

Name and Number	Manufacturer
Multimeter 2000A	Dana

## 3. Trouble Shooting VHF System

### 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. LRUs are VHF communication transceivers, control panel, antenna and audio control panels.

**Table 103 VHF System Trouble Shooting**

Procedure	Correction
(1) Check for proper power sources at main buses, circuit breakers, input and output at LRUs; and perform built-in test.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>	
(2) In a dual system, interchange LRUs to establish isolation of faulty LRUs.	Replace faulty LRUs.
<b>WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>	
(2) In redundant systems, interchange LRUs to isolate faulty LRUs.	Replace faulty LRUs.

EFFECTIVITY WJE ALL
------------------------

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883 (Continued)

**Table 103 VHF System Trouble Shooting (Continued)**

	Procedure	Correction
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>		
(3)	Replace suspected faulty LRUs or components with known operational units.	Replace faulty LRUs or components.
<b>WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>		
(3)	Replace suspected faulty LRUs or components.	Replace faulty LRUs or components with known operational units.
<b>WJE ALL</b>		
(4)	Check for proper grounds at LRUs. 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 LRUs.
(5)	Perform continuity check of aircraft wiring. A hot continuity check may be required to check operation of relays or other electrically-actuated components to complete continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.

EFFECTIVITY  
WJE ALL

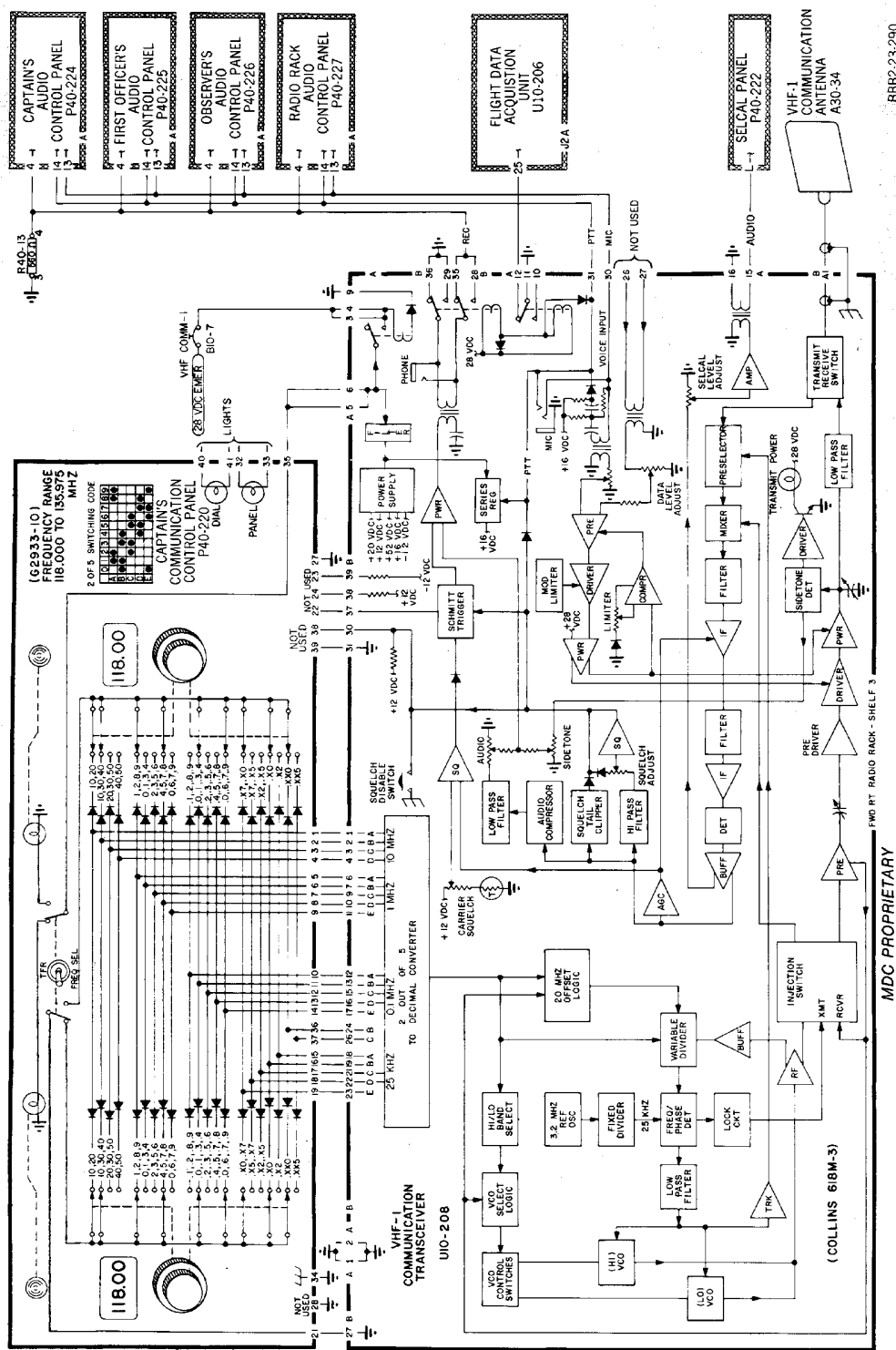
23-20-00

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AIRCRAFT MAINTENANCE MANUAL**

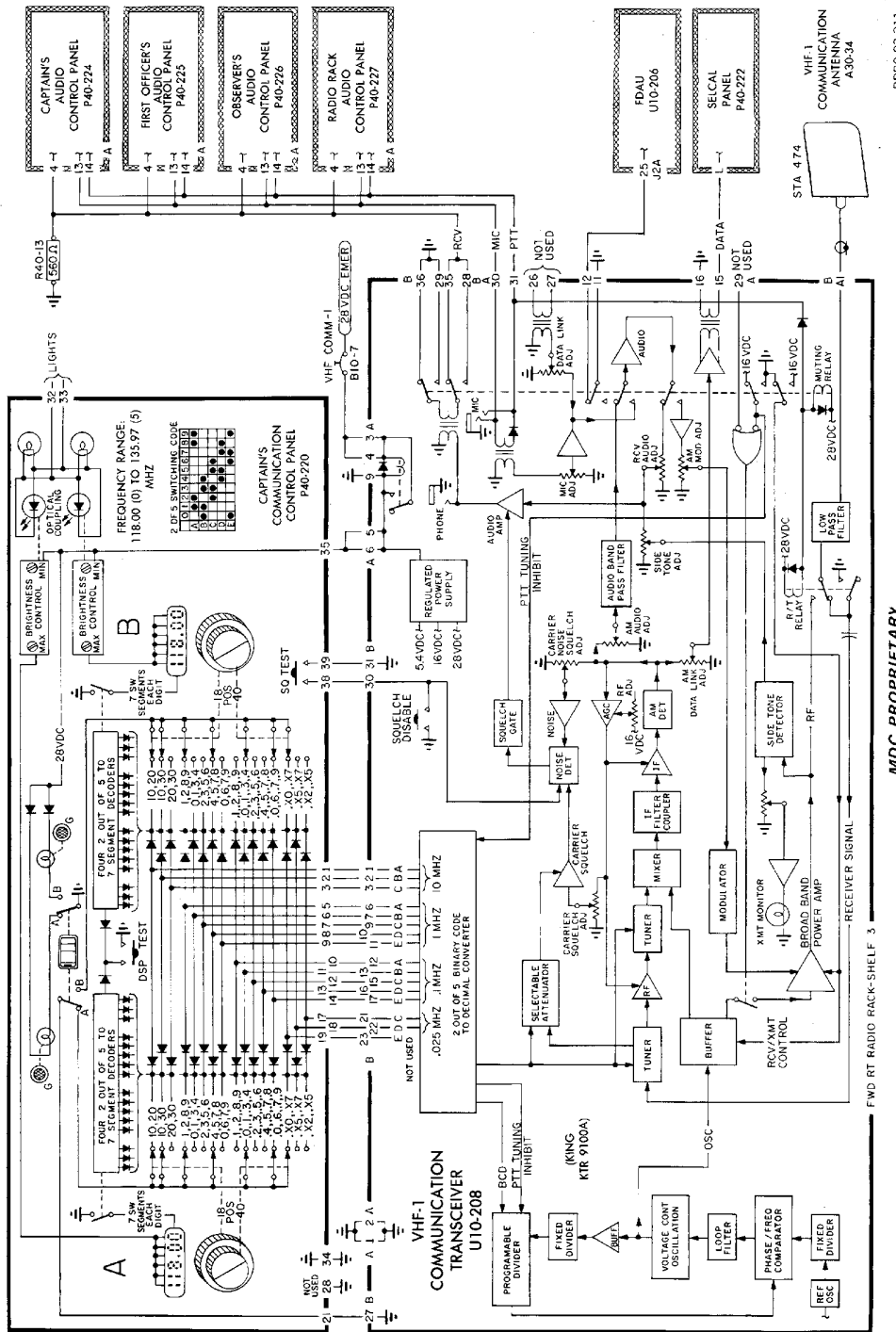


**VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 1 of 9)**

EFFECTIVITY  
WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 881, 883

**23-20-00**

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VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 2 of 9)

BB82-23-311

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FWD RT RADIO RACK-SHELF 3

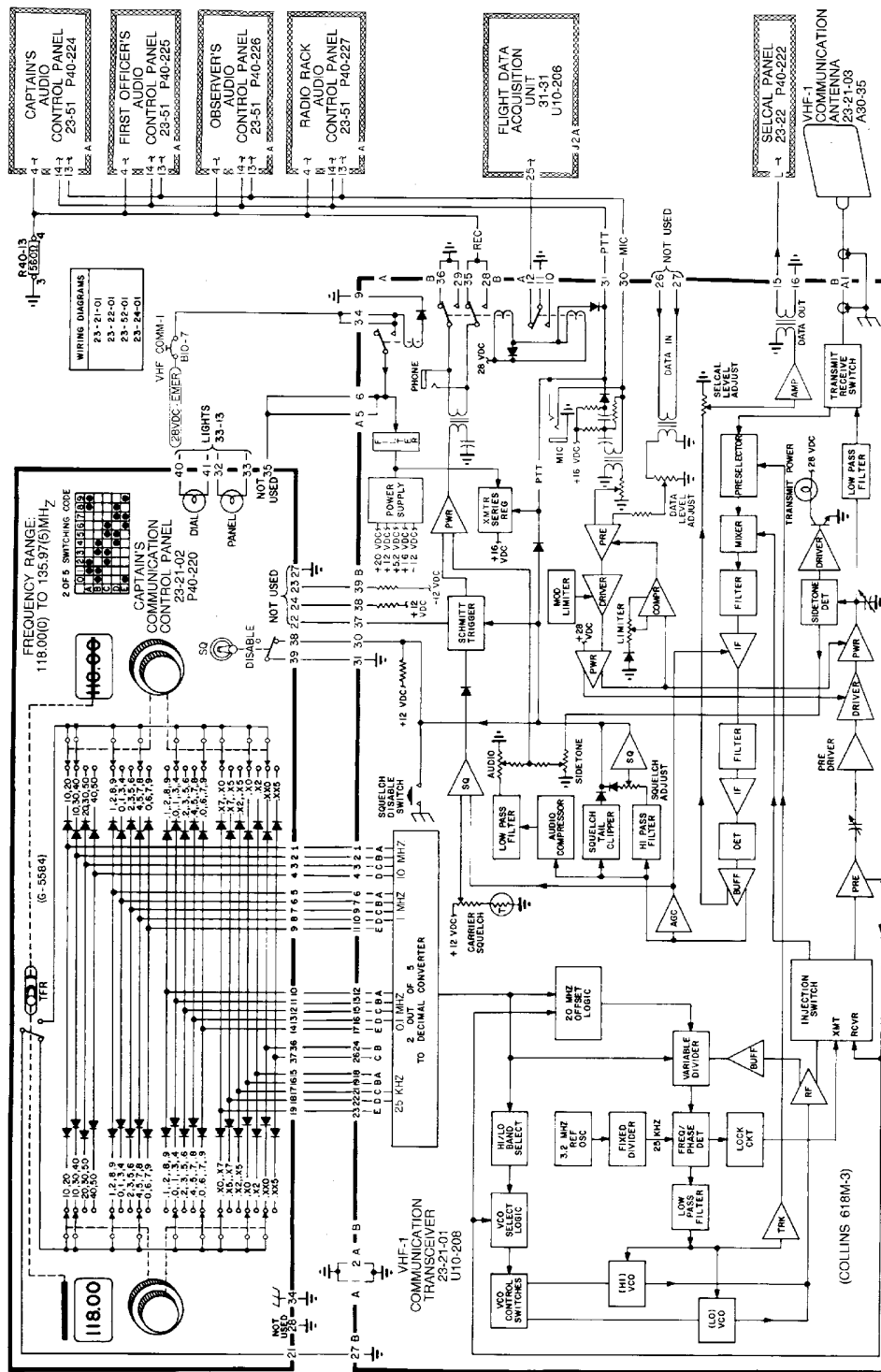
EFFECTIVITY  
WJE 886, 887

23-20-00

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VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 3 of 9)

BBB2-23-540

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

FWD RT RADIO RACK-SHELF 3

EFFECTIVITY  
WJE 405, 407-409, 411, 873, 874, 877, 880, 881, 883,  
884, 892, 893

**23-20-00**

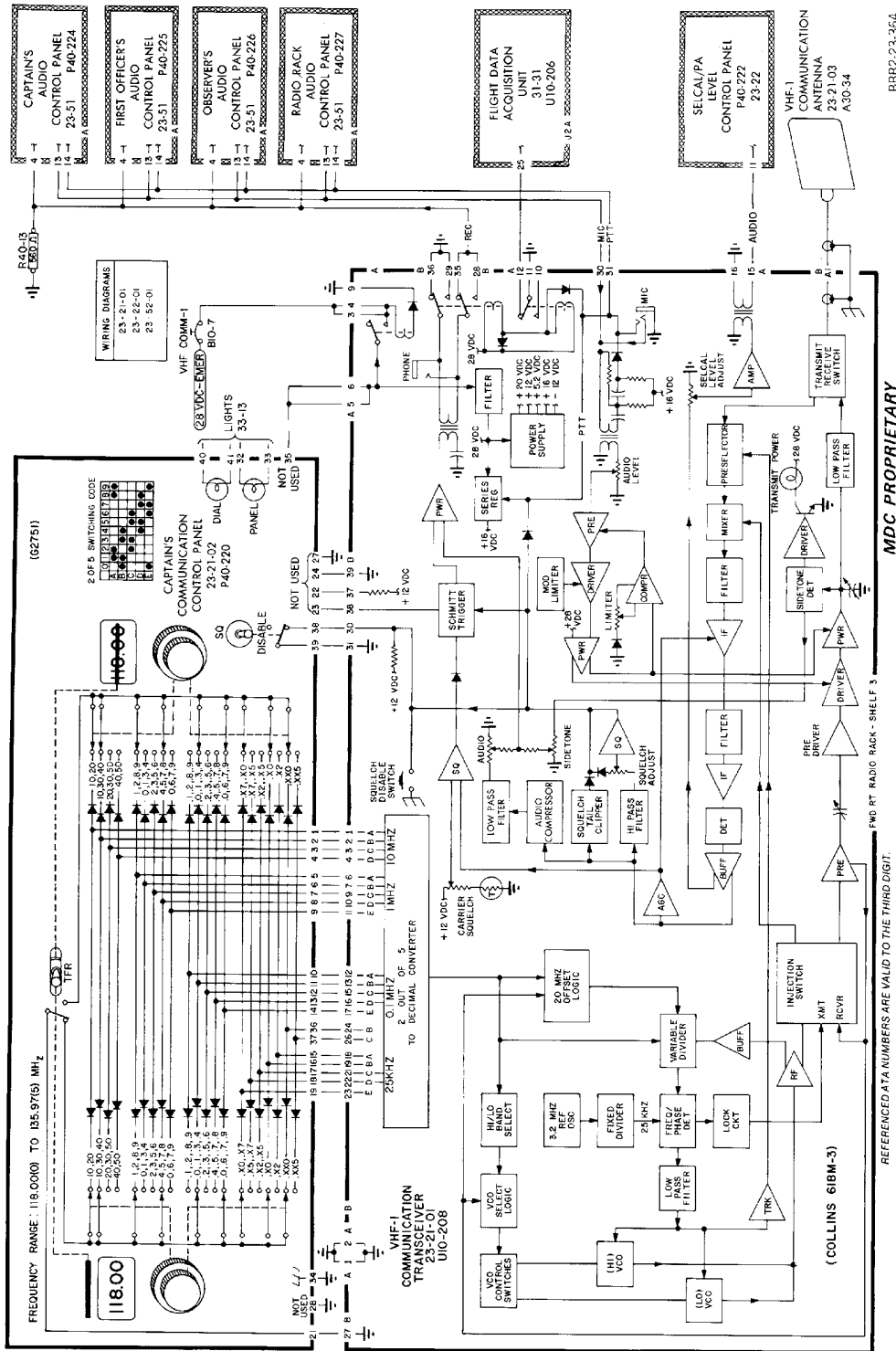
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TP-80MM-WJE

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VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 4 of 9)

BBR2-23-364

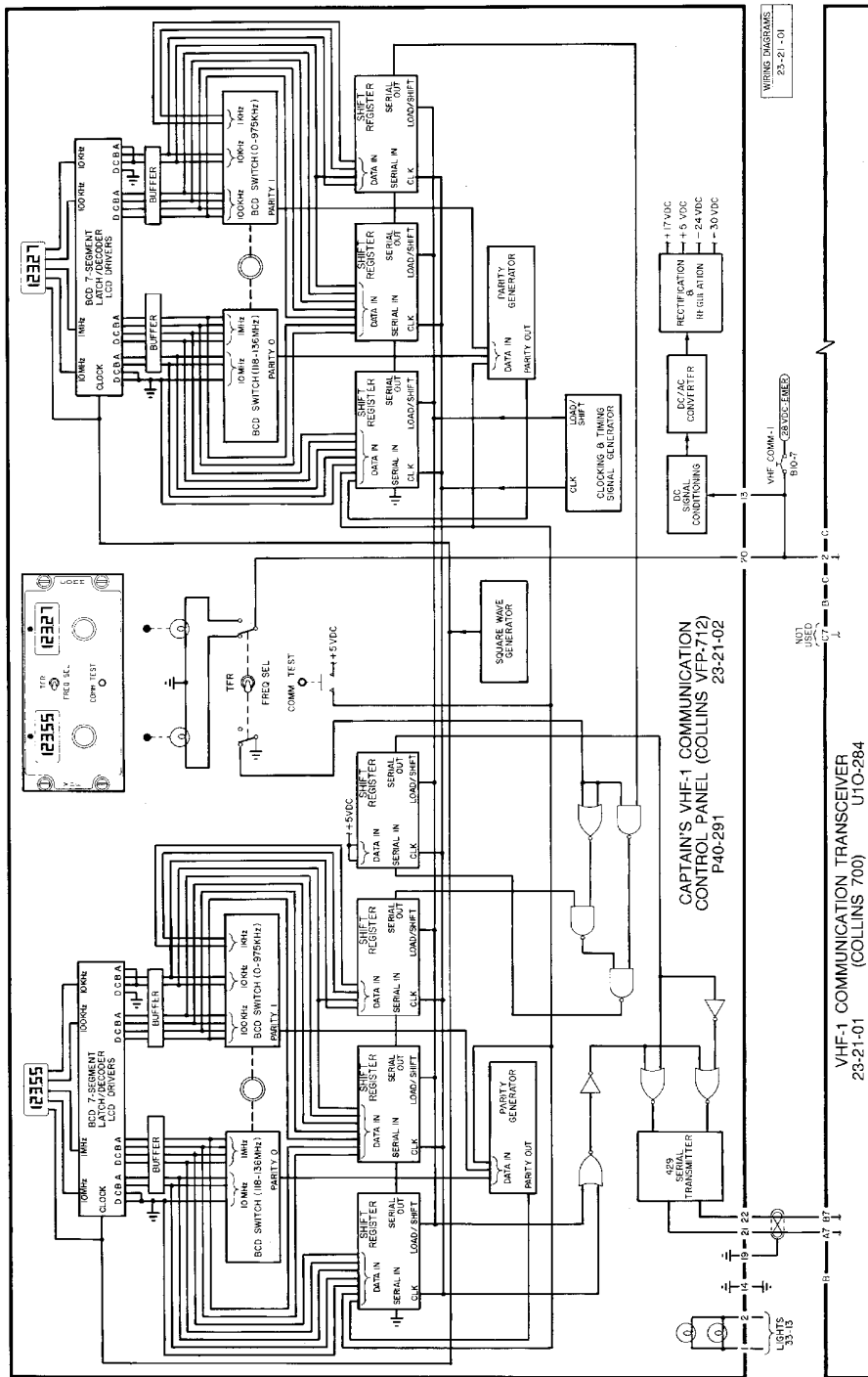
MDC PROPRIETARY

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

EFFECTIVITY  
WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864,  
866, 868, 891

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VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 5 of 9)

BBB2-23-568

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VHF-1 COMMUNICATION TRANSCIVER  
23-21-01  
(COLLINS 700)

CAPTAIN'S VHF-1 COMMUNICATION  
CONTROL PANEL (COLLINS VFP-712)  
P40-291

WIRING DIAGRAMS  
23-21-01

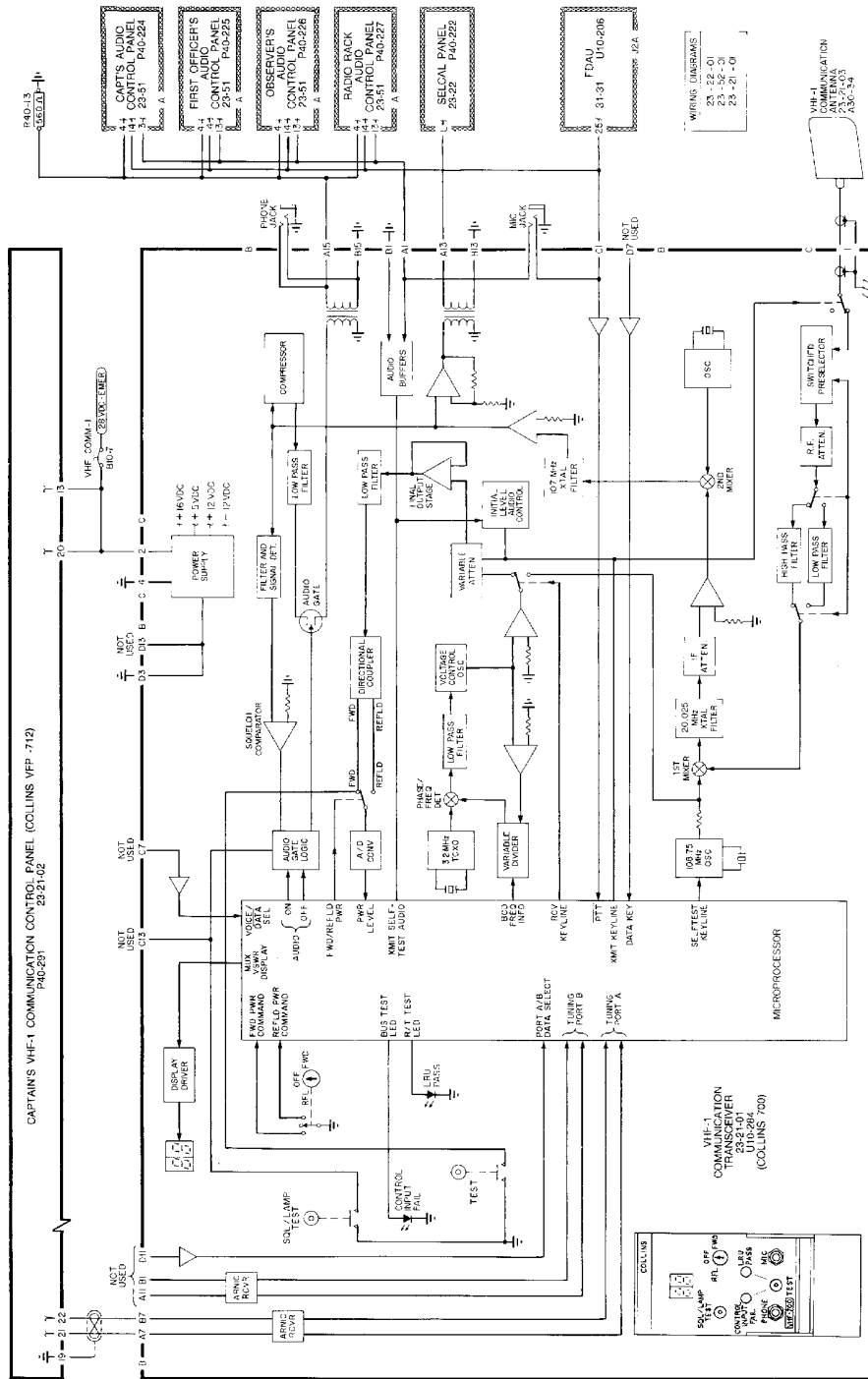
EFFECTIVITY  
WJE 401-404, 412, 414

23-20-00

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-23-578

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

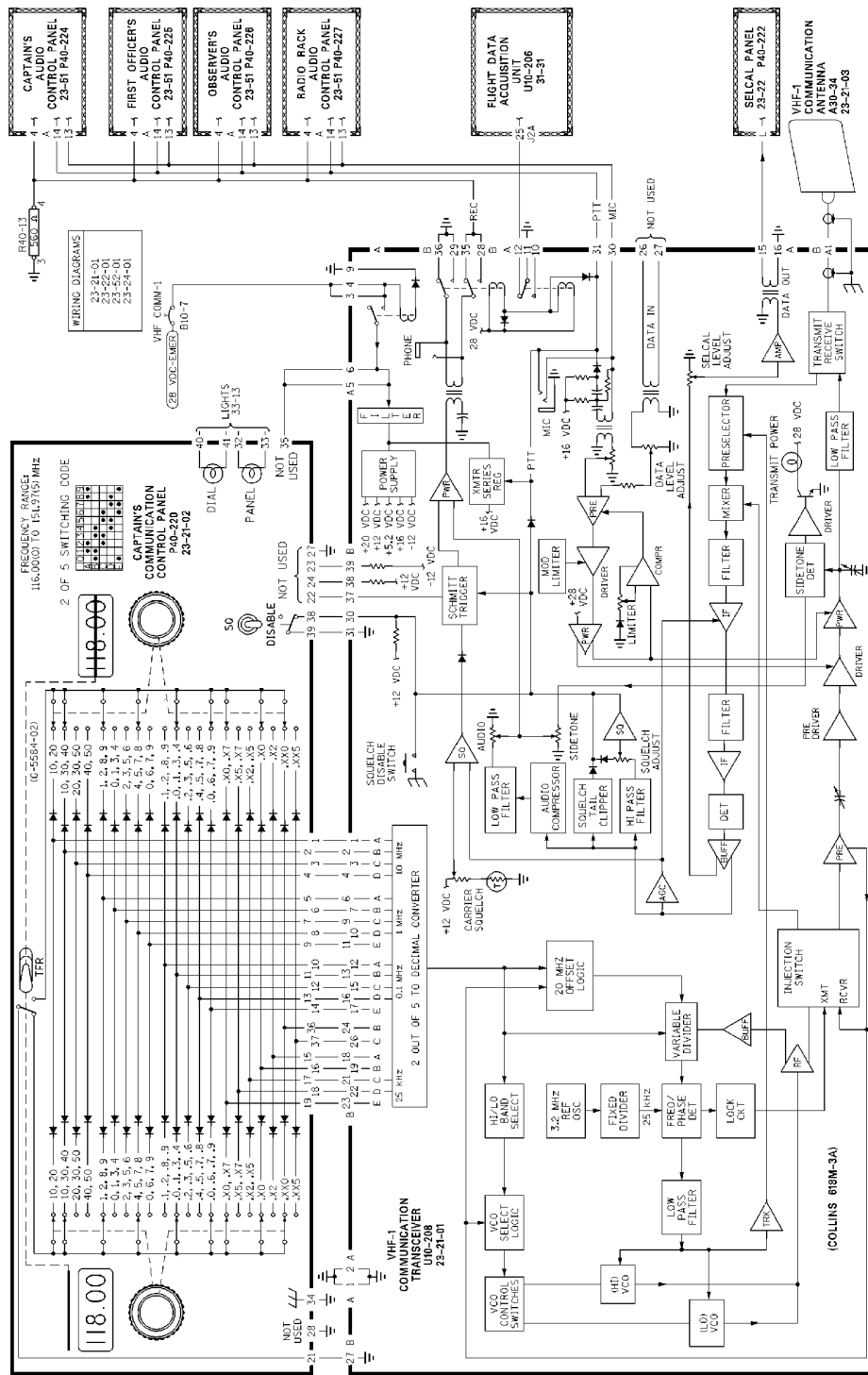
MDC PROPRIETARY

VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 6 of 9)

EFFECTIVITY  
WJE 401-404, 412, 414

23-20-00

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VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 7 of 9)

BBB2-23-643

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FWD RT RADIO RACK-SHELF 3

CAG(IGDS)

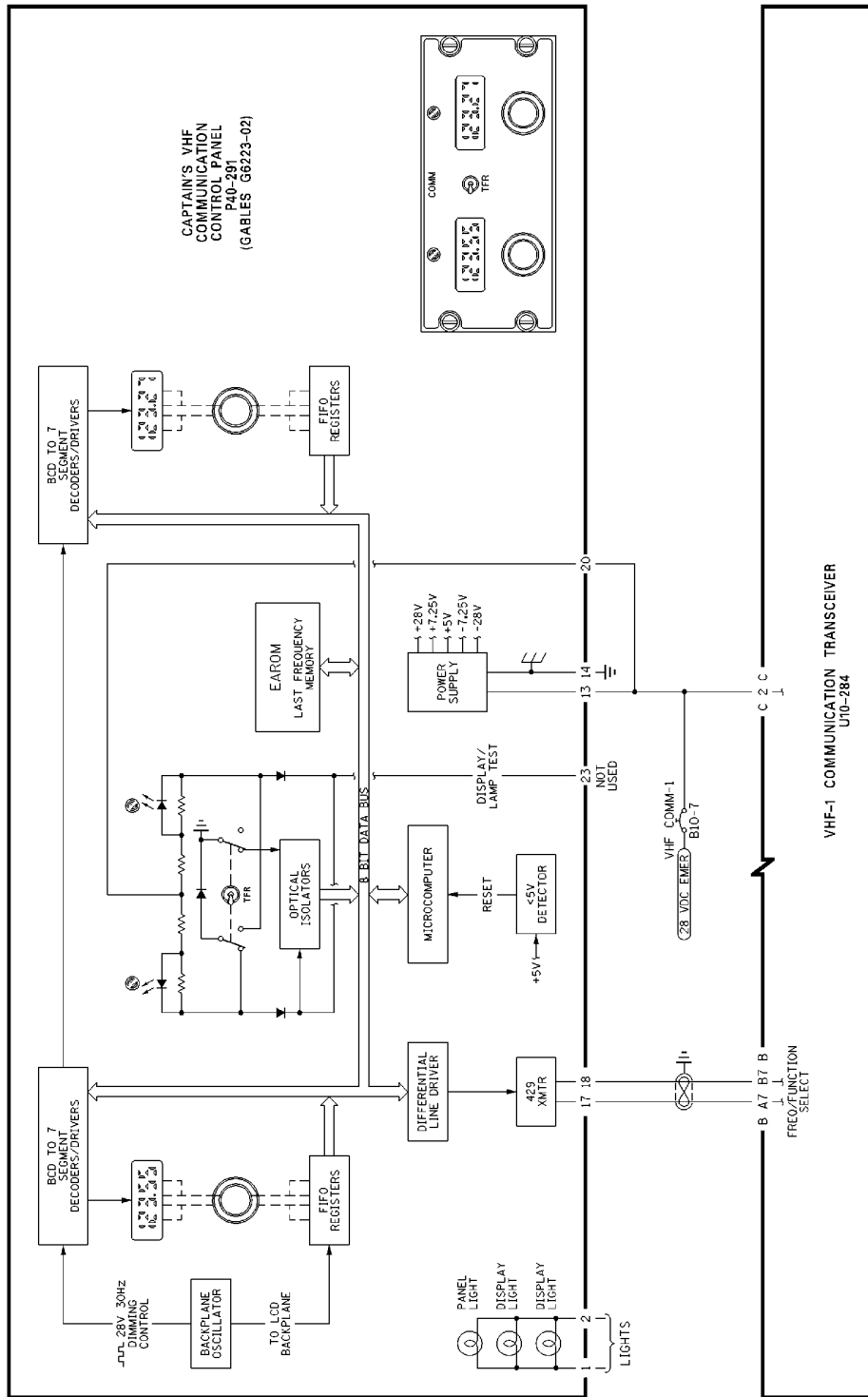
EFFECTIVITY  
WJE 410

23-20-00

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TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-23-621

MDC PROPRIETARY

CAG(IGDS)

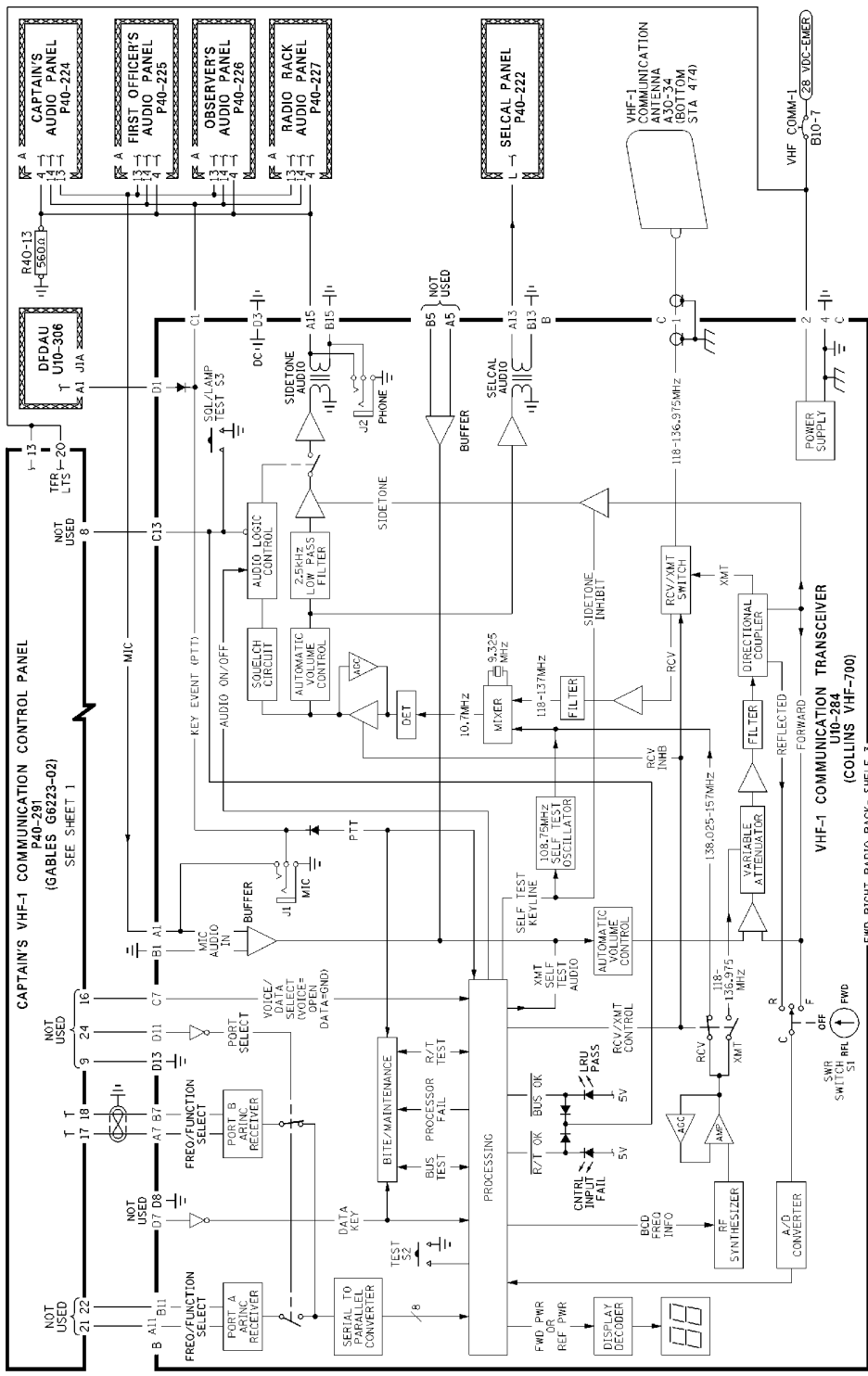
VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 8 of 9)

EFFECTIVITY  
WJE 875, 876, 878, 879

23-20-00



**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



BBB2-23-622

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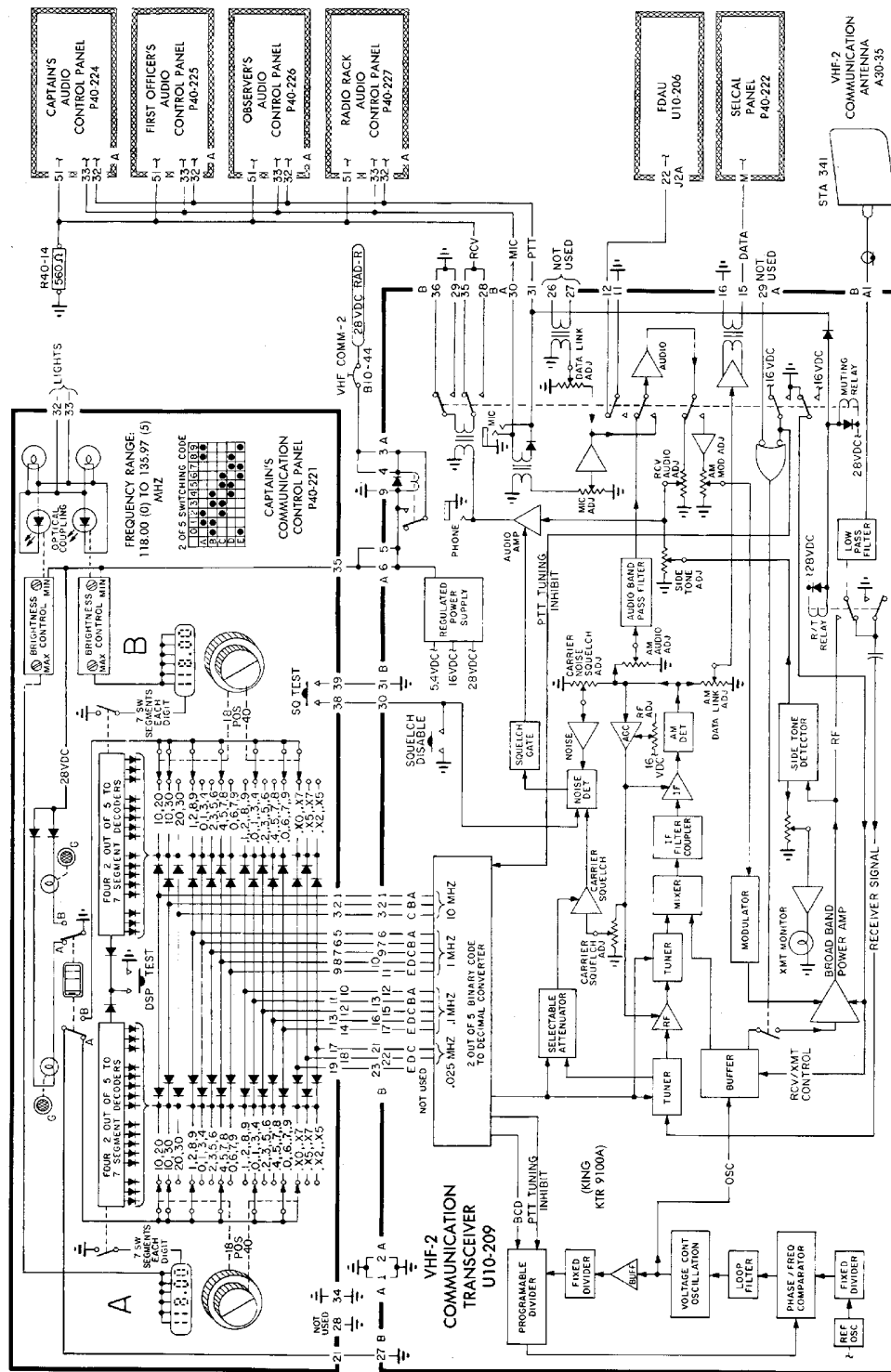
CAG(IIGDS)

**VHF Communications System-1 -- Schematic  
Figure 101/23-20-00-990-801 (Sheet 9 of 9)**

EFFECTIVITY  
WJE 875, 876, 878, 879

**23-20-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 1 of 9)

BBB2-23-310

MDC PROPRIETARY

FWD RT RADIO RACK-SHELF 3

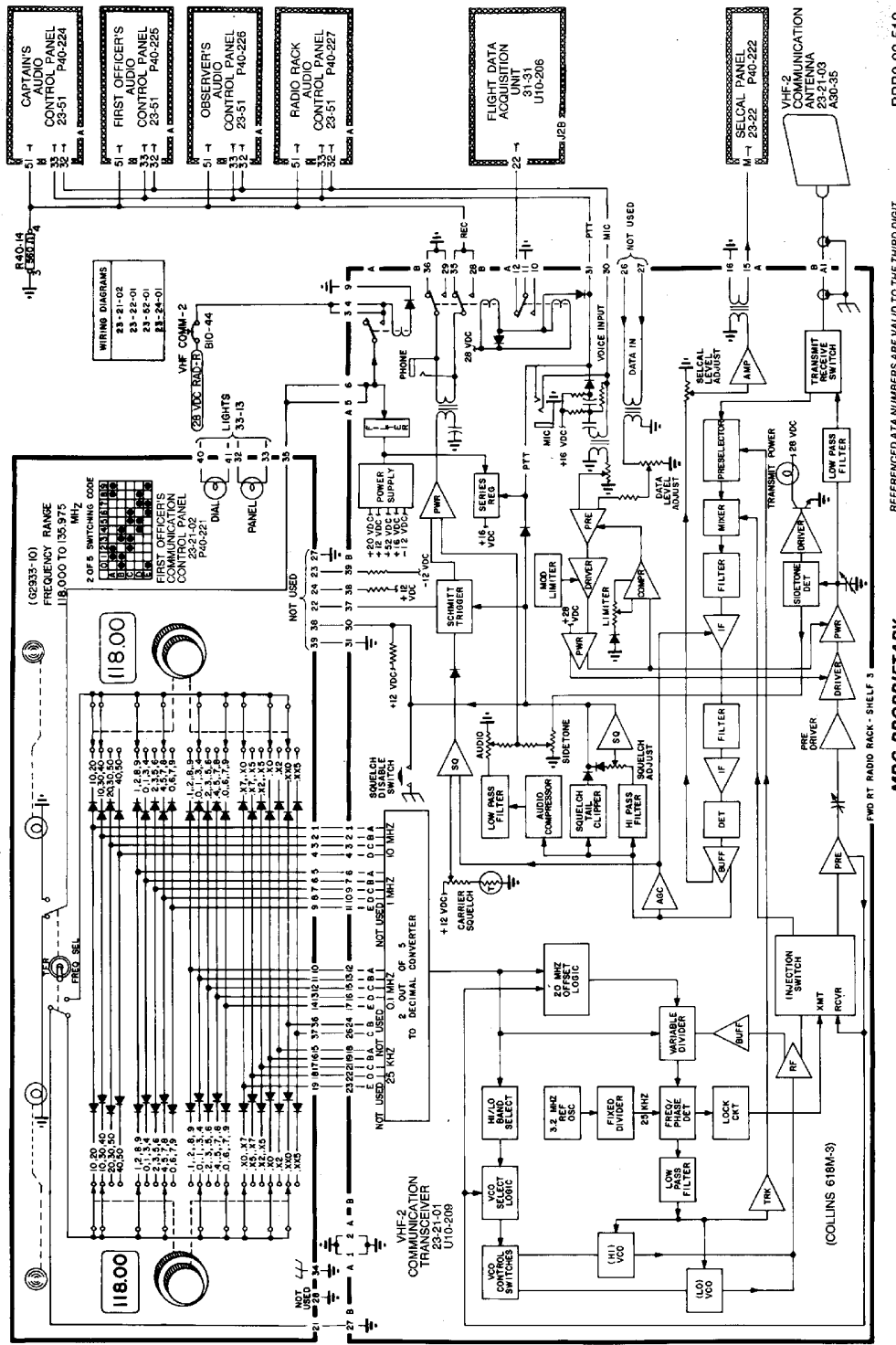
EFFECTIVITY  
WJE 886, 887

23-20-00

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**VHF Communications System-2 -- Schematic**  
Figure 102/23-20-00-990-802 (Sheet 2 of 9)

BBB2-23-512

REFERENCED DATA NUMBERS ARE VALID TO THE THIRD DIGIT.

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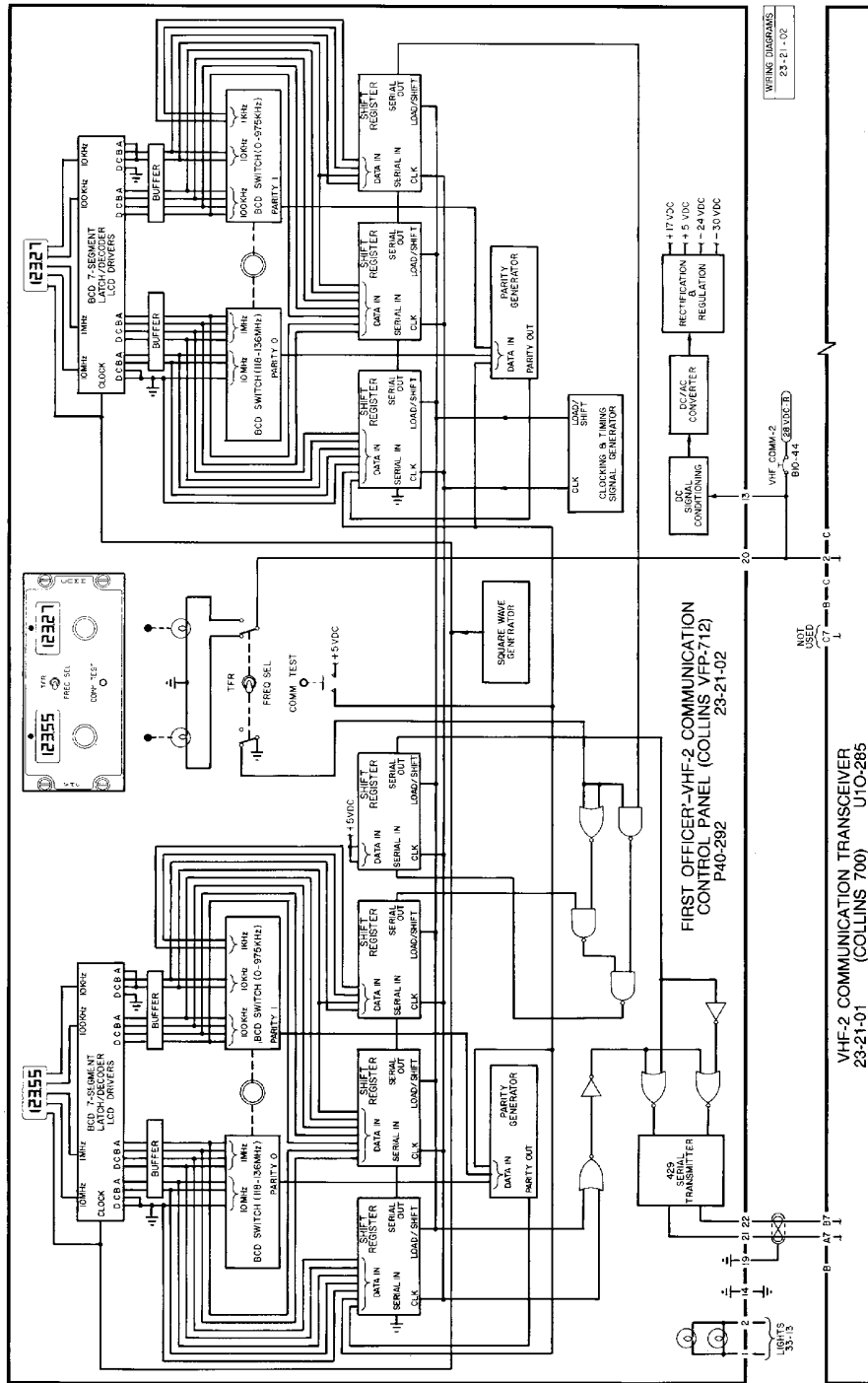
FWD RT RADIO BACK - SHELF 3  
(COLLINS 618M-3)

EFFECTIVITY

WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 881, 883
---

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 3 of 9)

EFFECTIVITY  
WJE 401-404, 412, 414

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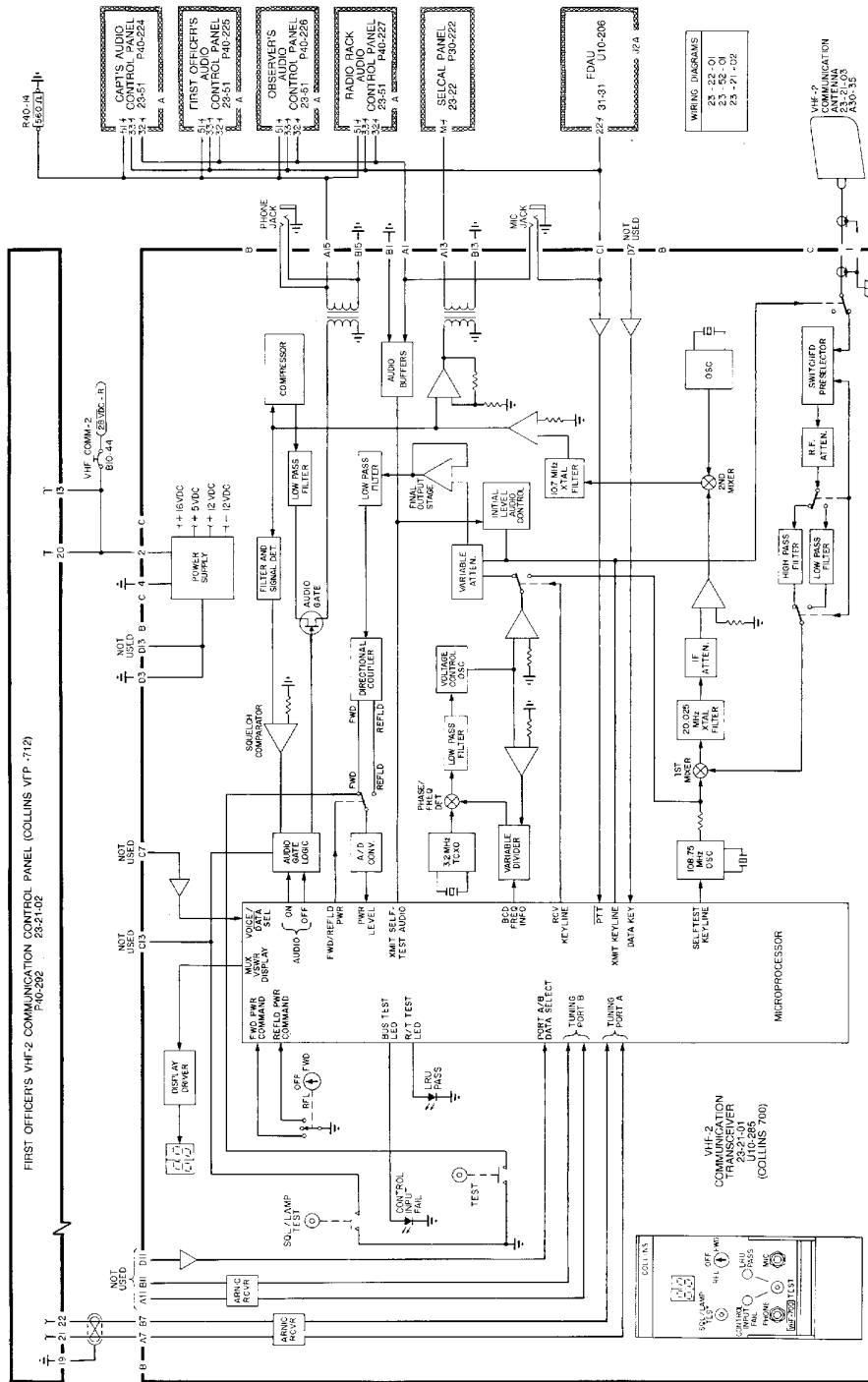
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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

BBB2-23-569

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VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 4 of 9)

BBB2-23-579

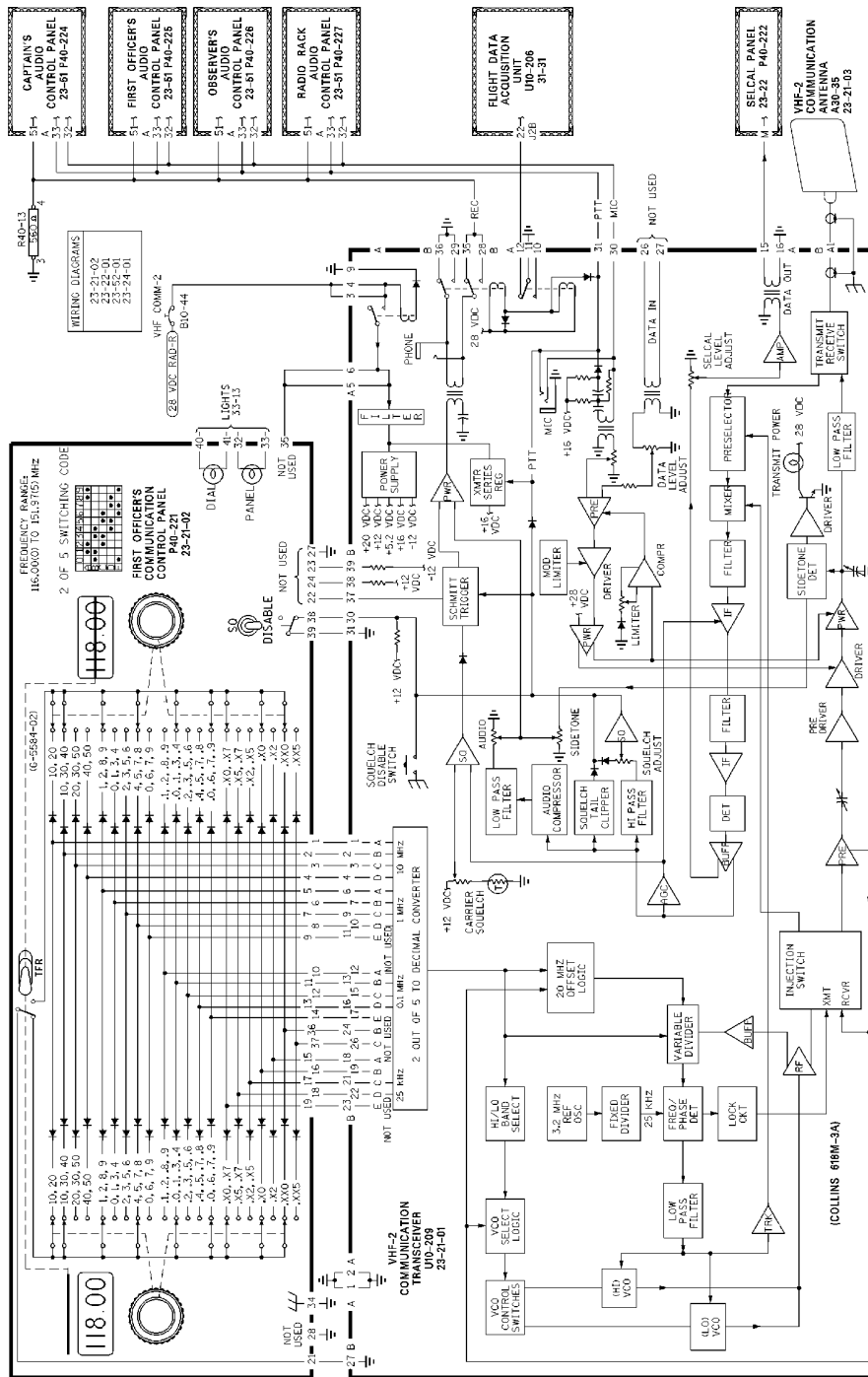
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

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EFFECTIVITY  
WJE 401-404, 412, 414

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BBB2-23-644

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CAG(IGDS)

VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 5 of 9)

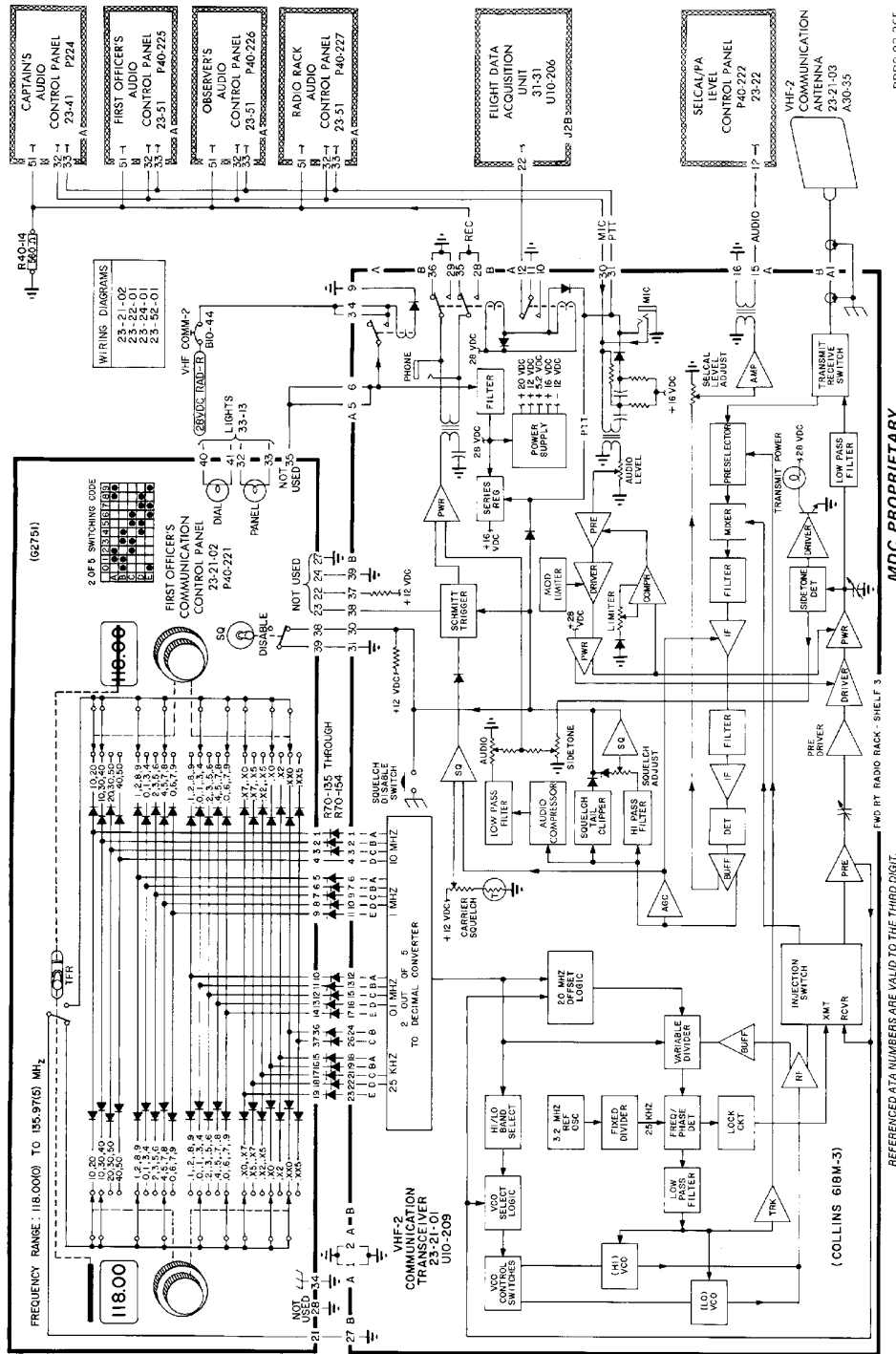
EFFECTIVITY  
WJE 410

23-20-00

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VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 6 of 9)

BB82-23-365

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

EFFECTIVITY  
WJE 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 891

23-20-00

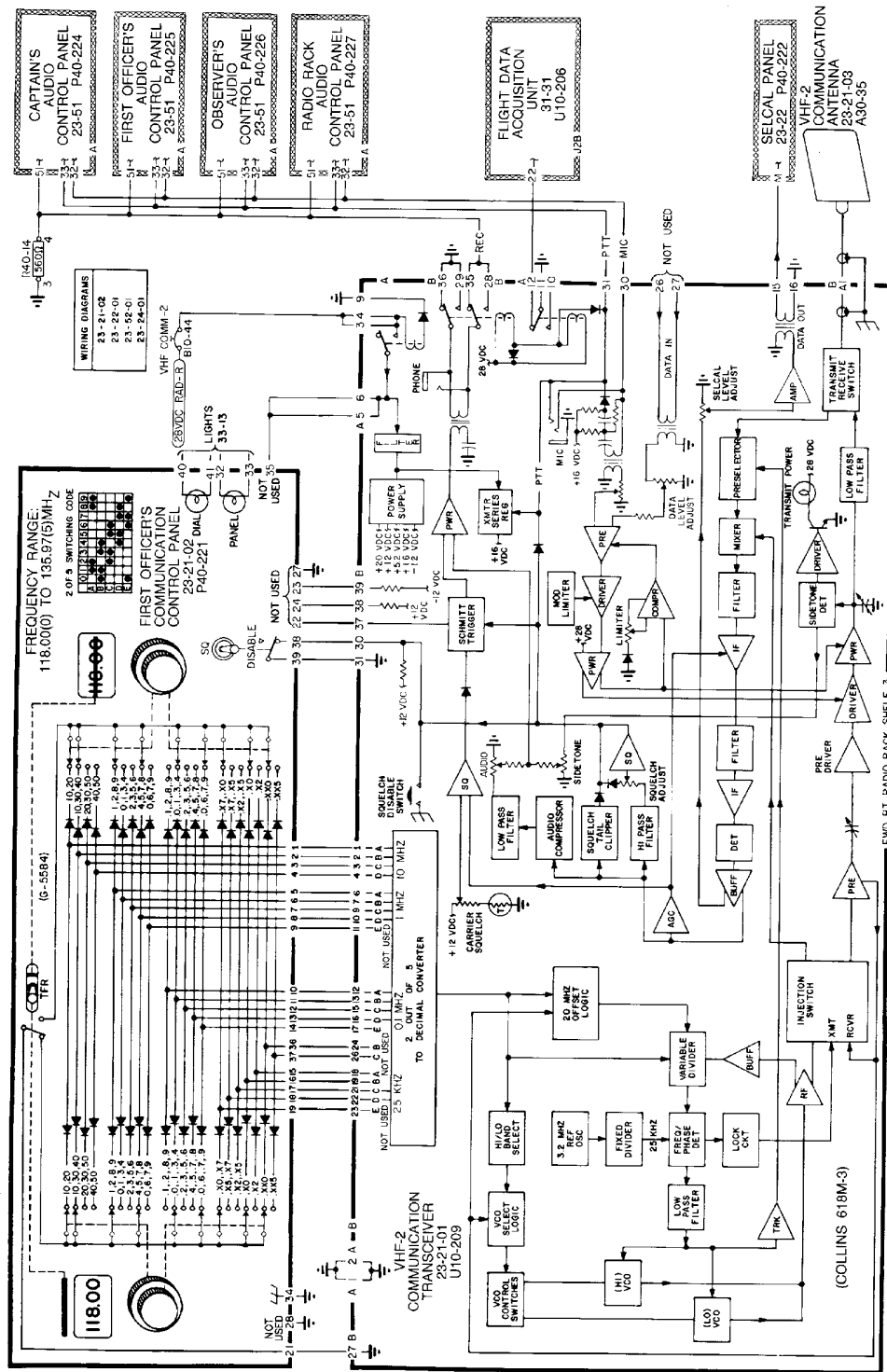
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**VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 7 of 9)**

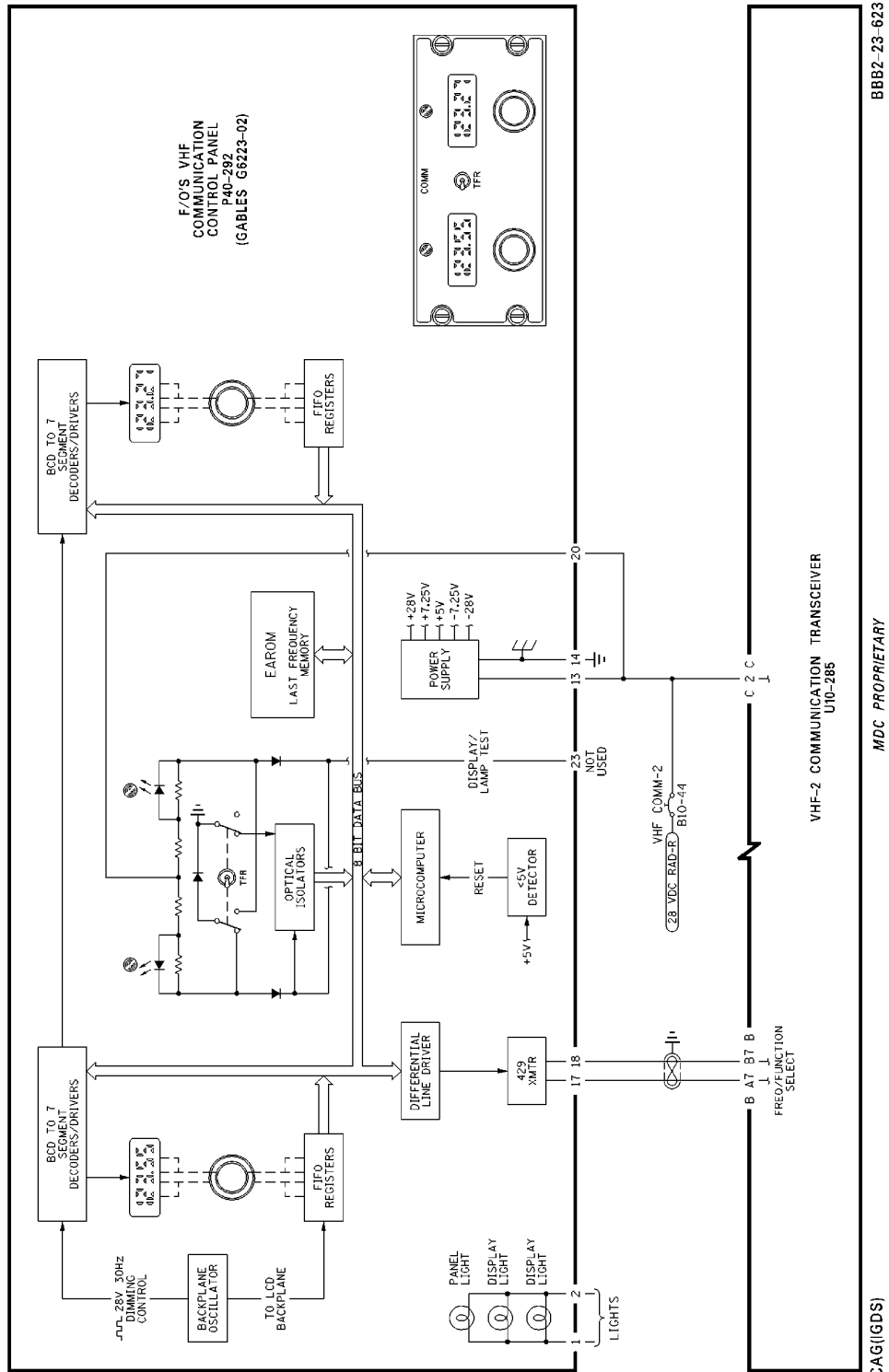
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
**MDC PROPRIETARY**  
BBB2-23-541

**EFFECTIVITY**  
WJE 405, 407-409, 411, 873, 874, 877, 880, 884, 892, 893

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 8 of 9)

EFFECTIVITY  
WJE 875, 876, 878, 879

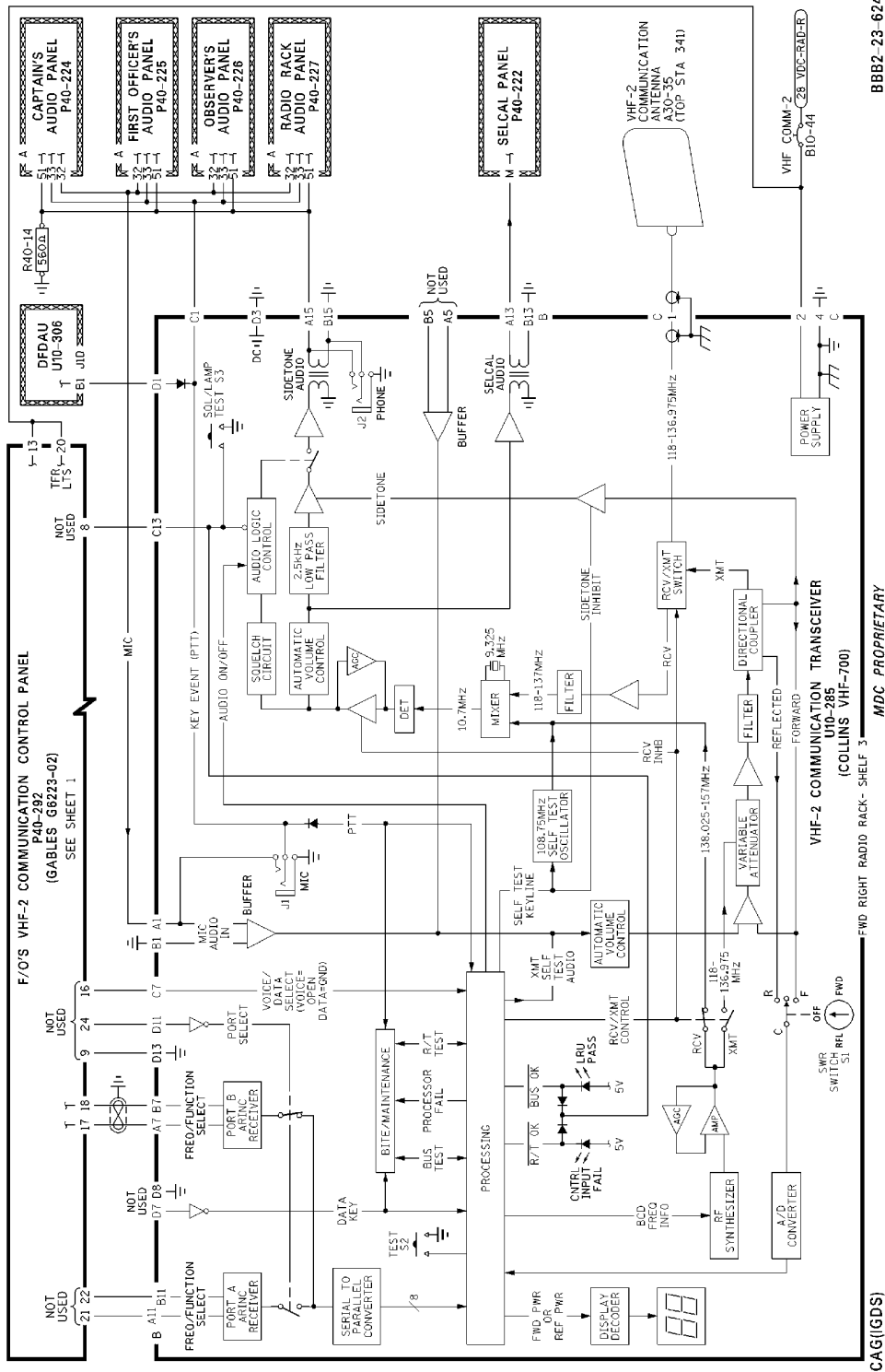
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BBB2-23-623

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CAG(IGDS)

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BBB2-23-624

MDC PROPRIETARY

CAG(IGDS)

VHF Communications System-2 -- Schematic  
Figure 102/23-20-00-990-802 (Sheet 9 of 9)

EFFECTIVITY  
WJE 875, 876, 878, 879

23-20-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VHF - MAINTENANCE PRACTICES

### 1. General

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

- A. This maintenance practice provides adjustment/test to verify correct operation of system. Test as written is for VHF-1 system. VHF-2 and VHF-3 system test procedures are identical except for circuit breakers (VHF-2), (VHF-3).

NOTE: If a malfunction is found, a visual check of system should be made for loose plugs and damage before interchanging any equipment.

**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893**

- B. This maintenance practice provides adjustment/test to verify correct operation of system. Test as written is for VHF-1 system. VHF-2 system test procedure is identical except for circuit breaker (VHF-2) and antenna.

NOTE: If a malfunction is found, a visual check of system should be made for loose plugs and damage before interchanging any equipment.

**WJE ALL**

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of following items, which are required only when performing forward and reflected RF power check.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
RF Wattmeter, (100-250 MHz with 50 watt element)	
Thruline - 43	Bird Electronic Corp.

### 3. Adjustment/Test VHF System

- A. Test Receiving Function

**WJE 417, 419, 421, 423, 865, 869, 871, 872, 875-879**

**Table 202**

Step	Operation	Desired Result
(1)	On all audio panels, adjust all volume controls to off position.	
(2)	On VHF-1 frequency control panel, place TFR switch to left hand position.	Indicator light above display window comes on.
(3)	On captain's audio panel adjust VHF-1 volume control to mid-range.	
(4)	On VHF-1 frequency control panel select several operating frequencies.	Clear reception, free of distortion.
(5)	On captain's audio panel adjust VHF-1 volume control through its range.	Smooth level variation, free of control noise.

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 417, 419, 421, 423, 865, 869, 871, 872, 875-879 (Continued)**

**Table 202 (Continued)**

Step	Operation	Desired Result
(6)	Channel right hand frequency selector to same frequency as left hand selector.	
(7)	Place TFR switch to right hand position.	Indicator lights above display window on.
(8)	Channel right hand frequency selector to several operating frequencies.	Clear reception, free of distortion.
(9)	Repeat steps (1) through (5) at first officer's, observer's, and radio rack audio control panels. Use a single operating frequency in step (4).	Same as for captain's audio control panel.
(10)	Repeat steps (1) through (9) for VHF-2 and VHF-3 communication system.	Same as for VHF-1 system.

**WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893**

**Table 203**

Step	Operation	Desired Result
(1)	On all audio panels, adjust all volume controls to off position.	
<b>WJE 401-404, 406, 412, 414, 415, 418, 863, 864, 866</b>		
(2)	On VHF-1 frequency control panel place TFR switch to left hand position.	Indicator light above display window on.
<b>WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 891-893</b>		
(2)	On VHF-1 frequency control panel place TFR switch to left hand position.	Bar obscures right hand frequency read-out.
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893</b>		
(3)	On captain's audio panel adjust VHF-1 volume control to mid-range.	
(4)	On VHF-1 frequency control panel, select several operating frequencies.	Clear reception, free of distortion.
(5)	On captain's audio panel, adjust VHF-1 volume control through its range.	Smooth level variation, free of control noise.
<b>WJE 401-404, 412, 414</b>		
(6)	On VHF-1 frequency control panel, press COMM TEST switch.	Increased receiver background noise.
(7)	Release COMM TEST switch.	Decreased receiver background noise.
<b>WJE 405, 407-409, 411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893</b>		
(6)	On VHF-1 frequency control panel place SQ/DISABLE switch to DISABLE position.	Increased receiver background noise.
(7)	Place SQ/DISABLE switch to SQ position.	Decreased receiver background noise.

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**WJE 405, 407-409, 411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893 (Continued)**

**Table 203 (Continued)**

Step	Operation	Desired Result
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893</b>		
(8)	Channel right hand frequency selector to same frequency as left hand selector.	
<b>WJE 401-404, 406, 412, 414, 415, 418, 863, 864, 866</b>		
(9)	Place TFR switch to right hand position.	Indicator lights below display window on.
<b>WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 891-893</b>		
(9)	Place TFR switch to right hand position.	Bar obscures right hand frequency read-out.
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893</b>		
(10)	Channel right hand frequency selector to several operating frequencies.	Clear reception, free of distortion.
(11)	Repeat steps (1) through (5) at first officer's, observer's, and radio rack audio control panels. Use a single operating frequency in step (4).	Same as for captain's audio control panel.
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>		
(12)	Repeat steps (1) through (11) for VHF-2 communication system.	Same as for VHF-1 system.
<b>WJE 406, 881, 883</b>		
(12)	Repeat steps (1) through (11) for VHF-2 and VHF-3 communication system.	Same as for VHF-1 system.

**WJE ALL**

B. Test Transmitting Function

**NOTE:** The following adjustment to the VHF Transceivers are authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm$  10% across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate VHF Transceiver overhaul manual for detailed instructions of how to perform the adjustment.

**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-874, 880, 881, 883, 884, 891-893**

**Table 204**

Step	Operation	Desired Result
(1)	On all audio panels, place all volume controls to off position.	
<b>CAUTION:</b> MAXIMUM DUTY CYCLE IS ONE MINUTE KEYED, FOLLOWED BY TWO MINUTES UNKEYED.		

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**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-874, 880, 881, 883, 884, 891-893 (Continued)**

**Table 204 (Continued)**

Step	Operation	Desired Result
(2)	On VHF-1 frequency control panel, select assigned tower frequency.	
<b>NOTE:</b> Before making any transmission, make certain frequency is not in use.		
(3)	On captain's audio panel, adjust VHF-1 volume control to mid-range and press VHF-1 microphone selector.	
(4)	Using hand-held microphone, press push-to-talk switch and call tower.	Sidetone present in headset, discernible above normal flight and checkout noises.
(5)	On VHF-1 frequency control panel, select a frequency that is not in use.	
(6)	On captain's audio panel, place RADIO/INT switch to RADIO and hold, while speaking into oxygen mask microphone.	Sidetone as for step (4).
(7)	Repeat step (6) using boom microphone (if installed).	Sidetone as for step (4).
<b>WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-874, 880, 881, 883, 884, 891-893</b>		
(8)	On captain's control wheel press RADIO/INTER switch to RADIO (aft) position and hold, while speaking into oxygen mask microphone.	Sidetone as for step (4).
<b>WJE 401-404, 412, 414</b>		
(8)	On captain's control wheel press push-to-talk switch and hold, while speaking into oxygen mask microphone.	Sidetone as for step (4).
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-874, 880, 881, 883, 884, 891-893</b>		
(9)	Repeat preceding step using boom microphone (if installed).	Sidetone as for step (4).
(10)	On observer's audio panel adjust VHF-1 volume control to mid-range and press VHF-1 microphone selector.	
(11)	Using observer's hand-held microphone, press push-to-talk switch while speaking into microphone.	Sidetone as for step (4).
(12)	On observer's audio panel, press RADIO/INT switch to RADIO and hold, while speaking into oxygen mask microphone.	Sidetone as for step (4).
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 891-893</b>		
(13)	Repeat steps (1) through (12) for VHF-2 communication systems.	Same as for VHF-1 system.

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**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 891-893  
(Continued)**

**Table 204 (Continued)**

Step	Operation	Desired Result
(14)	Verify that VHF-2 audio can be controlled from captain's station, and that VHF-1 audio can be controlled from first officer's station.	
<b>WJE 869, 871, 872, 881, 883</b>		
(13)	Repeat steps (1) through (12) for VHF-2 and VHF-3 communication systems.	Same as for VHF-1 system.
(14)	Verify that VHF-2 and VHF-3 audio can be controlled from captain's station, and that VHF-1 and VHF-3 audio can be controlled from first officer's station.	

**WJE 406, 417, 419, 421, 423, 865, 875-879, 886, 887**

**Table 205**

Step	Operation	Desired Result
(1)	On all audio panels, place all volume controls to off position.	
<b>CAUTION:</b> MAXIMUM DUTY CYCLE IS ONE MINUTE KEYED, FOLLOWED BY TWO MINUTES UNKEYED.		
(2)	On VHF-1 frequency control panel, select assigned tower frequency.	
<b>NOTE:</b> Before making any transmission, make certain frequency is not in use.		
(3)	On captain's audio panel, adjust VHF-1 volume control to mid-range and press VHF-1 microphone selector.	
(4)	Using hand-held microphone, press push-to-talk switch and call tower.	Sidetone present in headset, discernible above normal flight and checkout noises.
(5)	On VHF-1 frequency control panel, select a frequency that is not in use.	
(6)	On captain's control wheel, press push-to-talk switch and hold, while speaking into oxygen mask microphone.	Sidetone as for step (4).
(7)	Repeat preceding step using boom microphone (if installed).	Sidetone as for step (4).
(8)	On observer's audio panel, adjust VHF-1 volume control to mid-range and press VHF-1 microphone selector.	
(9)	Using observer's hand-held microphone, press push-to-talk switch while speaking into microphone.	Sidetone as for step (4).

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WJE 406, 417, 419, 421, 423, 865, 875-879, 886, 887 (Continued)

**Table 205 (Continued)**

Step	Operation	Desired Result
<b>WJE 886, 887</b>		
(10)	Repeat steps (1) through (9) for VHF-2 communication systems.	Same as for VHF-1 system.
<b>WJE 406, 417, 419, 421, 423, 865, 875-879</b>		
(10)	Repeat steps (1) through (9) for VHF-2 and VHF-3 communication systems.	Same as for VHF-1 system.
<b>WJE 886, 887</b>		
(11)	Verify that VHF-2 audio can be controlled from captain's station, and that VHF-1 audio can be controlled from first officer's station.	
<b>WJE 406, 417, 419, 421, 423, 865, 875-879</b>		
(11)	Verify that VHF-2 and VHF-3 audio can be controlled from captain's station, and that VHF-1 and VHF-3 audio can be controlled from first officer's station.	

**WJE ALL**

C. Transmitter Power Test (Self Test)

**Table 206**

Step	Operation	Desired Result
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>		
(1)	At VHF transceiver front panel, connect hand-held microphone and headset.	
<b>WJE 417, 419, 421, 423, 865</b>		
(1)	On transceiver front panel, hold RFL/OFF/FWD switch to FWD position.	Display indicates 10 watts minimum output.
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>		
<b>CAUTION:</b> MAXIMUM DUTY CYCLE IS ONE MINUTE KEYED, FOLLOWED BY TWO MINUTES UNKEYED.		
<b>WJE 405-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893</b>		
(2)	Press and hold microphone push-to-talk switch (speech not necessary).	TRANSMIT POWER light comes on. (Indicates 10 watts minimum output).
<b>WJE 401-404, 412, 414, 875-879</b>		
(2)	On transceiver front panel, hold RFL/OFF/FWD switch to FWD position. Press and hold microphone push-to-talk switch (speech not necessary).	Display indicates 10 watts minimum output.

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D. Forward and Reflected Power (VSWR) Test

NOTE: The following test is to be performed when transmissions are weak or non-existent, and a transceiver known to be serviceable is installed.

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

**Table 207**

Step	Operation	Desired Results			
(1)	Open these circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(2)	In electrical/electronics compartment, insert RF wattmeter in series with VHF-1 (-2), (-3) antenna coaxial cable.				
(3)	Rotate arrow on wattmeter element to direction of coaxial cable that leads to antenna.				
(4)	Close the following circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(5)	On VHF-1 (-2) (-3) frequency control panel, select a frequency that is not in use.				
(6)	In electrical/electronics compartment, connect headset and hand-held microphone to front panel of transceiver under test.				
<b>CAUTION:</b> MAXIMUM DUTY CYCLE IS ONE MINUTE KEYED, FOLLOWED BY TWO MINUTES UNKEYED.					
(7)	Press and hold microphone push-to-talk switch to measure forward power (do not talk). Read RF wattmeter. Release push-to-talk switch.	20 watts minimum output (forward) power.			
(8)	Rotate arrow on wattmeter element 180°, to direction of coaxial cable that leads to transceiver.				
(9)	Press and hold microphone push-to-talk switch to measure reflected power (do not talk). Read wattmeter, then release push-to-talk switch.	No more than 1/9 of forward power.			
<u>NOTE:</u> Forward power reading below tolerance indicates lowered transceiver performance. Reflected power reading above tolerance indicates faulty antenna circuitry.					

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WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883 (Continued)

**Table 207 (Continued)**

Step	Operation				Desired Results
(10)	Open these circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(11)	Remove RF wattmeter and connect VHF-1 (-2), (-3) coaxial cable.				
(12)	Close the following circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(13)	Return aircraft to required configuration.				

**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893**

**Table 208**

Step	Operation				Desired Result
(1)	Open these circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
<b>WJE 410</b>					
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/9
<b>WJE 401-405, 407-409, 411, 412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>					
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>					
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(2)	In electrical/electronics compartment, insert RF wattmeter in series with VHF-1 (-2) antenna coaxial cable.				

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**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893 (Continued)**

**Table 208 (Continued)**

Step	Operation	Desired Result
(3)	Rotate arrow on wattmeter element to direction of coaxial cable that leads to antenna.	
(4)	Close these circuit breakers:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
<b>WJE 410</b>		
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY DC BUS      B/9	
<b>WJE 401-405, 407-409, 411, 412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>		
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY DC BUS      B/8	
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>		
	B10-44      VHF COMM-2      UPPER EPC      RIGHT RADIO DC BUS      G/5	
(5)	On VHF-1 (-2) frequency control panel, select a frequency that is not in use.	
(6)	In electrical/electronics compartment, connect headset and hand-held microphone to front panel of transceiver under test.	
<b>CAUTION: MAXIMUM DUTY CYCLE IS ONE MINUTE KEYED, FOLLOWED BY TWO MINUTES UNKEYED.</b>		
(7)	Press and hold microphone push-to-talk switch to measure forward power (do not talk). Read RF wattmeter. Release push-to-talk switch.	20 watts minimum output forward power.
(8)	Rotate arrow on wattmeter element 180°, to direction of coaxial cable that leads to transceiver.	
(9)	Press and hold microphone push-to-talk switch to measure reflected power (do not talk). Read wattmeter then release push-to-talk switch.	No more than 1/9 of forward power.
<b>NOTE:</b> Forward power reading below tolerance indicates lowered transceiver performance. Reflected power reading above tolerance indicates faulty antenna circuitry.		
(10)	Open these circuit breakers:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
<b>WJE 410</b>		
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY DC BUS      B/9	

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WJE 410 (Continued)

**Table 208 (Continued)**

Step	Operation				Desired Result
<b>WJE 401-405, 407-409, 411, 412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>					
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>					
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(11)	Remove RF wattmeter and connect VHF-1 (-2) coaxial cable.				
(12)	Close these circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
<b>WJE 410</b>					
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/9
<b>WJE 401-405, 407-409, 411, 412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>					
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
<b>WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893</b>					
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(13)	Return aircraft to required configuration.				

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## VHF COMMUNICATION TRANSCEIVER - MAINTENANCE PRACTICES

### 1. General

- A. This Maintenance Practice provides Removal/Installation for the very high frequency (VHF) Communication Transceivers. The transceivers are located in the Electrical/Electronics compartment and are installed in the forward radio rack. Access to the transceivers is through the compartment lower door. Removal and installation procedures are typical of the transceivers.

### 2. Removal/Installation

- A. Remove VHF Communication Transceiver

**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 DC BUS**

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

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

B	8	B10-7	VHF COMM-1
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WJE 410

B	9	B10-7	VHF COMM-1
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#### **UPPER EPC, LEFT RADIO DC BUS**

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

WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883

G	16	B10-176	VHF COMM-3
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#### **UPPER EPC, RIGHT RADIO DC BUS**

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

WJE ALL

G	5	B10-44	VHF COMM-2
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- (2) Loosen hold-down nuts at lower front end of transceiver.  
 (3) Swing hold-down nuts down to clear transceiver.  
 (4) Carefully pull transceiver straight out of mount.  
 (5) If transceiver is being replaced: carefully package defective unit into container that originally contained new unit and identify as being defective.

- B. Install VHF Communication Transceiver

**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 DC BUS**

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

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

B	8	B10-7	VHF COMM-1
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(Continued)

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

- (2) Visually check transceiver connector and mounting rack receptacle for damage and foreign objects.
- (3) Place transceiver on mounting rack and carefully push transceiver straight to engage connectors.

**CAUTION:** DAMAGE TO CONNECTORS MAY OCCUR IF ENGAGEMENT BECOMES DIFFICULT BEFORE CONNECTORS ARE COMPLETELY ENGAGED AND EXTREME FORCE IS APPLIED. CHECK FOR FOREIGN OBJECTS, PIN ALIGNMENT, AND DAMAGE.

- (4) Press transceiver home until transceiver connectors are completely engaged.
- (5) Raise hold-down nuts, mate with transceiver hold-down lugs, and tighten securely.
- (6) 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>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
B	8	B10-7	VHF COMM-1
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

- (7) Check applicable transceiver operation using flight compartment VHF control and audio selector panels.

EFFECTIVITY  
WJE ALL

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- (8) Select several frequencies at VHF control panel and check for reception.
- (9) Press microphone push-to-talk button and communicate with a distant station. Communications should be clear and distinct.
- (10) Return aircraft to required configuration.

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## VHF FREQUENCY CONTROL PANEL - MAINTENANCE PRACTICES

### 1. General

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

- A. This maintenance practice provides removal/installation for the VHF frequency control panels. The control panels (three) are located on the aft pedestal and removal/installations are identical.

**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893**

- B. This maintenance practice provides removal/installation for the VHF frequency control panels. The control panels (two) are located on the aft pedestal and removal/installations are identical.

**WJE ALL**

### 2. Removal/Installation Frequency Control Panel

- A. Remove Frequency Control 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:

#### **CAPTS, CENTER PANEL & PEDESTAL CBP**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-310	PANEL WHITE INTEGRAL LTS - PEDESTAL
		B1-311	PANEL WHITE INTEGRAL LTS - PEDESTAL

#### **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
B	8	B10-7	VHF COMM-1

#### **WJE 410**

B	9	B10-7	VHF COMM-1
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**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

B	9	B10-22	VHF NAV-1
---	---	--------	-----------

#### **WJE 410**

B	10	B10-22	VHF NAV-1
---	----	--------	-----------

#### **UPPER EPC, LEFT RADIO AC BUS**

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

**WJE ALL**

D	14	B10-37	DME-1
---	----	--------	-------

#### **UPPER EPC, LEFT RADIO DC BUS**

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

**WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

G	16	B10-176	VHF COMM-3
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WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883 (Continued)

### UPPER EPC, RIGHT RADIO AC BUS

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

#### WJE ALL

D	2	B10-39	DME-2
---	---	--------	-------

### UPPER EPC, RIGHT RADIO DC BUS

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

G	5	B10-44	VHF COMM-2
G	7	B10-24	VHF NAV-2

- (2) Apply hand pressure on control panel face, unlock slot-head fasteners, and release hand pressure.
- (3) Slowly lift control panel from cavity and disconnect electrical connector.

#### B. Install Frequency Control 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:

### CAPTS, CENTER PANEL & PEDESTAL CBP

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

		B1-310	PANEL WHITE INTEGRAL LTS - PEDESTAL
		B1-311	PANEL WHITE INTEGRAL LTS - PEDESTAL

### OVERHEAD EMERGENCY DC BUS

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

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

B	8	B10-7	VHF COMM-1
---	---	-------	------------

#### WJE 410

B	9	B10-7	VHF COMM-1
---	---	-------	------------

### UPPER EPC, LEFT RADIO DC BUS

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

WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883

G	16	B10-176	VHF COMM-3
---	----	---------	------------

### UPPER EPC, RIGHT RADIO DC BUS

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

#### WJE ALL

G	5	B10-44	VHF COMM-2
---	---	--------	------------

- (2) Visually check control panel receptacle and mating connector for damage or foreign objects.
- (3) Connect electrical connector to control panel receptacle.
- (4) Position control panel into cavity.
- (5) Apply hand pressure to control panel face, and lock slot-head fasteners.

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WJE ALL

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- (6) Remove the safety tags and close these circuit breakers:

### CAPTS, CENTER PANEL & PEDESTAL CBP

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-310	PANEL WHITE INTEGRAL LTS - PEDESTAL
		B1-311	PANEL WHITE INTEGRAL LTS - PEDESTAL

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
B	8	B10-7	VHF COMM-1
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

**WJE 405, 407-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 877, 880, 881, 883, 884, 886, 887, 891-893**

- (7) Place TFR (transfer) switch located on frequency control panel to left-hand position.

**WJE 401-404, 406, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875, 876, 878, 879**

- (8) Place TFR (transfer) switch located on frequency control panel to left-hand position. Indicator light above readout window comes on.

**WJE ALL**

- (9) On associated audio control panel, place applicable volume control to mid-range position.  
 (10) Select several frequencies using left frequency control knobs on frequency control panel; reception should be free from distortion.

**WJE 405, 407-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 877, 880, 881, 883, 884, 886, 887, 891-893**

- (11) Place TFR (transfer) switch to right-hand position.

**WJE 401-404, 406, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875, 876, 878, 879**

- (12) Place TFR (transfer) switch to right-hand position. Indicator light above readout window comes on. Left light goes out.

**WJE ALL**

- (13) Select several frequencies using right frequency control knobs; reception should be free from distortion.

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**WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893**

- (14) Press and hold SQ/DISABLE switch in DISABLE position: background noise should increase.

**WJE 401-404, 412, 414**

- (15) Press and hold COMM TEST switch; background noise should increase.  
(16) Release COMM TEST switch; background noise should decrease.

**WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 881, 883, 884, 886, 887, 891-893**

- (17) Release squelch disable switch to SQ; background noise should decrease.

**WJE ALL**

- (18) Return airplane to required configuration.

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VHF BLADE ANTENNA - REMOVAL/INSTALLATION

### 1. General

A. This maintenance practice provides removal/installation procedures for the VHF blade antenna.

**WJE 406, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

B. The VHF blade antennas are located on the upper fuselage and on the lower forward and aft fuselage. Removal and installation procedures are typical of all installations except as noted.

**WJE 401-405, 407-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 880, 884, 886, 887, 891-893**

C. The VHF blade antennas are located on the upper fuselage and on the lower forward fuselage. Removal and installation procedures are typical of all installations except as noted.

**WJE ALL**

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following 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
Dust caps, electrical connector MS90376	
Corrosion Shield D-5035 DPM 5217	Zip Aerosol Products N. Hollywood, CA
Corrosion Shield MILL-C-16173 (Grade 4) DPM 667-1 Braycote 194	Air BP, Parsippany, NJ
Plastic Scraper DPM 6587	Commercial available.

### 3. Removal/Installation

A. Remove Applicable VHF Blade Antenna (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:

**OVERHEAD EMERGENCY DC BUS**

**Row   Col   Number   Name**

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

B      8      B10-7      VHF COMM-1

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WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 (Continued)

(Continued)

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

**CAUTION:** MAKE SURE THAT YOU ONLY USE APPROVED SCRAPERS ON THE AIRPLANE SKIN. SCRAPERS THAT ARE NOT APPROVED CAN MAKE SCRATCHES ON THE SKIN AND CAUSE FATIGUE CRACKS.

**CAUTION:** DO NOT USE METAL TOOLS TO REMOVE THE SEALANT. AN APPROVED TOOL WILL PREVENT DAMAGE TO THE SKIN OF THE AIRCRAFT.

- (2) Carefully cut sealant around the outer edge of antenna base with an approved plastic scrapper.

**CAUTION:** DO NOT BEND OR TWIST THE ANTENNA AS YOU REMOVE IT. THIS WILL PREVENT DAMAGE TO THE ANTENNA.

- (3) Remove antenna attaching screws.
  - (4) Remove antenna in a direction perpendicular to fuselage plane; antenna should pull away from mounting without excess force.
  - (5) Disconnect and cap coaxial cable and antenna receptacle.
- B. Install Applicable VHF Blade Antenna (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:

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
B	8	B10-7	VHF COMM-1
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 410 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883	G	16	B10-176 VHF COMM-3

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE ALL	G	5	B10-44 VHF COMM-2

- (2) Clean area of the antenna, rub plate, and fuselage surface. (COMMUNICATION / NAVIGATION ANTENNAS SEALING - MAINTENANCE PRACTICES, PAGEBLOCK 20-50-10/201)
- (3) Prepare the both sides of the rub plate surface for Radio Frequency (RF) bond. (ELECTRICAL BONDING - MAINTENANCE PRACTICES, SWPM 20-50-01)
- (4) Make sure that O-ring, furnished with antenna, is properly installed in groove around base of antenna coaxial connector.
- (5) On upper VHF antenna, apply faying surface seal  $1 \frac{3}{4} \pm \frac{1}{8}$  (44.45  $\pm$  3.2 mm) between the rub strip and the aircraft surface. (COMMUNICATION / NAVIGATION ANTENNAS SEALING - MAINTENANCE PRACTICES, PAGEBLOCK 20-50-10/201)
- (6) On lower VHF antenna, apply faying surface seal between the rub strip and the aircraft surface, 100% coverage. (COMMUNICATION / NAVIGATION ANTENNAS SEALING - MAINTENANCE PRACTICES, PAGEBLOCK 20-50-10/201)
- (7) Install VHF antenna and rub plate as follows: (Figure 201)
  - (a) On upper VHF antenna, drain hole at aft end of base shall be open. If necessary, insert a strip of polyethylene or similar material through drain hole until sealant cures, than remove the strip leaving drain hole open.
  - (b) Remove protective cap and check connector plug and receptacle for damage and unwanted material.
    - 1) Connect antenna coaxial cable connector.

**WARNING:** CORROSION PREVENTATIVE IS AN AGENT THAT IS FLAMMABLE AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN CORROSION PREVENTATIVE 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 CORROSION PREVENTATIVE IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

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WJE ALL

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### (WARNING PRECEDES)

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS 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.
- (c) Coat antenna receptacle and coaxial cable connector with spray coat of corrosion shield.
- (d) Place antenna and rub plate in mounting position and install mounting screws.  
(COMMUNICATION / NAVIGATION ANTENNAS SEALING - MAINTENANCE PRACTICES, PAGEBLOCK 20-50-10/201)
- 1) Torque the attachment screws.
    - a) Torque the attachment screws again 10 minutes after the initial torque.

**WARNING:** FAYING SURFACE SEALANT IS AN AGENT THAT IS FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN FAYING SURFACE SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET FAYING SURFACE SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** CORROSION INHIBITING NON-CURING COMPOUND IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN CORROSION INHIBITING NON-CURING COMPOUND IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET CORROSION INHIBITING NON-CURING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS 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.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**(WARNING PRECEDES)**

**CAUTION:** ONLY USE APPROVED SCRAPERS ON THE AIRPLANE SKIN. SCRAPERS THAT ARE NOT APPROVED CAN MAKE SCRATCHES ON THE SKIN, AND CAUSE FATIGUE CRACKS.

**CAUTION:** DO NOT USE ABRASIVES, WIRE BRUSHES, UNAPPROVED SCRAPERS, CHIPCHASERS, PICKS, SCREWDRIVERS, BLADES, OR OTHER SUCH DEVICES TO REMOVE CURED SEALANT. THIS WILL HELP PREVENT DAMAGE TO THE COMPONENT SURFACES AND FINISHES.

- (8) Remove excess sealant squeeze out with a clean cloth and approved scaper

**NOTE:** Squeeze out should be around edge of antenna base or cover plate and attachment screw heads.

- (9) Do a RF bond check of the VHF antenna. (ELECTRICAL BONDING - MAINTENANCE PRACTICES, SWPM 20-50-01)
- (10) Apply periphery (fillet) seal around antenna edge at fuselage skin. (COMMUNICATION / NAVIGATION ANTENNAS SEALING - MAINTENANCE PRACTICES, PAGEBLOCK 20-50-10/201)
- (11) 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>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
B	8	B10-7	VHF COMM-1
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

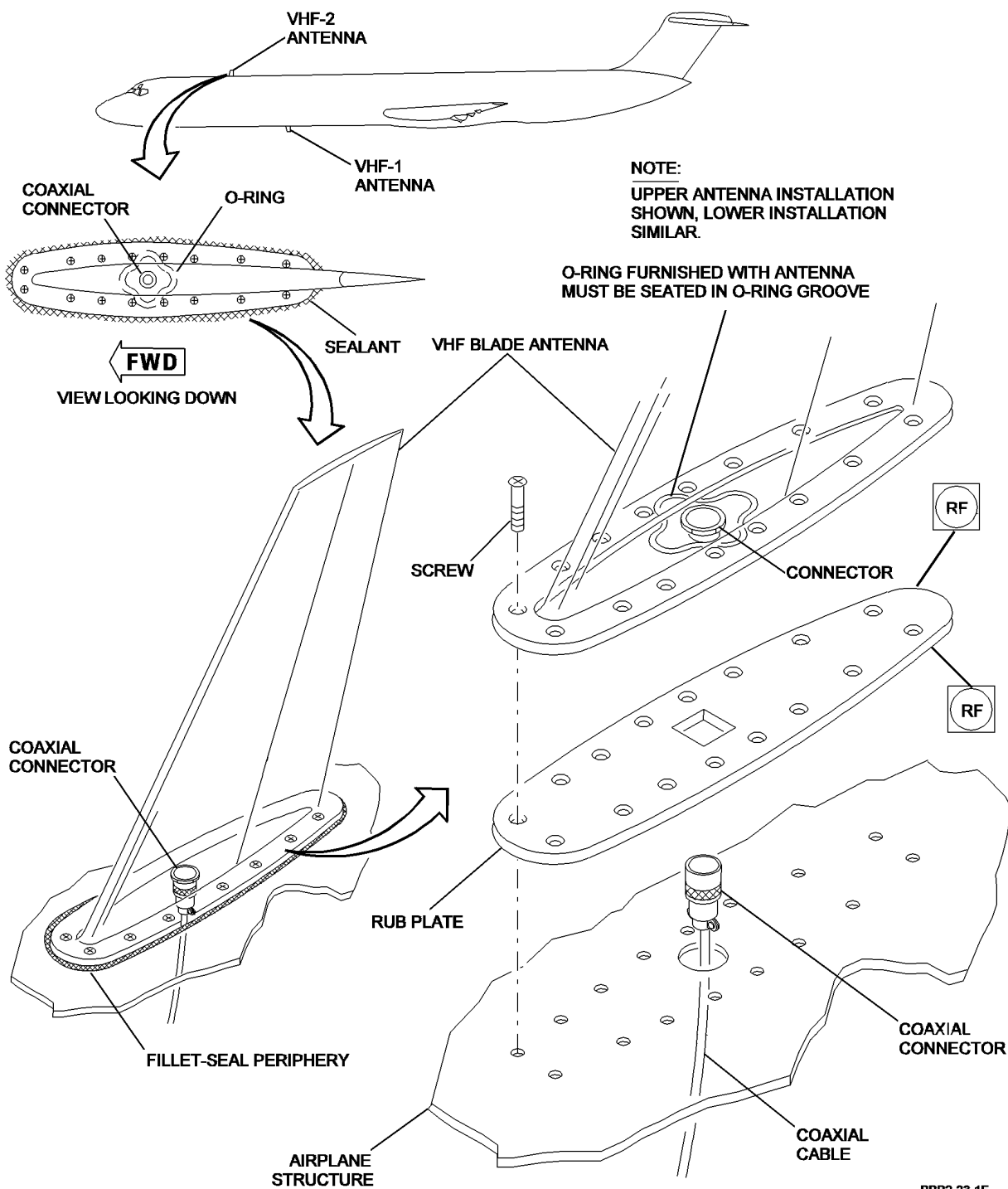
- (12) Perform VHF system adjustment/test. (PAGEBLOCK 23-20-00/201)
- (13) Return aircraft to required configuration.

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**VHF Blade Antenna -- Removal/Installation  
Figure 201/23-20-03-990-803 (Sheet 1 of 2)**

**EFFECTIVITY**

WJE 401-405, 407-412, 414-416, 418, 420, 422,  
424-427, 429, 861-864, 866, 868, 873, 874, 880, 884,  
886, 887, 891-893

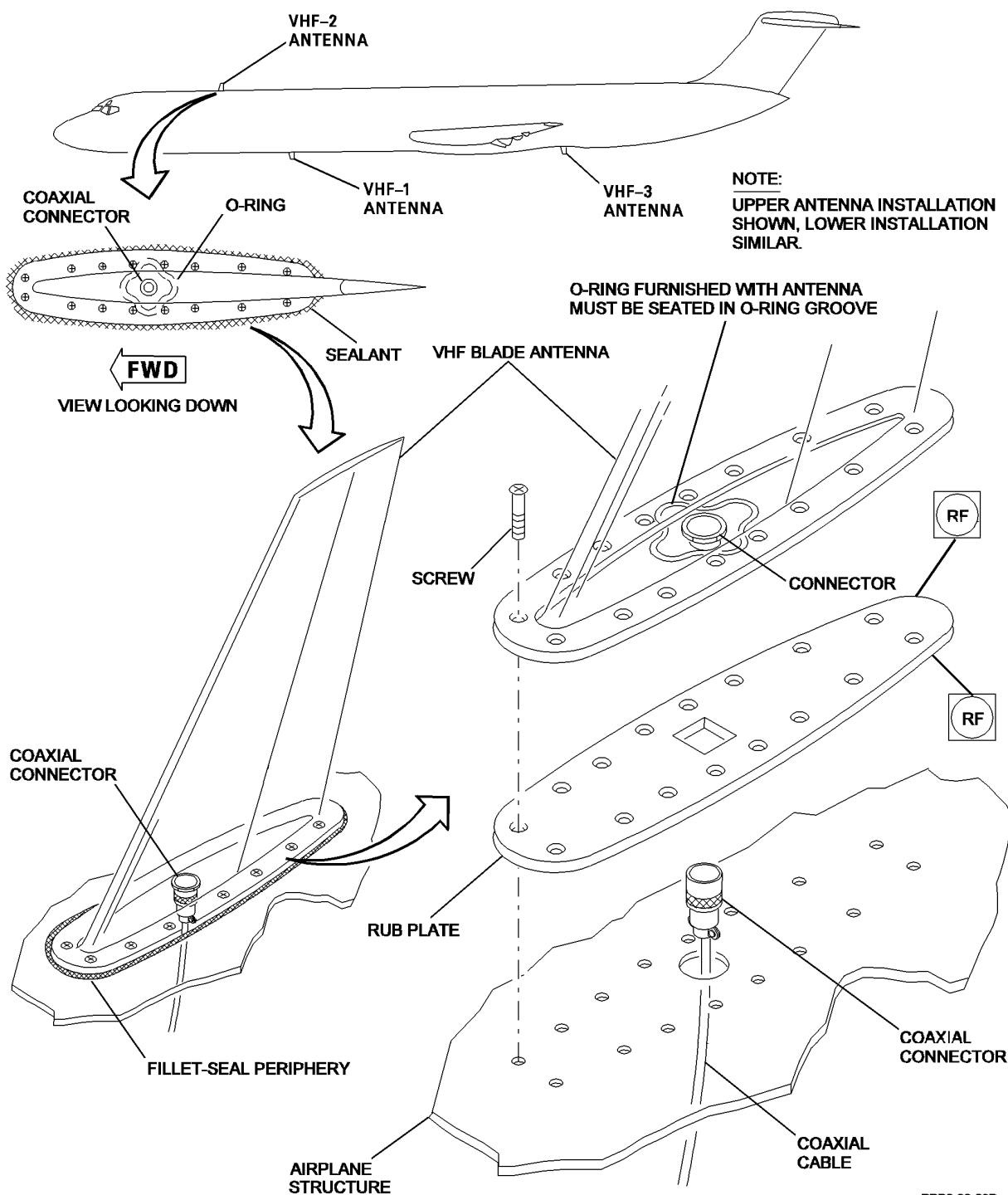
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**VHF Blade Antenna -- Removal/Installation  
Figure 201/23-20-03-990-803 (Sheet 2 of 2)**

EFFECTIVITY  
WJE 406, 417, 419, 421, 423, 865, 869, 871, 872,  
875-879, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### SELECTIVE CALLING (SELCAL) - DESCRIPTION AND OPERATION

#### 1. General

- A. The selective calling (SELCAL) system relieves the flight crew of continuously monitoring a company frequency by providing visual and aural indications that the flight is being called. The communication transceiver monitoring device, which functions as a decoder, enables ground stations equipped with tone code transmitting facilities to selectively call individual airplanes. The tone code signals consist of four preselected frequencies emitted in two pulses. The tones are detected by the receivers which are tuned to the ground station frequency, in all airplanes within radio range, and are routed to the decoder units. Only the decoder unit with the correct combination of tone frequencies selected will be actuated. The output of the decoder unit closes alarm circuits, indicating the individual airplane is being called. The SELCAL system consists of a SELCAL dual channel decoder, a SELCAL control panel, and the pilot-call channel of the central warning system (CAWS). The decoder interfaces with ACARS.

#### 2. SELCAL System Components

##### A. Description

- (1) SELCAL Dual Channel Decoder - the SELCAL dual channel decoder consists of a frame and housing assembly which contains two identical decoder chassis. Each decoder chassis is a transistorized module that incorporates an audio amplifier, a dc amplifier, 12 resonant-reed relays, 4 rotary switches, 4 display windows, and the decoder chassis output circuits. When actuated, two switched 28 VDC signals are available for actuating visual and aural SELCAL indicators: a closed circuit (continuous) output, and an interrupted circuit output. Once actuated, the outputs continue until reset by the flight crew. The rotary switches mounted on the front of each decoder chassis permit immediate selection of the four-letter SELCAL code assigned to the airplane. Letter indications which appear in the windows above the switch knobs indicate the selected code. The decoder is located in the forward right radio rack in the electrical/ electronics compartment. Electrical power for SELCAL-1 is supplied by the 28 VDC bus L. Electrical power for SELCAL-2 is supplied by the 28 VDC bus R.
- (2) Central Aural Warning - A pilot-call chime tone is developed in the central aural warning unit when initiated by either SELCAL interrupted circuit output. The chime will sound through captain's and first officer's CAWS speakers, located in their respective consoles, at a rate of approximately 1 Hz until SELCAL has been reset. The CAWS chime also is initiated by the attendant-pilot and mech-pilot call switches of the interphone call system.

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

- (3) SELCAL Control Panel - The SELCAL control panel contains the SELCAL-1 and SELCAL-2 visual indicator lights which incorporate PRESS TO RESET switches for the corresponding decoder channel. Light caps are of turn-to-dim, press-to-test (lamp) type. The lights are connected to the closed circuit outputs (continuous) of the decoder. Transceiver SELCAL audio is connected through the control panel to decoder inputs: VHF-1 to SELCAL-1; VHF-2 to SELCAL-2. The control panel is located in the flight compartment on the pedestal.

#### **WJE 412, 414**

- (4) SELCAL Control Panel - The SELCAL control panel contains the SELCAL-1 and SELCAL-2 indicator lights, which incorporate PRESS TO RESET switches for the respective decoder channel. Light caps are of turn-to-dim, press-to-test (lamp) type. The lights are connected to the closed circuit (continuous) outputs of the decoder. Transceiver audio is connected through the control panel to decoder inputs: VHF-1 to SELCAL-1; VHF-2 to SELCAL-2. The control panel is located on the pedestal in the flight compartment. On aircraft 401-402, the transceiver audio is connected through the control panel to decoder inputs: VHF-1 and HF-1 to SELCAL-1; VHF-2 to SELCAL-2.

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### WJE 407, 408, 411, 880

- (5) SELCAL Control Panel - The SELCAL control panel contains the SELCAL-1 and SELCAL-2 visual indicator lights which incorporate PRESS TO RESET switches for the corresponding decoder channel. Light caps are of turn-to-dim, press-to-test (lamp) type. The lights are connected to the closed circuit outputs (continuous) of the decoder. Transceiver SELCAL audio is connected through the control panel to decoder inputs: VHF-1 and HF-1 to SELCAL-1; VHF-2 and HF-2 to SELCAL-2. The control panel is located in the flight compartment on the pedestal.

### WJE 875-879

- (6) SELCAL Control Panel - The SELCAL control panel contains the SELCAL-1 and SELCAL-2 visual indicator lights which incorporate PRESS TO RESET switches for the corresponding decoder channel. Light caps are of turn-to-dim, press-to-test (lamp) type. The lights are connected to the closed circuit outputs (continuous) of the decoder. Transceiver SELCAL audio is connected through the control panel to decoder inputs: VHF-1 to SELCAL-1; VHF-2 and VHF-3 to SELCAL-2. The control panel is located in the flight compartment on the pedestal.

### WJE 401-404, 410, 412, 414, 886, 887

- (7) SELCAL Control Panel - The SELCAL control panel contains the SELCAL-1 and SELCAL-2 indicator lights, which incorporate PRESS TO RESET switches for the respective decoder channel. Light caps are of turn-to-dim, press-to-test (lamp) type. The lights are connected to the closed circuit (continuous) outputs of the decoder. Transceiver audio is connected through the control panel to decoder inputs: VHF-1 and HF-1 to SELCAL-1; VHF-2 to SELCAL-2. The control panel is located on the pedestal in the flight compartment.

### WJE 406

- (8) SELCAL Control Panel - The SELCAL control panel contains the SELCAL-1 and SELCAL-2 visual indicator lights which incorporate PRESS TO RESET switches for the corresponding decoder channel. Light caps are of turn-to-dim, press-to-test (lamp) type. The lights are connected to the closed circuit outputs (continuous) of the decoder. Transceiver SELCAL audio is connected through the control panel to decoder inputs: VHF-1 to SELCAL-1; VHF-2 and VHF-3 to SELCAL-2. The control panel is located in the flight compartment on the pedestal.

### WJE ALL

#### B. Operation

- (1) SELCAL decoder system operation is continuous, when power is applied to the electrical buses and the applicable SELCAL circuit breaker is closed. The ground station radio operator selects the code of a specific airplane and transmits a tone-coded signal on the required frequency. The tone-coded signal reaches all airplanes within radio range and is applied to the transceivers. The transceivers tuned to the transmitted frequency detect the tone-coded signal and the signal is applied through the SELCAL control panel to the SELCAL decoder audio amplifier. The audio amplifier applies the tone-coded signal to the resonant-reed relay coils. When the proper tone code is applied to the coil, the reed vibrates at that frequency. The amplitude of the vibration builds up rapidly and reaches a condition where a contact on the reed intermittently touches a fixed contact. If the signals are of the proper frequencies, sequence, amplitude, and duration, the circuit acts as a closed switch and applies DC voltage to the switching network. The switching network produces DC output voltages, both continuous and interrupted, at sufficient power to operate the aural and visual indicators. Either SELCAL channel is reset, after having been actuated by pressing the lighted SELCAL indicator on the control panel.

#### C. To Operate System

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WJE ALL

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AIRCRAFT MAINTENANCE MANUAL**

- (1) Set the desired communication transceiver frequency selectors to frequency of company or air traffic control channel.

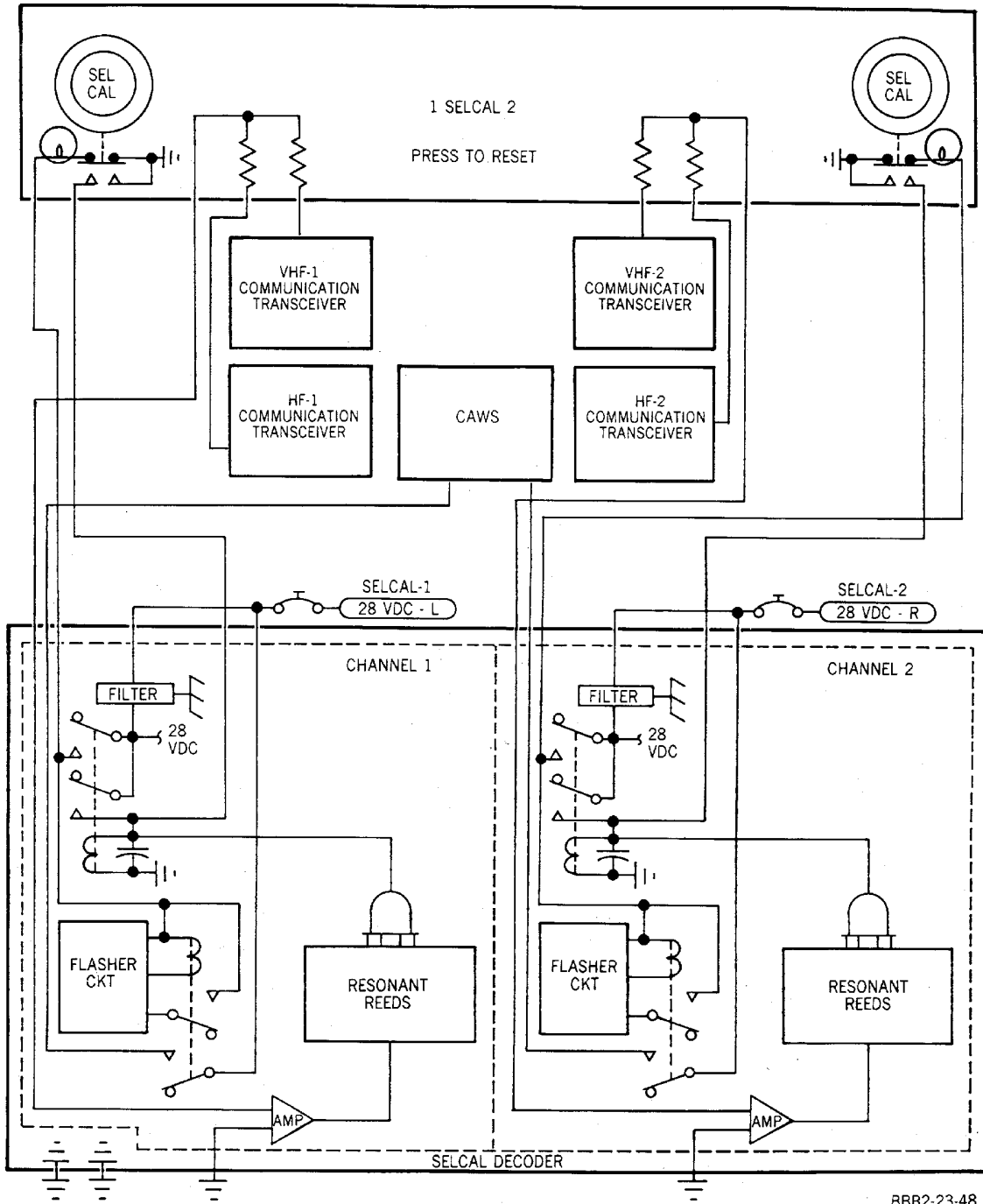
EFFECTIVITY  
WJE ALL

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AIRCRAFT MAINTENANCE MANUAL**



BBB2-23-48

**SELCAL System -- Simplified Schematic**  
Figure 1/23-21-00-990-801 (Sheet 1 of 4)

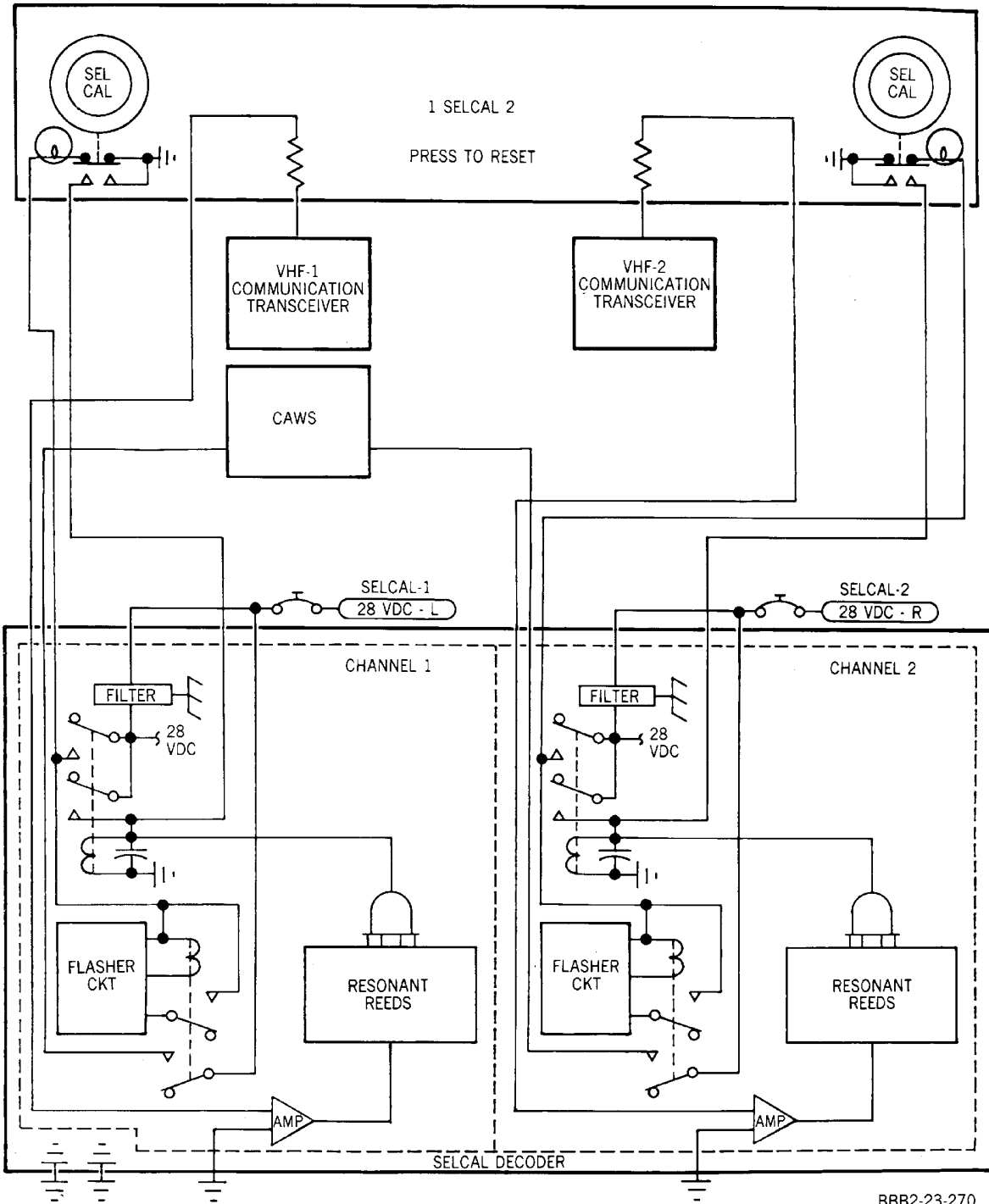
EFFECTIVITY  
WJE 407, 408, 411, 880

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**SELCAL System -- Simplified Schematic**  
Figure 1/23-21-00-990-801 (Sheet 2 of 4)

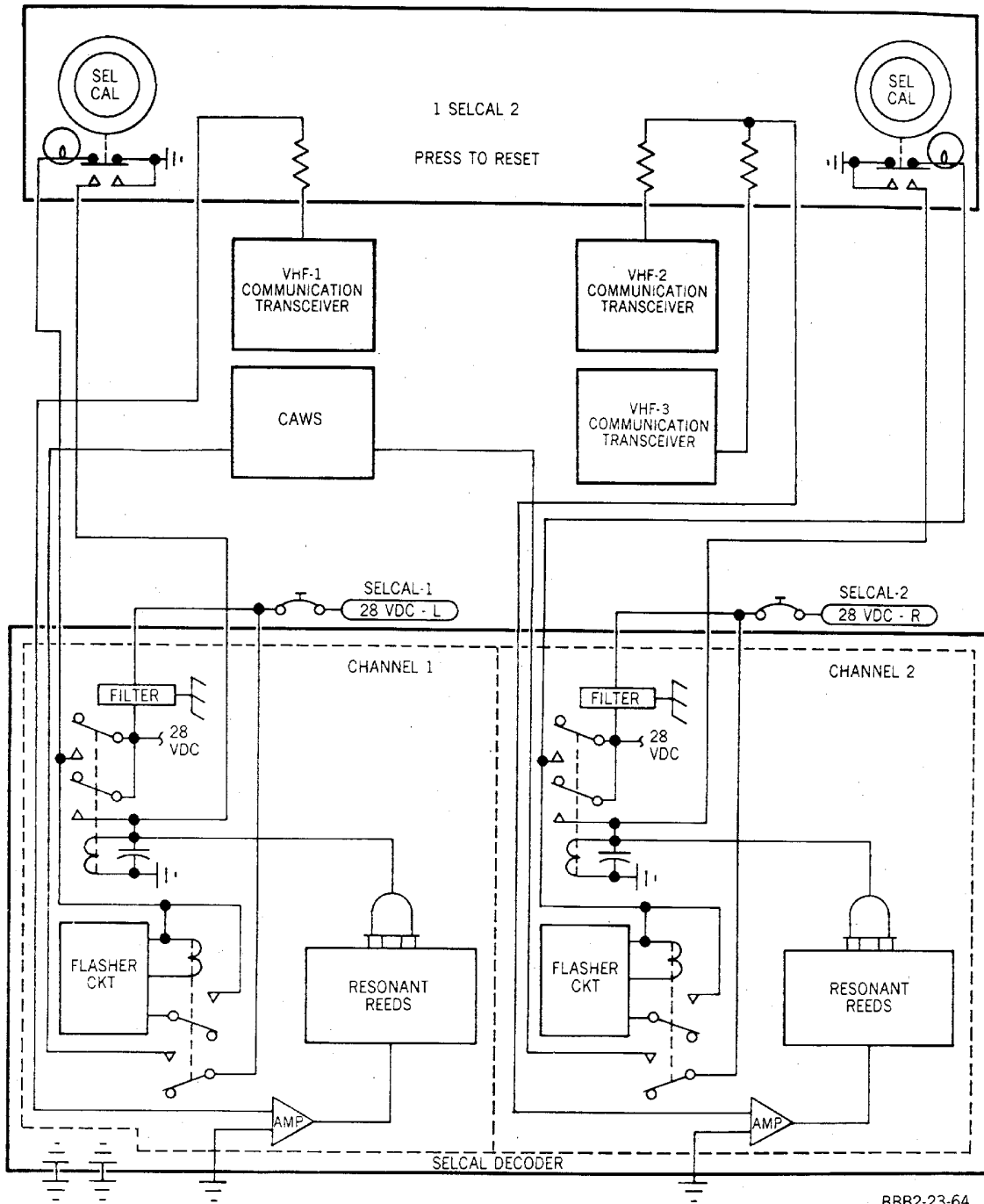
EFFECTIVITY  
WJE 405, 409, 415-427, 429, 861-866, 868, 869,  
871-874, 881, 883, 884, 891-893

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BBB2-23-64

SELCAL System -- Simplified Schematic  
Figure 1/23-21-00-990-801 (Sheet 3 of 4)

EFFECTIVITY  
WJE 406, 875-879

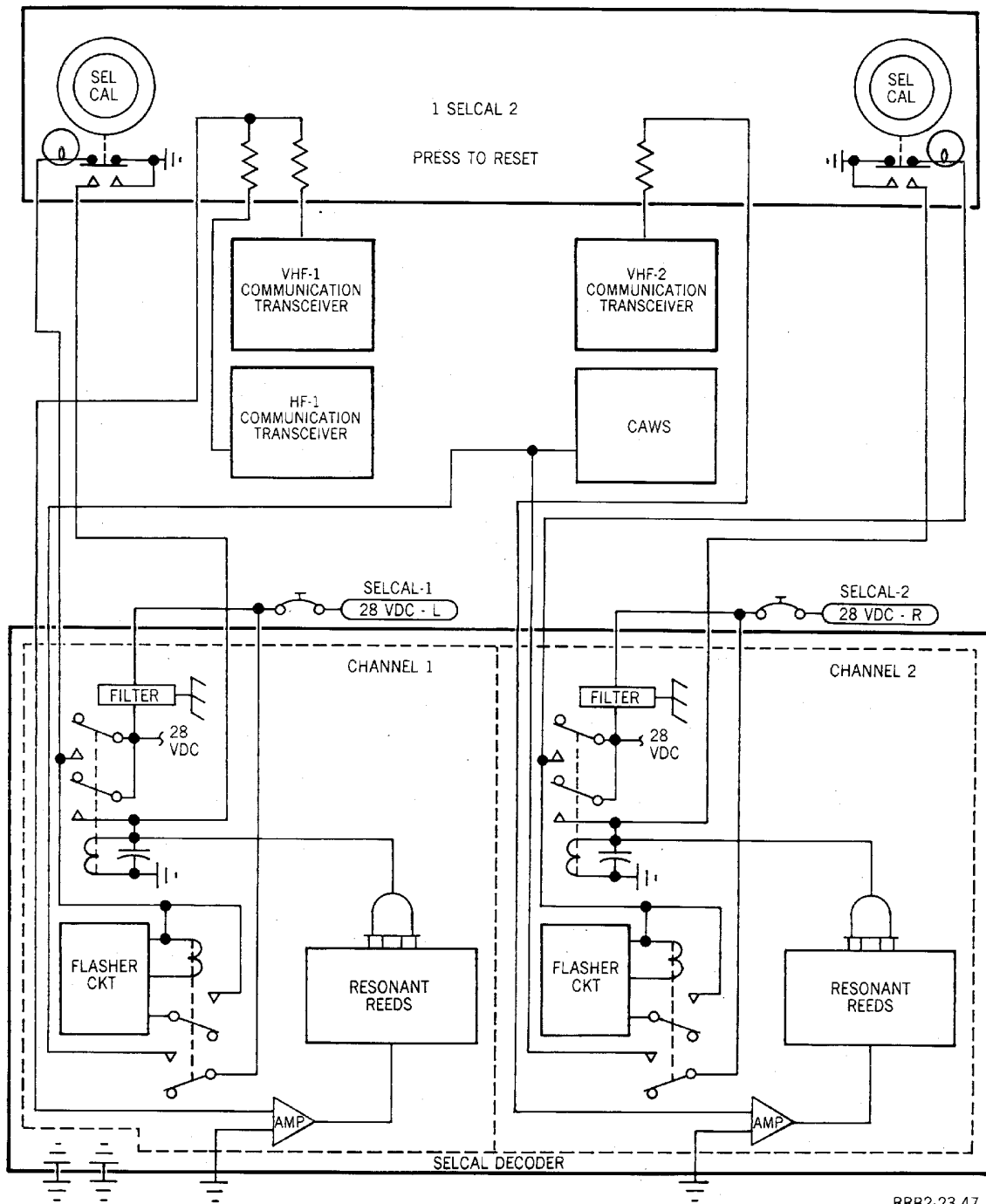
23-21-00

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AIRCRAFT MAINTENANCE MANUAL**



BBB2-23-47

**SELCAL System -- Simplified Schematic**  
Figure 1/23-21-00-990-801 (Sheet 4 of 4)

EFFECTIVITY  
WJE 401-404, 410, 412, 414, 886, 887

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## SELECTIVE CALLING (SELCAL) - TROUBLE SHOOTING

### 1. General

- A. Trouble Shooting procedures provided in this section are basic checks for isolating and correcting a faulty SELCAL system in the aircraft.
- B. The basic causes of a faulty system operation are generally: faulty aircraft wiring or faulty line replaceable units (LRUs).
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.
- D. The major components of the SELCAL system are the control panel and the SELCAL DECODER. The system interfaces with the VHF and HF systems and CAWS. In trouble Shooting, some checks may have to be made in components and wiring of those systems.
- E. The SELCAL system components are located as follows:

**Table 101 SELCAL System Components**

Component	Location
Control Panel	Flight Compartment Pedestal
Decoder	Radio Rack, Electrical/ Electronics Compartment

SELCAL Circuit Breakers

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

#### **UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>			
G	1	B10-114	SELCAL-2

**WJE ALL**

### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used in place of the following listed item.

**Table 102**

Name and Number	Manufacturer
Multimeter, digital, Danameter 2000A	Dana Instruments, Inc.
OR	
Multimeter 630A	Triplett

### 3. Trouble Shooting SELCAL System

- 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. LRUs are SELCAL decoder, SELCAL control panel, and communications transceivers.

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**Table 103**

Procedure		Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Check for proper grounds at LRUs. 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 LRUs.
(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 a continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.
(4)	Replace suspected faulty LRUs or component with a known operational unit.	Replace faulty LRUs or components.

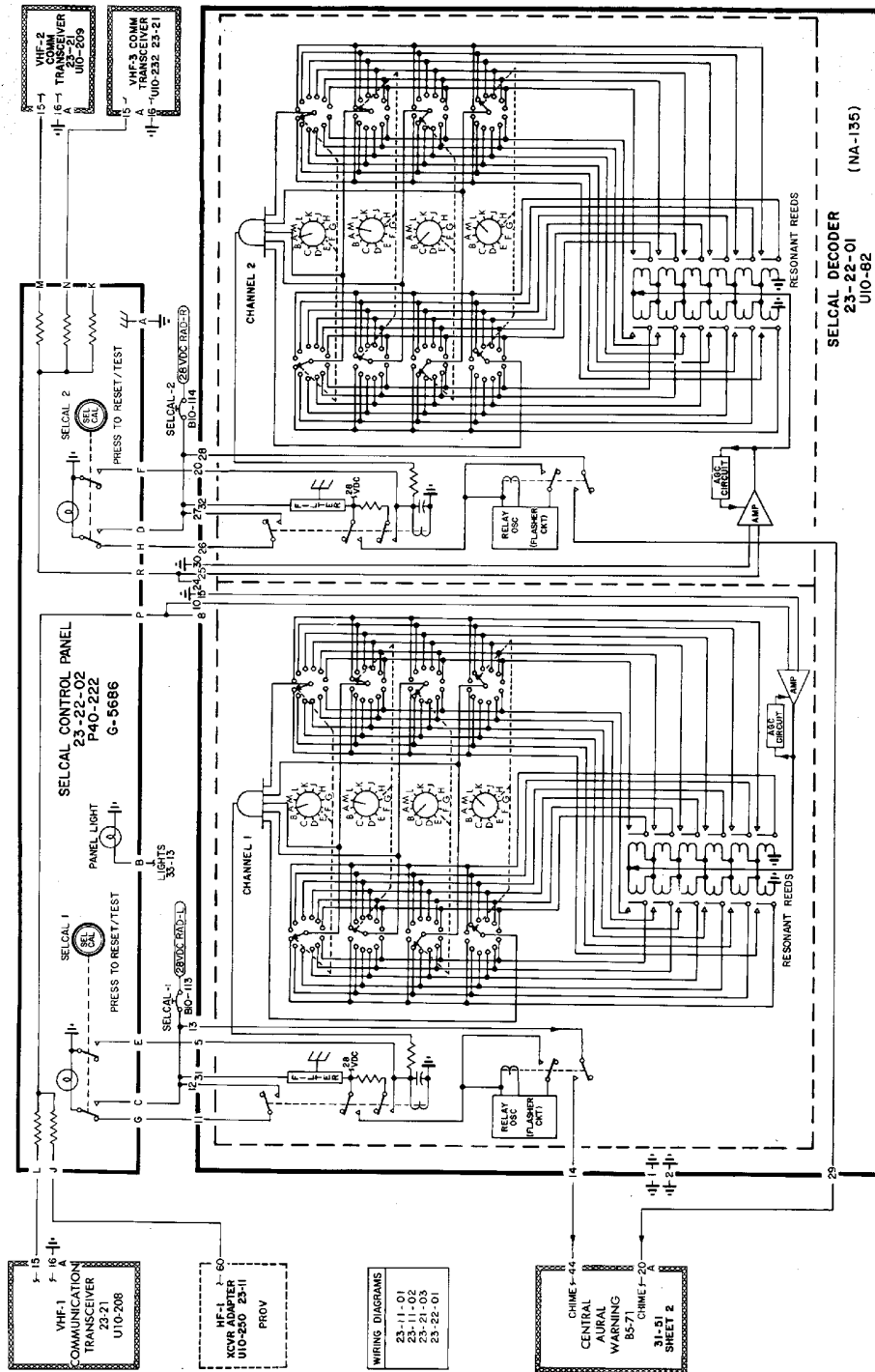
EFFECTIVITY  
WJE ALL

**23-21-00**

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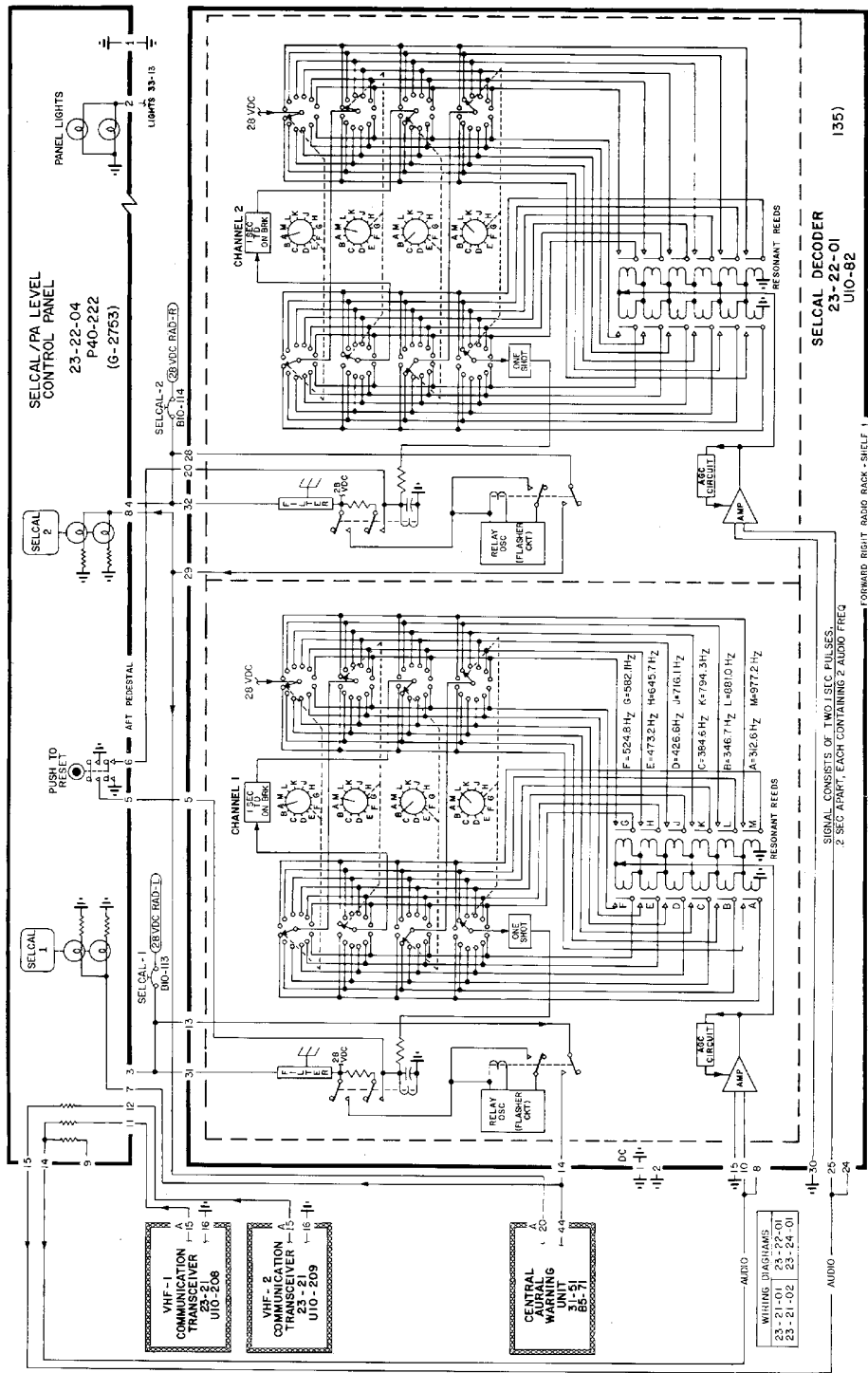
FORWARD RIGHT RADIO RACK-SHELF 1  
MDC PROPRIETARY  
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
BBB2.23-351

**Selcal System -- Schematic**  
Figure 101/23-21-00-990-804 (Sheet 1 of 5)

EFFECTIVITY  
WJE 875-879

23-21-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



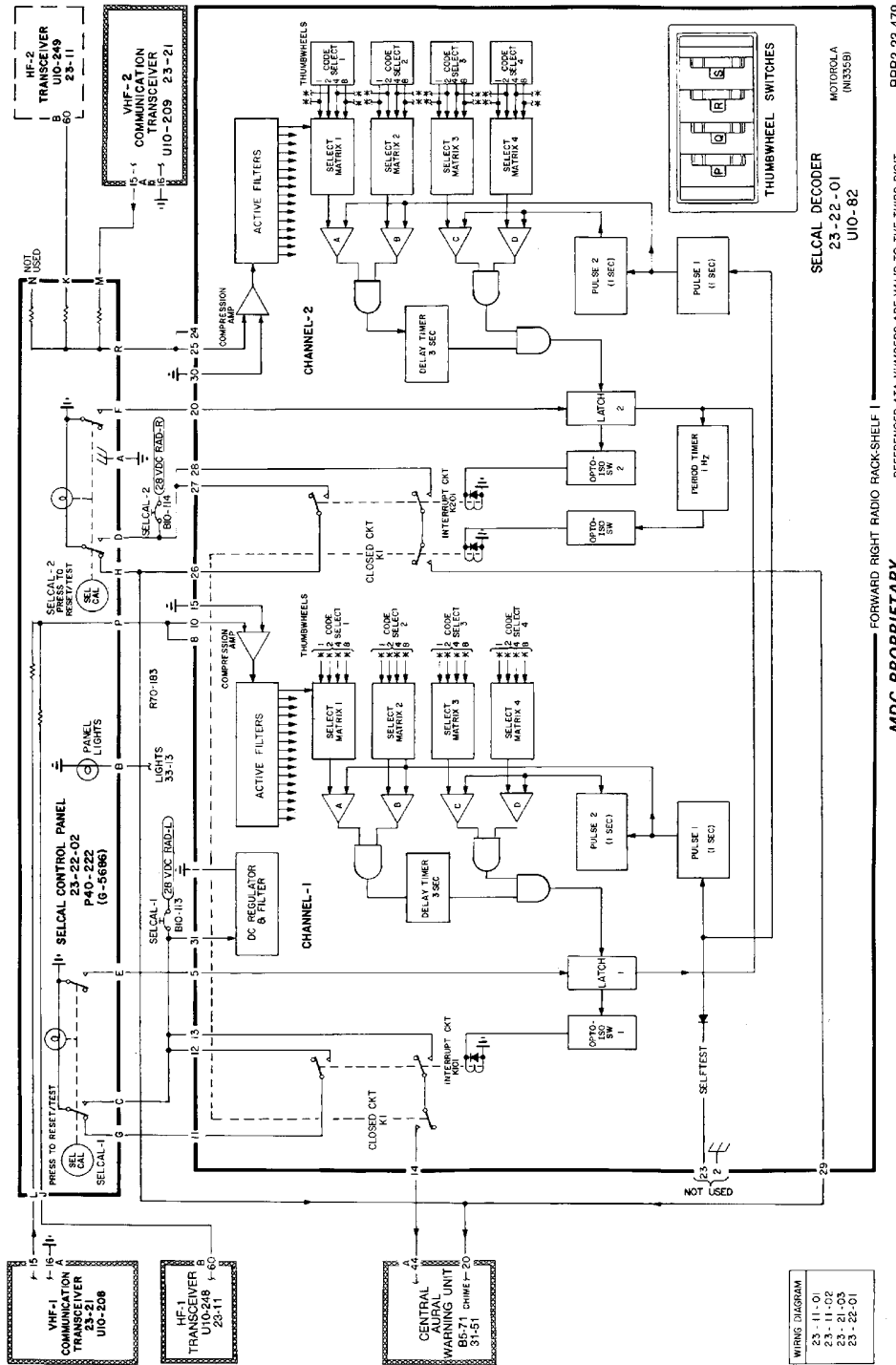
FORWARD RIGHT RADIO BASK - SHELF 1 REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
MDC PROPRIETARY

Selcal System -- Schematic  
Figure 101/23-21-00-990-804 (Sheet 2 of 5)

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

23-21-00

## MD-80 AIRCRAFT MAINTENANCE MANUAL

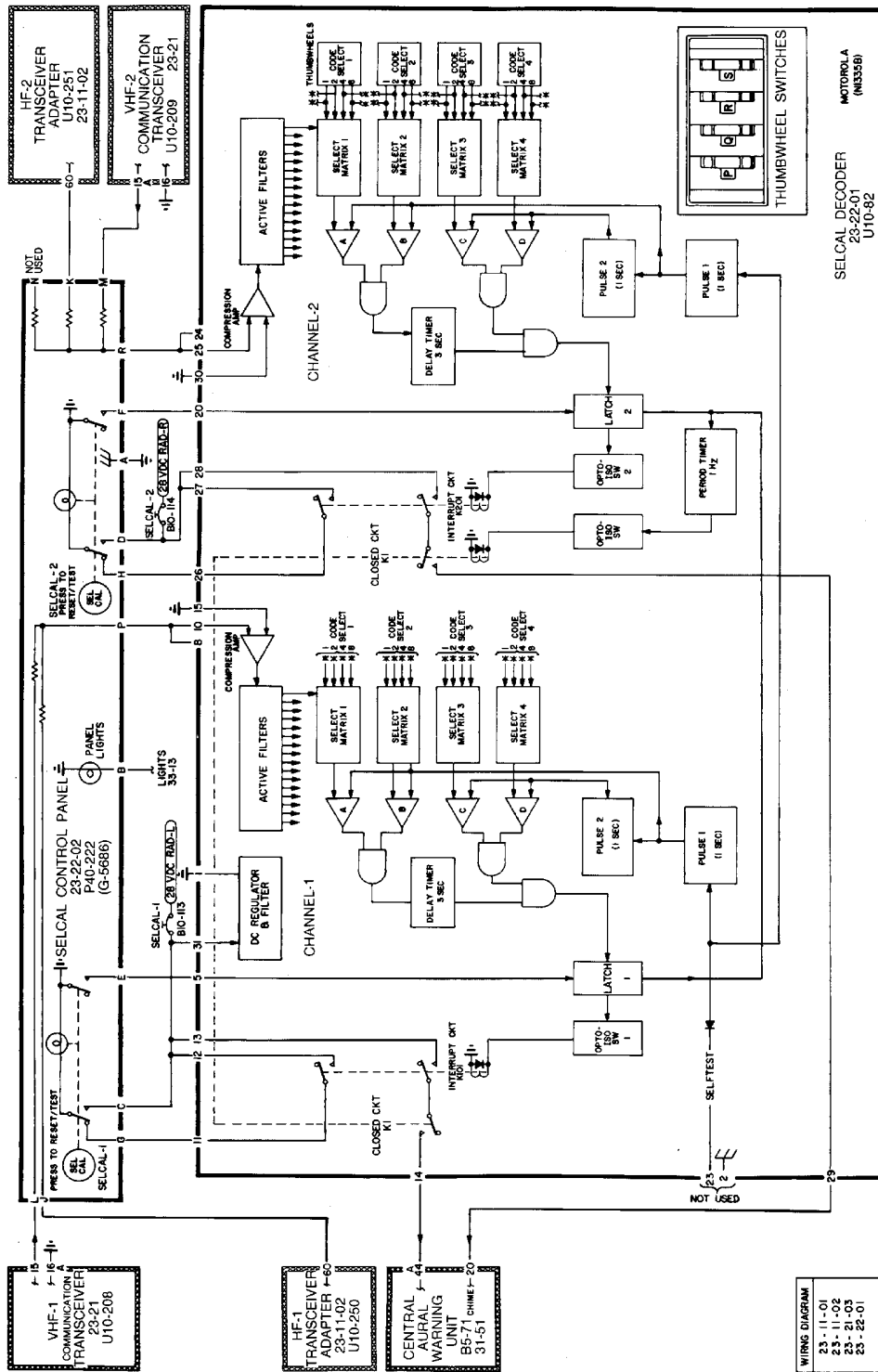


**Selcal System -- Schematic**  
Figure 101/23-21-00-990-804 (Sheet 3 of 5)

EFFECTIVITY  
WJE 401-404, 412, 414, 886, 887

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AIRCRAFT MAINTENANCE MANUAL



BBB5-23-502

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

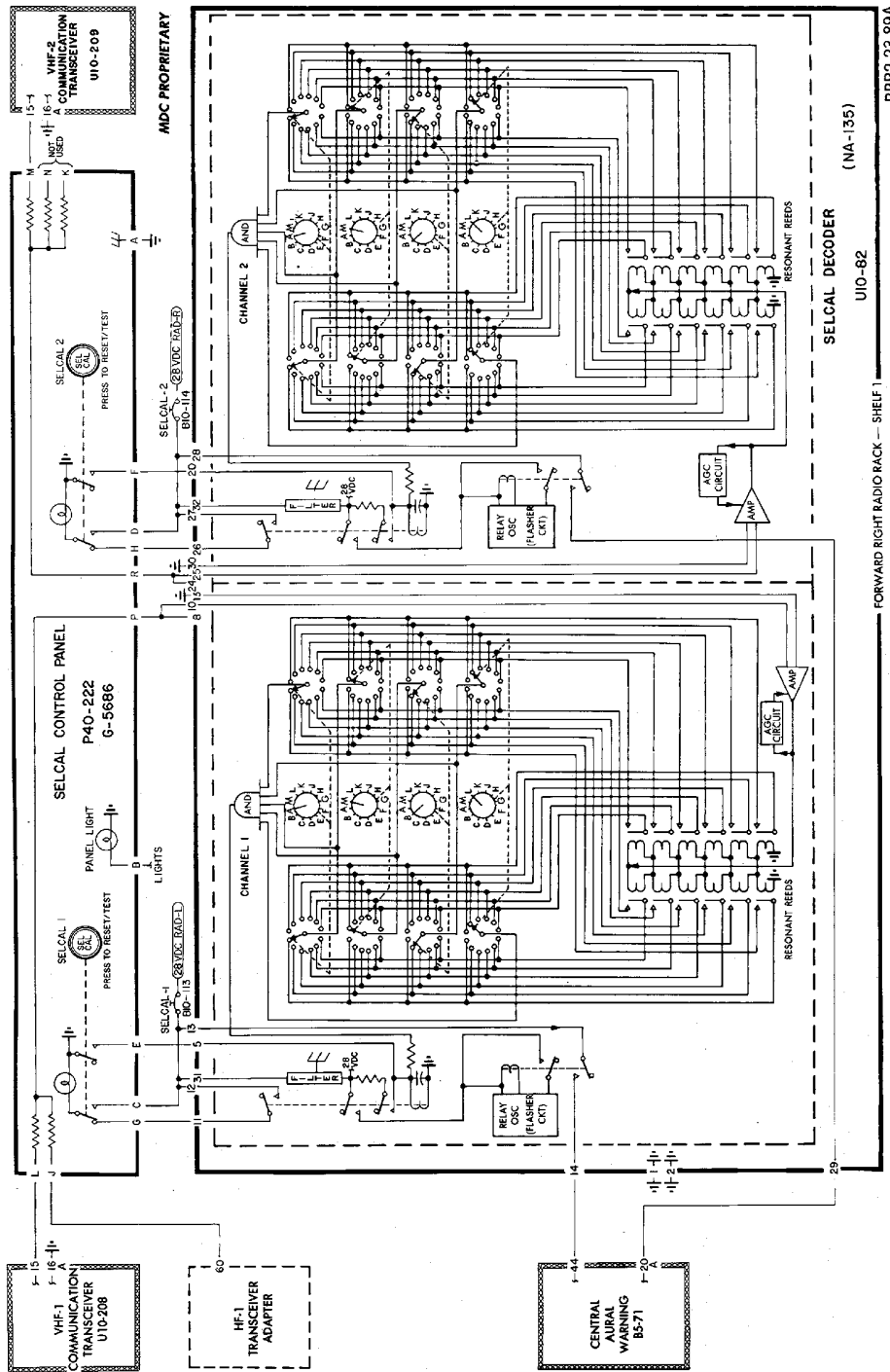
Selcal System -- Schematic  
Figure 101/23-21-00-990-804 (Sheet 4 of 5)

EFFECTIVITY  
WJE 873, 874, 892

23-21-00

TP-80MM-WJE

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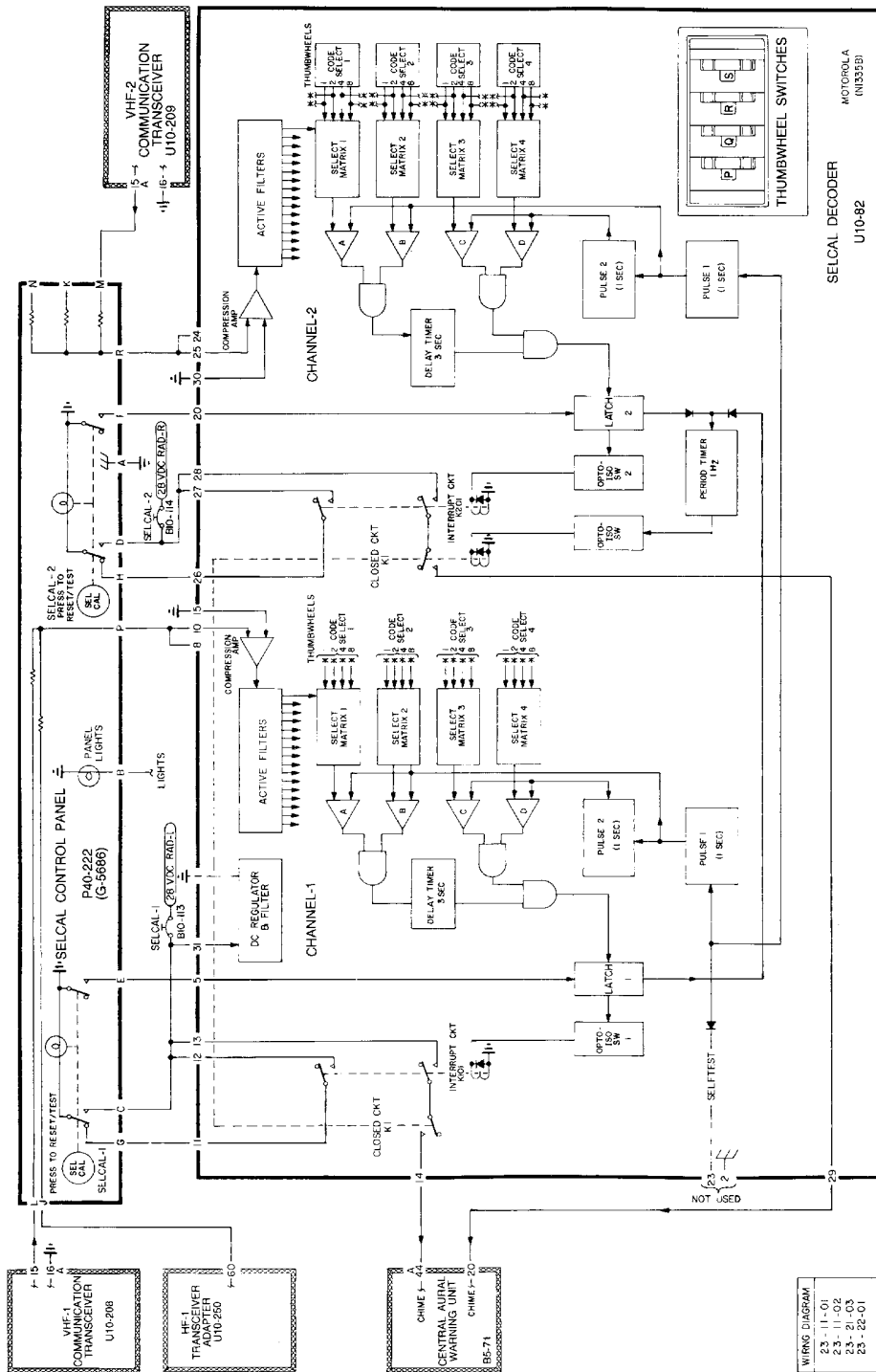
Selcal System -- Schematic  
Figure 101/23-21-00-990-804 (Sheet 5 of 5)

EFFECTIVITY  
WJE 880

23-21-00



# MD-80 AIRCRAFT MAINTENANCE MANUAL



FORWARD RIGHT RADIO RACK-SHELF  
MDC PROPRIETARY  
BBB2-23-501A

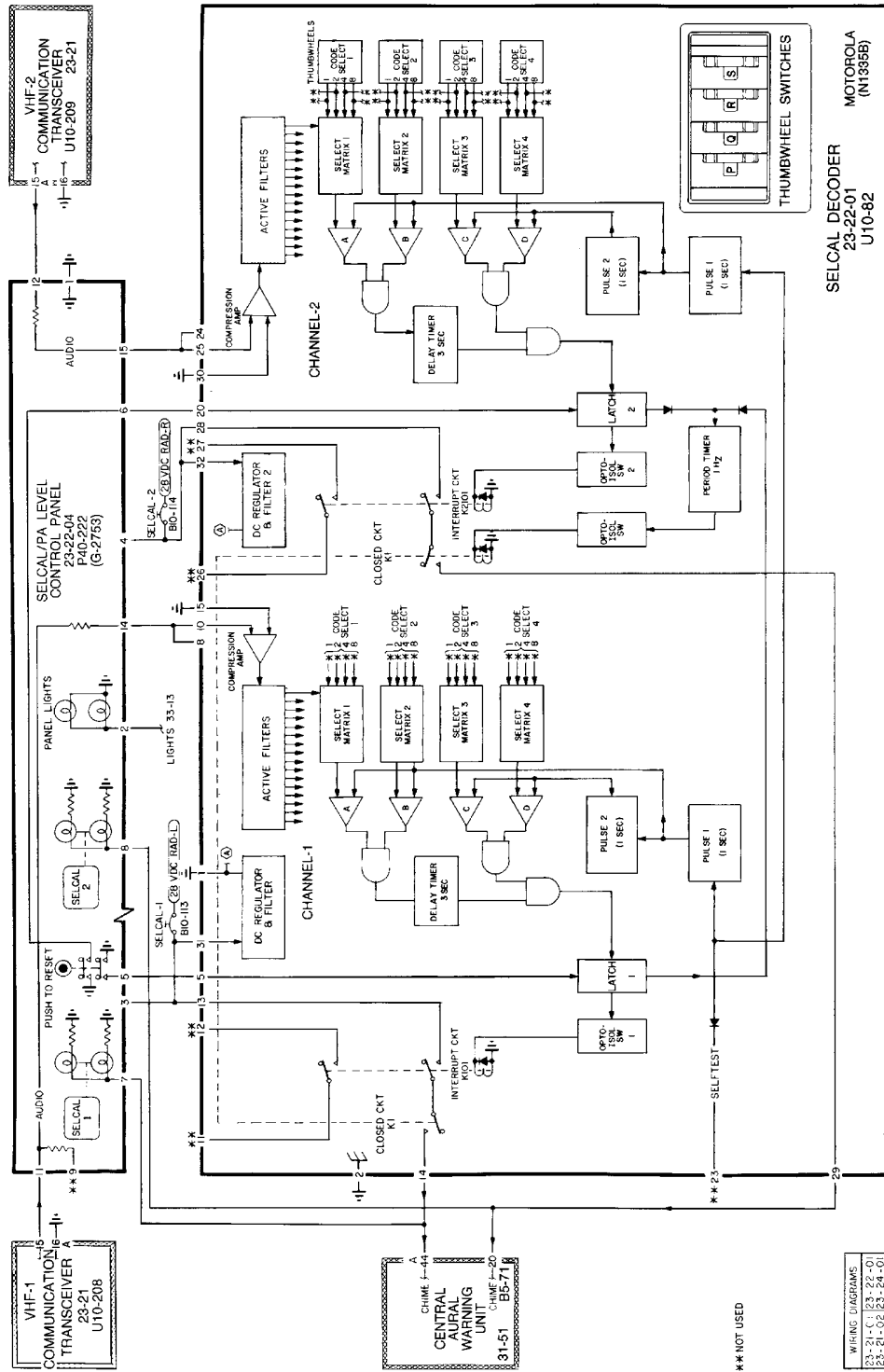
Selcal System -- Schematic  
Figure 102/23-21-00-990-805 (Sheet 1 of 2)

WIRING DIAGRAM  
23-11-01  
23-11-02  
23-20-03  
23-20-01

EFFECTIVITY  
WJE 407, 408, 411

23-21-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Selcal System -- Schematic  
Figure 102/23-21-00-990-805 (Sheet 2 of 2)

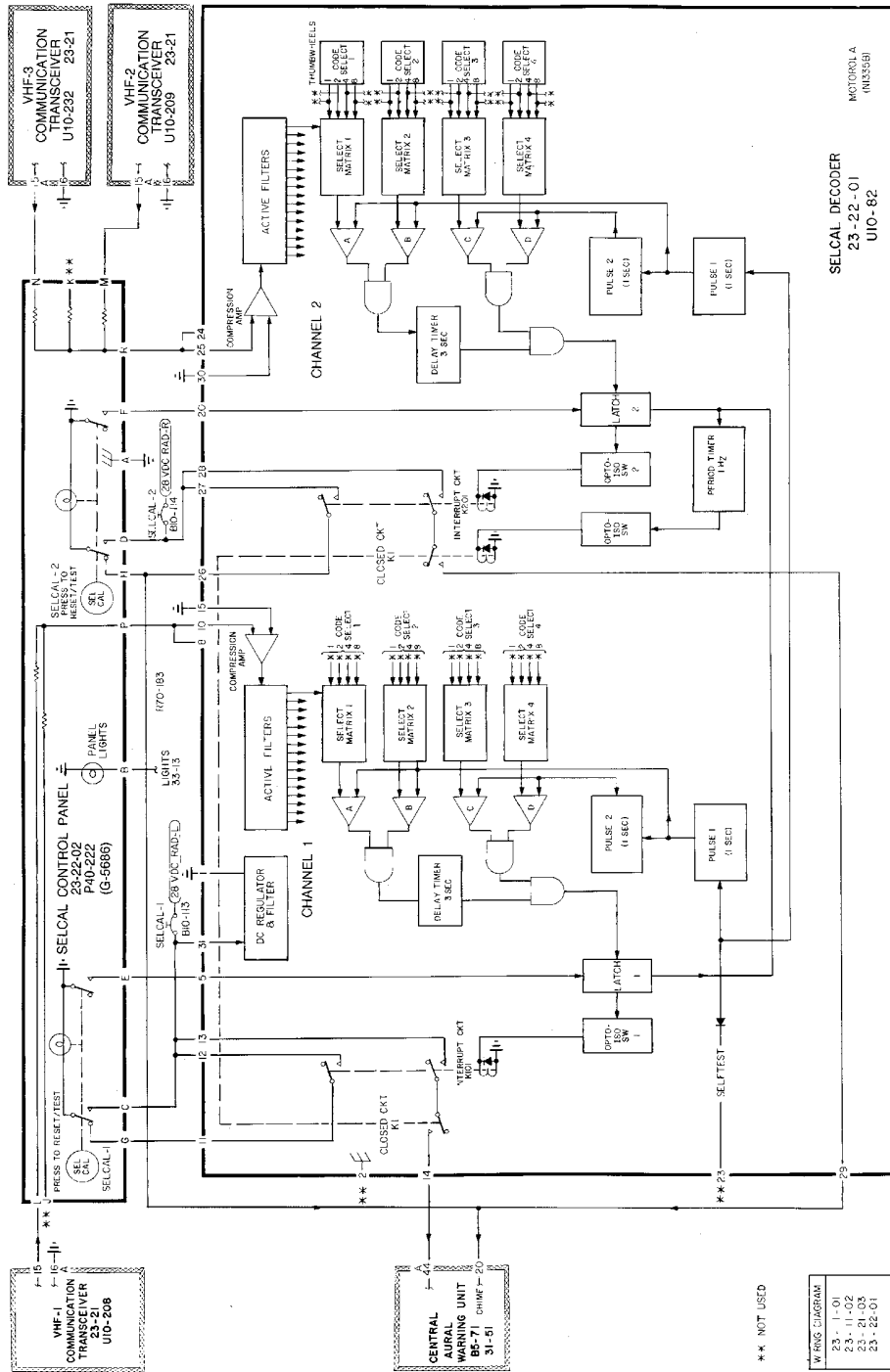
EFFECTIVITY  
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

23-21-00

TP-80MM-WJE

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Selcal System -- Schematic  
Figure 103/23-21-00-990-806

EFFECTIVITY  
WJE 406

TP-80MM-WJE

23-21-00

BBB2-23-546

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT

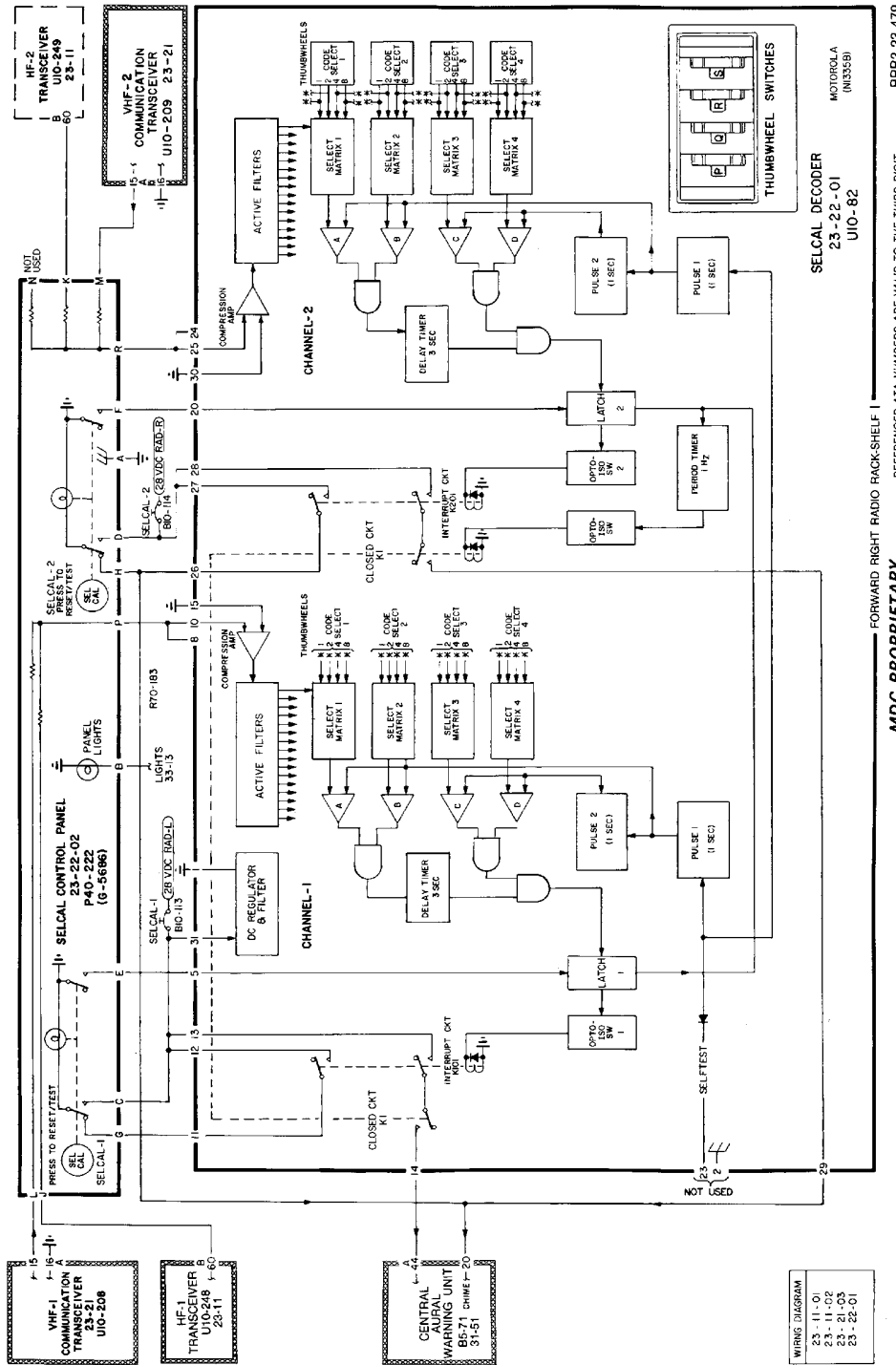
MDC PROPRIETARY

UPWARD RIGHT RADIO BACK-SHIFT

Wiring Diagram  
23-11-01  
23-11-02  
23-21-03  
23-22-01

\*\* NOT USED

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Selcal System -- Schematic  
Figure 104/23-21-00-990-807

EFFECTIVITY  
WJE 410

TP-80MM-WJE

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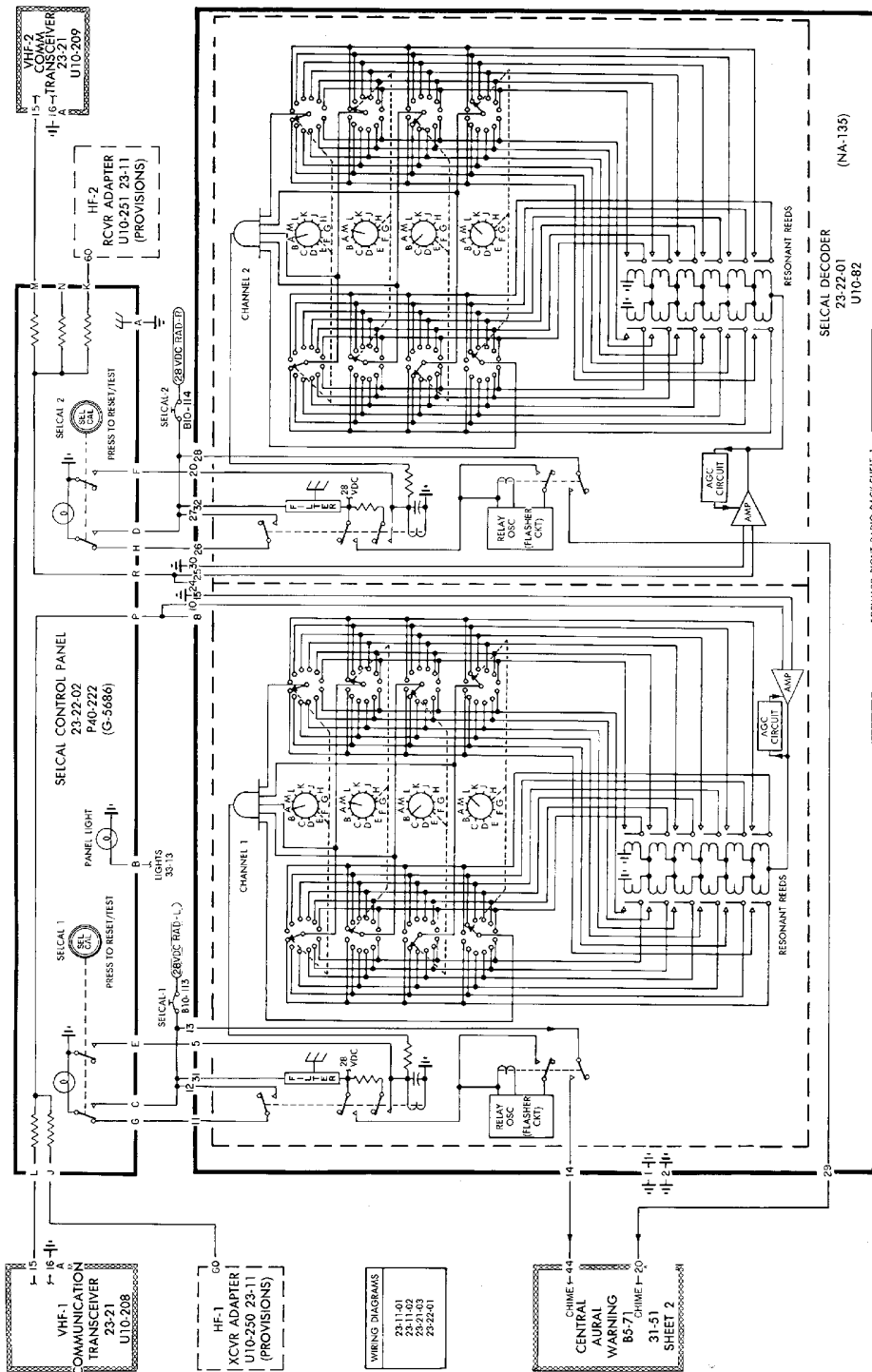
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FORWARD RIGHT RADIO RACK-SHELF 1  
MDC PROPRIETARY  
SELCAL DECODER  
23-22-01  
U10-82  
MOTOROLA  
(M3359)  
BB62-23-479  
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

# MD-80 AIRCRAFT MAINTENANCE MANUAL



FORWARD RIGHT RADIO BACKSHEET 1 REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT. B852-23-387

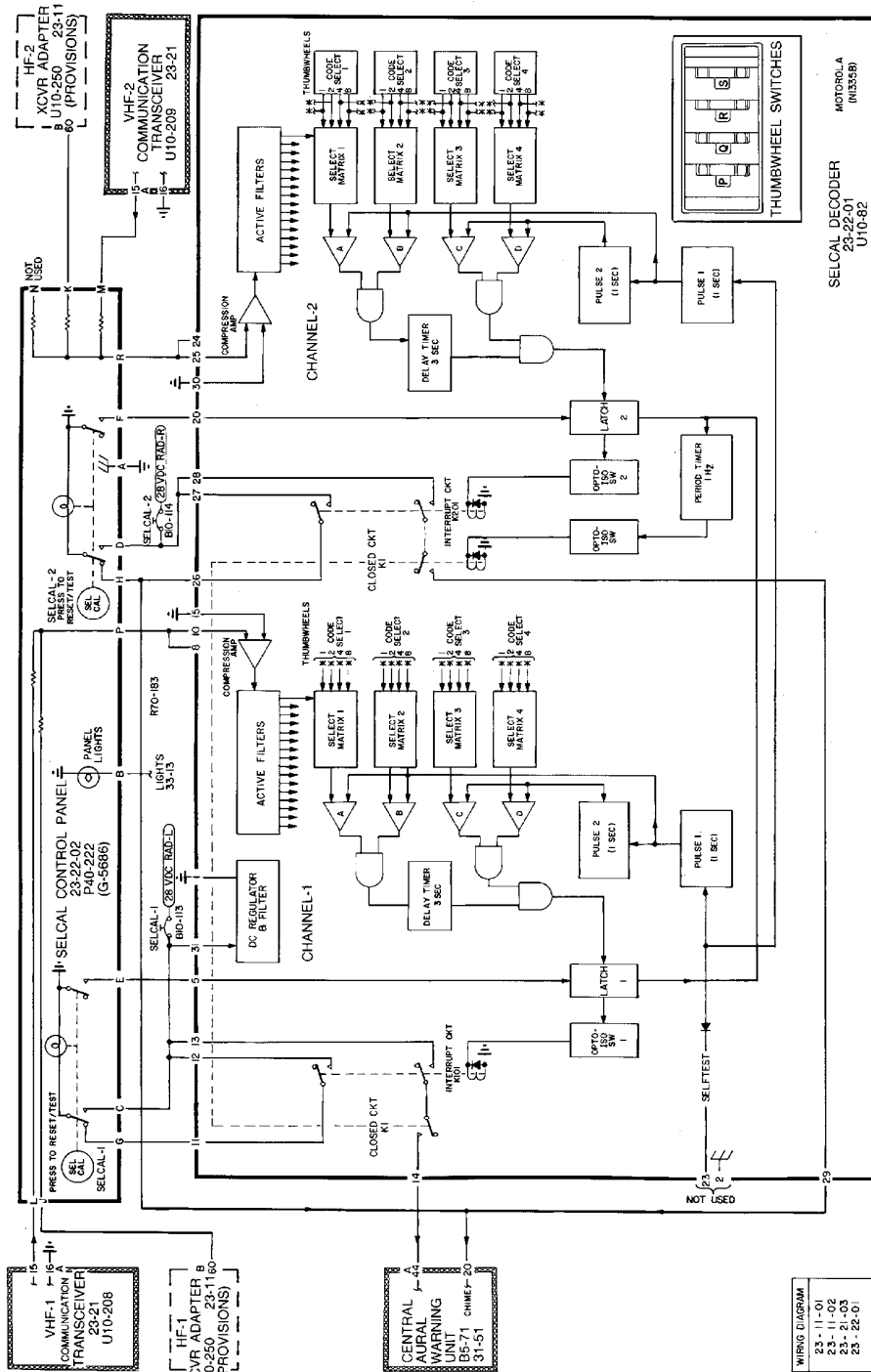
**MDC PROPRIETARY**

Selcal System -- Schematic  
Figure 105/23-21-00-990-808

EFFECTIVITY  
WJE 884

**23-21-00**

## MD-80 AIRCRAFT MAINTENANCE MANUAL



**Selcal System -- Schematic  
Figure 106/23-21-00-990-809**

EFFECTIVITY  
WJE 405, 409, 881, 883

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FORWARD RIGHT RADIO RACK-SHELF  
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BBB2-23-504

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### SELECTIVE CALLING (SELCAL) - MAINTENANCE PRACTICES

#### 1. General

- A. The selective calling system (SELCAL) permits ground stations equipped with tone transmitting equipment to call individual aircraft by transmitting two pairs of audio tones. The call will key only a decoder unit that is set to respond to the particular combination. The SELCAL dual channel decoder is located on the forward right radio rack in the electrical/electronics compartment. The SELCAL code assigned to the aircraft is indicated on a placard next to the decoder. The system is reset from the SELCAL control panel on the pedestal. SELCAL chime is sounded by central aural warning system (CAWS) speakers located in the captain's and first officer's consoles.

**WJE 412, 414**

#### 2. Equipment and Materials

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

**Table 201**

Name and Number	Manufacturer
SELCAL Test Set CTS-700 (SELCAL/ATS CALL TEST SET)	Coltech

**WJE ALL**

#### 3. Adjustment/Test SELCAL System

- A. Test SELCAL System

**WJE 406, 875-879**

**Table 202**

Step	Operation	Desired Result															
(1)	At Captain's (CAPT's) or First Officer's (F/O's) station connect microphone and headset.	Equipment connected.															
(2)	On VHF-1 frequency control panel select frequency assigned for test.	Frequency selected.															
<p><b>WARNING:</b> 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.</p>																	
(3)	Open these circuit breakers and install safety tags:																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">REF DES</th> <th style="text-align: left;">CIRCUIT BREAKER</th> <th style="text-align: left;">LOCATION</th> <th style="text-align: left;">PANEL AREA</th> <th style="text-align: left;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-44</td> <td>VHF COMM-2</td> <td>UPPER EPC</td> <td>RIGHT RADIO DC BUS</td> <td>G/5</td> </tr> <tr> <td>B10-176</td> <td>VHF COMM-3</td> <td>UPPER EPC</td> <td>LEFT RADIO DC BUS</td> <td>G/16</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5	B10-176	VHF COMM-3	UPPER EPC	LEFT RADIO DC BUS	G/16	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL													
B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5													
B10-176	VHF COMM-3	UPPER EPC	LEFT RADIO DC BUS	G/16													
(4)	On CAPT's or F/O's Audio Control Panel (ACP), move VHF-1 volume control to mid-position and press VHF-1 microphone selector.	Controls set.															

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 406, 875-879 (Continued)

**Table 202 (Continued)**

Step	Operation	Desired Result										
(5)	Request SELCAL-1 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1-Hertz rate. b. SELCAL-1 light comes on steady.										
(6)	On SELCAL panel, press SELCAL-1 light to reset.	SELCAL-1 light extinguished and chime tone silenced.										
(7)	Confirm SELCAL-1 check with ground station.	Confirmed.										
<p><b>WARNING:</b> 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.</p>												
(8)	Open this circuit breaker and install safety tag:											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">REF DES</th> <th style="width: 30%;">CIRCUIT BREAKER</th> <th style="width: 20%;">LOCATION</th> <th style="width: 20%;">PANEL AREA</th> <th style="width: 15%;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-7</td> <td>VHF COMM-1</td> <td>OVERHEAD</td> <td>EMERGENCY DC BUS</td> <td>B/8</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8								
(9)	Remove safety tag and close this circuit breaker:											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">REF DES</th> <th style="width: 30%;">CIRCUIT BREAKER</th> <th style="width: 20%;">LOCATION</th> <th style="width: 20%;">PANEL AREA</th> <th style="width: 15%;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-44</td> <td>VHF COMM-2</td> <td>UPPER EPC</td> <td>RIGHT RADIO DC BUS</td> <td>G/5</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5								
(10)	On VHF-2 frequency control panel select frequency assigned for test.	Frequency selected.										
(11)	On CAPT's or F/O's ACP, adjust VHF-2 volume control to mid range and press VHF-2 microphone selector.	Controls set.										
<p><b>NOTE:</b> Before making transmission make certain frequency is not in use.</p>												
(12)	Request SELCAL-2 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. SELCAL-2 light flashes at approximately 1-Hertz rate. b. SELCAL-2 light comes on steady.										
(13)	On SELCAL control panel, press SELCAL-2 light to reset.	SELCAL-2 light extinguished and chime tone silenced.										
(14)	Confirm SELCAL-2 check with ground station.	Confirmed.										
<p><b>WARNING:</b> 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.</p>												
(15)	Open this circuit breaker and remove safety tag:											

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 406, 875-879 (Continued)

**Table 202 (Continued)**

Step	Operation			Desired Result	
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(16)	Remove safety tag and close this circuit breaker:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-176	VHF COMM-3	UPPER EPC	LEFT RADIO DC BUS	G/16
(17)	On CAPT's or F/O's ACP, adjust VHF-3 volume control to mid position and press VHF-3 microphone selector.			Controls set.	
(18)	Request SELCAL-2 check of local air traffic control ground station using code assigned to aircraft. Observe SELCAL control panel.			Upon reply: a. CAWS chime tone sounds at approximately 1- Hertz rate. b. SELCAL-2 light comes on steady.	
(19)	On SELCAL control panel, press SELCAL-2 light to reset.			SELCAL-2 light extinguished and chime tone silenced.	
(20)	Confirm SELCAL-2 check with ground station.			Confirmed.	
(21)	Remove safety tags and close these circuit breakers:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8
	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5
(22)	The following adjustment to the selcal decoder is authorized upon experiencing audio bleedthrough: audio and sidetone output levels for 2.3 volts RMS $\pm 10\%$ across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate selcal decoder overhaul manual for detailed instructions of how to perform the adjustment.				
(23)	Return aircraft to required configuration.				

WJE 405, 409, 415-427, 429, 861-866, 868, 869, 871-874, 881, 883, 884, 891-893

**Table 203 -**

Step	Operation	Desired Result
(1)	At Captain's (CAPT's) or First Officer's (F/O's) station connect microphone and headset.	Equipment connected.

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WJE 405, 409, 415-427, 429, 861-866, 868, 869, 871-874, 881, 883, 884, 891-893 (Continued)

**Table 203 - (Continued)**

Step	Operation	Desired Result										
(2)	On VHF-1 frequency control panel select frequency assigned for test.	Frequency selected.										
<p><b>WARNING:</b> 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.</p>												
(3)	Open this circuit breaker and install safety tag:											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">REF DES</th> <th style="width: 25%;">CIRCUIT BREAKER</th> <th style="width: 20%;">LOCATION</th> <th style="width: 20%;">PANEL AREA</th> <th style="width: 20%;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-44</td> <td>VHF COMM-2</td> <td>UPPER EPC</td> <td>RIGHT RADIO DC BUS</td> <td>G/5</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5								
(4)	On CAPT's or F/O's Audio Control Panel (ACP), move VHF-1 volume control to mid-range and press VHF-1 microphone selector.	Controls set.										
(5)	Request SELCAL-1 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds intermittently. b. SELCAL-2 light comes on intermittently.										
(6)	On SELCAL panel, press SELCAL-1 light to reset	SELCAL-1 light extinguished and chime tone silenced.										
(7)	Confirm SELCAL-1 check with ground station.	Confirmed.										
<p><b>WARNING:</b> 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.</p>												
(8)	Open this circuit breaker and install safety tag:											
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REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8								
(9)	Remove safety tag and close this circuit breaker:											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">REF DES</th> <th style="width: 25%;">CIRCUIT BREAKER</th> <th style="width: 20%;">LOCATION</th> <th style="width: 20%;">PANEL AREA</th> <th style="width: 20%;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-44</td> <td>VHF COMM-2</td> <td>UPPER EPC</td> <td>RIGHT RADIO DC BUS</td> <td>G/5</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5								
(10)	On VHF-2 frequency control panel select frequency assigned for test.	Frequency selected.										

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**WJE 405, 409, 415-427, 429, 861-866, 868, 869, 871-874, 881, 883, 884, 891-893 (Continued)**

**Table 203 - (Continued)**

Step	Operation	Desired Result
(11)	On CAPT's or F/O's ACP, adjust VHF-2 volume control to mid range and press VHF-2 microphone selector.	Controls set.
<b>NOTE:</b> Before making transmission make certain frequency is not in use.		
(12)	Request SELCAL-2 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds intermittently. b. SELCAL-2 light comes on intermittently.
(13)	On SELCAL control panel, press SELCAL-2 light to reset.	SELCAL-2 light extinguished and chime tone silenced.
(14)	Confirm SELCAL-2 check with ground station.	Confirmed.
(15)	Remove safety tags and close this circuit breaker:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY DC BUS      B/8	
<b>WJE 405, 409, 873, 874, 881, 883, 884, 892, 893</b>		
(16)	The following adjustment to the selcal decoder is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS $\pm 10\%$ across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate selcal decoder overhaul manual for detailed instructions of how to perform the adjustment.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(16)	Return aircraft to required configuration.	
<b>WJE 405, 409, 873, 874, 881, 883, 884, 892, 893</b>		
(17)	Return aircraft to required configuration.	

**WJE 407, 408, 411, 880**

**Table 204**

Step	Operation	Desired Result
(1)	At captain's or first officer's station connect microphone and headset.	Equipment connected.
(2)	On VHF-1 frequency control panel select frequency assigned for test.	Frequency selected.
(3)	On HF-1 and HF-2 control panels place mode selector to OFF.	HF off.
<b>WARNING:</b> 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.		
(4)	Open this circuit breaker and install safety tag:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 407, 408, 411, 880 (Continued)

**Table 204 (Continued)**

Step	Operation	Desired Result
	B10-44      VHF COMM-2      UPPER EPC	RIGHT RADIO      G/5 DC BUS
(5)	On captain's or first officer's audio panel, adjust VHF-1 volume control to mid-position and press VHF-1 microphone selector.	Controls set.
(6)	Request SELCAL-1 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1-Hertz rate. b. SELCAL-1 light comes on steady.
(7)	On SELCAL panel, press SELCAL-1 light to reset.	SELCAL-1 light extinguished and chime tone silenced.
(8)	Confirm SELCAL-1 check with ground station.	Confirmed.
<p><b>WARNING:</b> 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.</p>		
(9)	Open this circuit breaker and install safety tag:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY      B/8 DC BUS	
(10)	Remove safety tag and close this circuit breaker:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B10-44      VHF COMM-2      UPPER EPC      RIGHT RADIO      G/5 DC BUS	
(11)	On VHF-2 frequency control panel select frequency assigned for test.	Frequency selected.
(12)	On captain's or first officer's audio panel, adjust VHF-2 volume control to mid range and press VHF-2 microphone selector.	Controls set.
<p><b>NOTE:</b> Before making transmission make certain frequency is not in use.</p>		
(13)	Request SELCAL-2 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1-Hertz rate. b. SELCAL-2 light comes on steady.
(14)	On SELCAL control panel, press SELCAL-2 light to reset.	SELCAL-2 light extinguished and chime tone silenced.
(15)	Confirm SELCAL-2 check with ground station.	Confirmed.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 407, 408, 411, 880 (Continued)

**Table 204 (Continued)**

Step	Operation	Desired Result										
<p><b>WARNING:</b> 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.</p>												
(16)	Open this circuit breaker and remove safety tag:											
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REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5								
(17)	On HF-1 control panel: select assigned test frequency; place mode selector to AM position; rotate RF SENS control to clockwise position (re-adjust as desired when transmission received).	Controls set.										
(18)	On captain's or first officer's audio panel, move HF-1 volume control to mid position and press HF-1 microphone selector.	Controls set.										
(19)	Request SELCAL-1 check of local air traffic control ground station using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1- Hertz rate. b. SELCAL-1 light comes on steady.										
(20)	On SELCAL control panel, press SELCAL-1 light to reset.	SELCAL-1 light extinguished and chime tone silenced.										
(21)	Confirm SELCAL-1 check with ground station.	Confirmed.										
(22)	On HF-1 control panel, place mode selector to OFF.	HF-1 off.										
(24)	On captain's or first officer's audio panel, move HF-2 volume control to mid position and press HF-2 microphone selector.	Controls set.										
(25)	Request SELCAL-2 check of local air traffic control ground station using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1-Hertz rate. b. SELCAL-2 light comes on steady.										
(26)	On SELCAL control panel, press SELCAL-2 light to reset.	SELCAL-2 light extinguished and chime tone silenced.										
(27)	Confirm SELCAL-2 check with ground station.	Confirmed.										
(28)	Place HF-2 mode selector to OFF.	HF-2 off.										
(29)	Remove safety tags and close these circuit breakers:											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">REF DES</th> <th style="width: 30%;">CIRCUIT BREAKER</th> <th style="width: 20%;">LOCATION</th> <th style="width: 20%;">PANEL AREA</th> <th style="width: 15%;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-7</td> <td>VHF COMM-1</td> <td>OVERHEAD</td> <td>EMERGENCY DC BUS</td> <td>B/8</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-7	VHF COMM-1	OVERHEAD	EMERGENCY DC BUS	B/8								

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 407, 408, 411, 880 (Continued)

**Table 204 (Continued)**

Step	Operation	Desired Result
	B10-44                      VHF COMM-2                      UPPER EPC	RIGHT RADIO                      G/5 DC BUS
(30)	The following adjustment to the selcal decoder is authorized upon experiencing audio bleedthrough: audio and sidetone output levels for 2.3 volts RMS $\pm 10\%$ across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate selcal decoder overhaul manual for detailed instructions of how to perform the adjustment.	
(31)	Return aircraft to required configuration.	

WJE 401-404, 410, 412, 414, 886, 887

**Table 205**

Step	Operation	Desired Result										
(1)	At Captain's (CAPT's) or First Officer's (F/O's) station connect microphone and headset.	Equipment connected.										
(2)	On VHF-1 frequency control panel select frequency assigned for test.	Frequency selected.										
(3)	Open HF-1 control panels place mode selector to OFF.	HF off.										
<b>WARNING:</b> 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.												
(4)	Open this circuit breaker and install safety tag:											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">REF DES</th> <th style="text-align: left;">CIRCUIT BREAKER</th> <th style="text-align: left;">LOCATION</th> <th style="text-align: left;">PANEL AREA</th> <th style="text-align: left;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-44</td> <td>VHF COMM-2</td> <td>UPPER EPC</td> <td>RIGHT RADIO DC BUS</td> <td>G/5</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL								
B10-44	VHF COMM-2	UPPER EPC	RIGHT RADIO DC BUS	G/5								
(5)	On CAPT's or F/O's Audio Control Panel (ACP), move VHF-1 volume control to mid-position and press VHF-1 microphone selector.	Controls set.										
(6)	Request SELCAL-1 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1-Hertz rate. b. SELCAL-1 light comes on steady.										
(7)	On SELCAL panel, press SELCAL-1 light to reset.	SELCAL-1 light extinguished and chime tone silenced.										
(8)	Confirm SELCAL-1 check with ground station.	Confirmed.										

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-404, 410, 412, 414, 886, 887 (Continued)

**Table 205 (Continued)**

Step	Operation	Desired Result
<p><b>WARNING:</b> 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.</p>		
(9)	Open this circuit breaker and install safety tag:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
<b>WJE 401-404, 412, 414, 886, 887</b>		
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY DC BUS      B/8	
<b>WJE 410</b>		
	B10-7      VHF COMM-1      OVERHEAD      EMERGENCY DC BUS      B/9	
<b>WJE 401-404, 410, 412, 414, 886, 887</b>		
(10)	Remove safety tag and close this circuit breaker:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B10-44      VHF COMM-2      UPPER EPC      RIGHT RADIO DC BUS      G/5	
(11)	On VHF-2 frequency control panel select frequency assigned for test.	Frequency selected.
(12)	On CAPT's or F/O's ACP, move VHF-2 volume control to mid-position and press VHF-2 microphone selector.	Controls set.
<b>NOTE:</b> Before making transmission make certain frequency is not in use.		
(13)	Request SELCAL-2 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1-Hertz rate. b. SELCAL-2 light comes on steady.
(14)	On SELCAL control panel, press SELCAL-2 light to reset.	SELCAL-2 light extinguished and chime tone silenced.
(15)	Confirm SELCAL-2 check with ground station.	Confirmed.
<p><b>WARNING:</b> 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.</p>		
(16)	Open this circuit breaker and remove safety tag:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-404, 410, 412, 414, 886, 887 (Continued)

**Table 205 (Continued)**

Step	Operation	Desired Result
	B10-44      VHF COMM-2      UPPER EPC	RIGHT RADIO      G/5 DC BUS
(17)	On HF-1 control panel: select assigned test frequency; place mode selector to AM position; rotate RF SENS control to clockwise position (re-adjust as desired when transmission received).	Controls set.
(18)	On CAPT's or F/O's ACP, move HF-1 volume control to mid-position and press HF-1 microphone selector.	Controls set.
(19)	Request SELCAL-1 check of local air traffic control ground station, using code assigned to aircraft. Observe SELCAL control panel.	Upon reply: a. CAWS chime tone sounds at approximately 1- Hertz rate. b. SELCAL-1 light comes on steady.
(20)	On SELCAL control panel, press SELCAL-1 light to reset.	SELCAL-1 light extinguished and chime tone silenced.
(21)	Confirm SELCAL-1 check with ground station.	Confirmed.
(22)	Remove safety tags and close these circuit breakers:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
<b>WJE 410</b>		
	B10-7      VHF COMM-1      OVERHEAD	EMERGENCY      B/9 DC BUS
<b>WJE 401-404, 410, 412, 414, 886, 887</b>		
	B10-7      VHF COMM-1      OVERHEAD	EMERGENCY      B/8 DC BUS
	B10-44      VHF COMM-2      UPPER EPC	RIGHT RADIO      G/5 DC BUS
(23)	The following adjustment to the selcal decoder is authorized upon experiencing audio bleedthrough: audio and sidetone output levels for 2.3 volts RMS $\pm 10\%$ across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate selcal decoder overhaul manual for detailed instructions of how to perform the adjustment.	
(24)	Return aircraft to required configuration.	

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## SELCAL DUAL CHANNEL DECODER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and operational test for the selcal dual channel decoder. The selcal dual channel decoder is located in the forward right radio rack in the electrical/electronics compartment.

### 2. Removal/Installation Dual Selcal Decoder

- A. Remove Selcal Decoder

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>			
G	1	B10-114	SELCAL-2

**WJE ALL**

- (2) Loosen hold-down nut at lower front of decoder.  
 (3) Swing hold-down nut down to clear decoder.  
 (4) Carefully slide decoder from mount.

- B. Install Selcal Decoder

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>			
G	1	B10-114	SELCAL-2

**WJE ALL**

- (2) Visually check decoder connector and mounting rack receptacle for damage and foreign objects.  
 (3) Carefully place decoder on mounting rack.  
 (4) Slide decoder into mounting rack until connector is completely engaged.  
 (5) Raise hold-down nut, mate with decoder hold-down lug, and tighten securely.

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- (6) Set both channels of decoder to SELCAL code assigned to aircraft.
- (7) Remove the safety tags and close these circuit breakers:

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>			
G	1	B10-114	SELCAL-2

**WJE ALL**

- (8) Energize aircraft electrical buses.
- (9) Using VHF-1 and VHF-2 in turn, request local air traffic control ground station to provide SELCAL check of code assigned to aircraft.
- (10) When ground station responds, applicable SELCAL-1 or -2 light should come on steady and pilot call chime should sound from both CAWS speakers at a 1-Hertz repetition rate.
- (11) Press applicable SELCAL light to reset. Light should go off and pilot call chime should cease.
- (12) Acknowledge to ground station, check completed.
- (13) The following adjustment to the selcal decoder is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm 10\%$  across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate selcal decoder overhaul manual for detailed instructions of how to perform the adjustment.
- (14) Return aircraft to required configuration.

EFFECTIVITY  
WJE ALL

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## SELCAL CONTROL PANEL - MAINTENANCE PRACTICES

### 1. General

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

- A. This maintenance practice provides removal/installation and operational test for the SELCAL control panel. The control panel provides visual indication of a call, for all communication systems on either SELCAL-1 or SELCAL-2 system. The panel is located in the flight compartment on the aft pedestal.

**WJE 405-411, 873-881, 883, 884, 886, 887, 892, 893**

- B. This maintenance practice provides removal/installation and operational test for the SELCAL control panel. The control panel is a dual purpose panel providing visual indication of a SELCAL call for all radio communication systems on either SELCAL-1 or SELCAL-2 system, and reset of the activated SELCAL channel. The panel is located in the flight compartment on the pedestal accessible to the captain and first officer.

**WJE 401-404**

- C. This maintenance practice provides removal/installation and operational test for the SELCAL control panel. The control panel is a dual purpose panel providing visual indication of a SELCAL call for all radio communication systems and reset of the activated SELCAL channel. The panel is located in the flight compartment on the pedestal accessible to the captain and first officer.

**WJE 412, 414**

- D. This maintenance practice provides removal/installation and operational test for the SELCAL control panel. The control panel is a dual purpose panel providing visual indication of a SELCAL call for all radio communication systems on either SELCAL-1 or SELCAL-2 and reset of the activated SELCAL channel. The panel is located in the flight compartment on the pedestal accessible to the captain and first officer.

**WJE ALL**

### 2. Removal/Installation SELCAL Control Panel

- A. Remove SELCAL Control 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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

**UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	B10-114	SELCAL-2

**WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

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**WJE ALL**

- (2) Press on control panel face, unlock slot-head fasteners, and release hand pressure.
- (3) Disconnect electrical connector.
- (4) Remove panel from cavity.

**B. Install SELCAL Control 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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

**UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>			
G	1	B10-114	SELCAL-2

**WJE ALL**

- (2) Visually check control panel receptacle and aircraft electrical connector for damage and foreign objects.
- (3) Connect electrical connector to control panel.
- (4) Position control panel in cavity.
- (5) Apply hand pressure to control panel face and lock slot-head fasteners.
- (6) Remove the safety tags and close these circuit breakers:

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1

**UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>			
G	1	B10-114	SELCAL-2

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

- (7) Request local air traffic control ground station to provide SELCAL check of code assigned to airplane on VHF-1 or VHF-2 using both SELCAL-1 and SELCAL-2 selectors on the control panel.

### WJE 412, 414

- (8) Request local air traffic control ground station to provide SELCAL check of aircraft code assigned to VHF-1, VHF-2.

### WJE 410, 886, 887

- (9) Request local air traffic control ground station to provide SELCAL check of aircraft code assigned to VHF-1, VHF-2, and HF-1.

### WJE 407, 408, 411, 880

- (10) Request local air traffic control ground station to provide selcal check of airplane code assigned to VHF-1, VHF-2, HF-1 and HF-2.

### WJE 875-879

- (11) Request local air traffic control ground station to provide SELCAL check of airplane code assigned to VHF-1, VHF-2 and VHF-3.

### WJE 405, 406, 409, 873, 874, 881, 883, 884, 892, 893

- (12) Request local air traffic control ground station to provide SELCAL check of aircraft code assigned to VHF-1, VHF-2; check VHF-3 or HF-1 and HF-2 as applicable to aircraft.

### WJE 401-404, 412, 414

- (13) Request local air traffic control ground station to provide SELCAL check of airplane code assigned to VHF-1, VHF-2.

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

- (14) When ground station responds, applicable SELCAL 1 or 2 light should come on steady and pilot call chime should sound from both CAWS speakers at 1-Hertz repetition rate.

### WJE 401-404

- (15) When ground station responds, applicable VHF 1 or 2 control panel light should come on intermittently and pilot call chime should sound from both CAWS speakers at 1-Hertz repetition rate.

### WJE 412, 414

- WJE  
WJE
- (16) When ground station responds, applicable SELCAL 1 or 2 light should come on steadily and pilot call chime should sound from both CAWS speakers at 1-Hertz repetition rate.

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

- (17) Press PUSH TO RESET button. Light should go off and chime should cease.

### WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893

- (18) Press applicable SELCAL light to reset. Light should go off and chime should cease.

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### WJE ALL

- (19) Acknowledge to tower, check has been completed.
- (20) The following adjustment to the selcal decoder is authorized upon experiencing audio bleedthrough: Adjust audio and sidetone output levels for 2.3 volts RMS  $\pm$  10% across a 600 ohm load using a VTVM or equivalent voltmeter. Refer to the appropriate selcal decoder overhaul manual for detailed instructions of how to perform the adjustment.
- (21) Return airplane to required configuration.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### VHF DATA LINK (ACARS) - DESCRIPTION AND OPERATION

#### 1. General

- A. The ARINC Communications Addressing and Reporting System (ACARS) is a two-way voice and digital data link between the aircraft and ground station. In conjunction with the VHF communication system, ACARS provides the means to automatically report vital flight and routine information such as Out/Off/On/In (OOOI) times to the ground-based station. In addition, the system enables manual routing of messages to and from the aircraft and the ground station and has the capability of opening a voice channel for essential verbal communications.

#### WJE 881, 883

- B. An illustration of ACARS airborne system and its units is provided and interface with the VHF. (Figure 1)

#### WJE 401-403, 412, 881, 883

#### 2. ACARS System Components

##### A. Description

- (1) Management Unit (MU) - The MU is the ACARS unit that inputs and outputs the air-to-ground and ground-to-air ACARS messages and data through a VHF transceiver. Two indicator lights, identified as C/U FAIL and M/U FAIL, on the front panel of the MU illuminate when a failure occurs in either the CU or MU during system operation. The MU is in a 3/8 ATR long unit located on shelf No. 1 of the aft right radio rack in the electrical/electronics compartment. Mounted inside the MU rear panel is a fan which provides cooling for the internal electronic components.
- (2) Control Unit (CU) - Operational control of ACARS and a visual observation of the system mode of operation and unit status are provided by the CU. The CU front panel contains a numeric display, three toggle switches, twenty-nine pushbutton numeric and function selectors, a system status display, and a dual dim control which sets the brightness level of the CU keyboard pushbutton lights and indicators. The CU is mounted in the right forward pedestal. Four quick release fasteners secure the CU to the panel.
- (3) Printer - The high-speed, single-copy thermal printer is located on the aft right console. The electronic circuitry of the printer accepts data from the MU which is processed and printed out for use by the crew. The printout of the input data is at approximately 160 characters per second. Mounted across the upper portion of the printer front panel are two push switches, a printout format selector switch, and two indicator lights. An opening, between the bottom of the hinged front panel and the solid bottom portion, provides an exit for the printer paper.

##### B. Operation

#### WJE 881, 883

- (1) The Management Unit (MU) receives normal power from the 115-vac and 28-vdc buses. Also, it is connected to the battery direct bus to provide a standby source of power to maintain the GMT clock and a portion of the memory when normal AC power is shut down. This feature preserves the flight number, destination station, departure station, and any messages which are in the downlink buffer and have not been sent, in the event of a temporary AC power loss. The ACARS MEMORY CLOCK circuit breaker is on the overhead C/B panel. The ACARS 115 vac and 28 vdc circuit breakers are on the upper EPC circuit breaker panel. The MU is the heart of the ACARS system. It receives ground-to-air messages from the VHF-3 transceiver, controls the transmission of air-to-ground messages through the same transceiver, and performs the following functions:

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 401-403, 412

The Management Unit (MU) receives normal power from the 115-vac bus. Also, it is connected to the battery direct bus to provide a standby source of power to maintain the GMT clock and a portion of the memory when normal AC power is shut down. This feature preserves the flight number, destination station, departure station, and any messages which are in the downlink buffer and have not been sent, in the event of a temporary AC power loss. The ACARS MEMORY CLOCK circuit breaker is on the overhead C/B panel. The ACARS 115 vac circuit breaker is on the upper EPC circuit breaker panel. The MU is the heart of the ACARS system. It receives ground-to-air messages from the VHF-3 transceiver, controls the transmission of air-to-ground messages through the same transceiver, and performs the following functions:

### WJE 401-403, 412, 881, 883

- (a) Monitors the aircraft Out, Off, On, In (OOOI) event sensors; stores the GMT as each event occurs; and automatically outputs this data to the transceiver for transmission to the ground station.

### WJE 881, 883

- (b) Accepts messages and commands from the ground station, which are addressed to the aircraft. A SELCAL flasher signal is applied to CU pushbutton indicator (VOX MODE) when a ground station calls.

### WJE 401-403, 412

- (c) Accepts messages and commands from the ground station, which are addressed to the aircraft. A SELCAL flasher signal is applied to VOX MODE pushbutton indicator when a ground station calls.

### WJE 401-403, 412, 881, 883

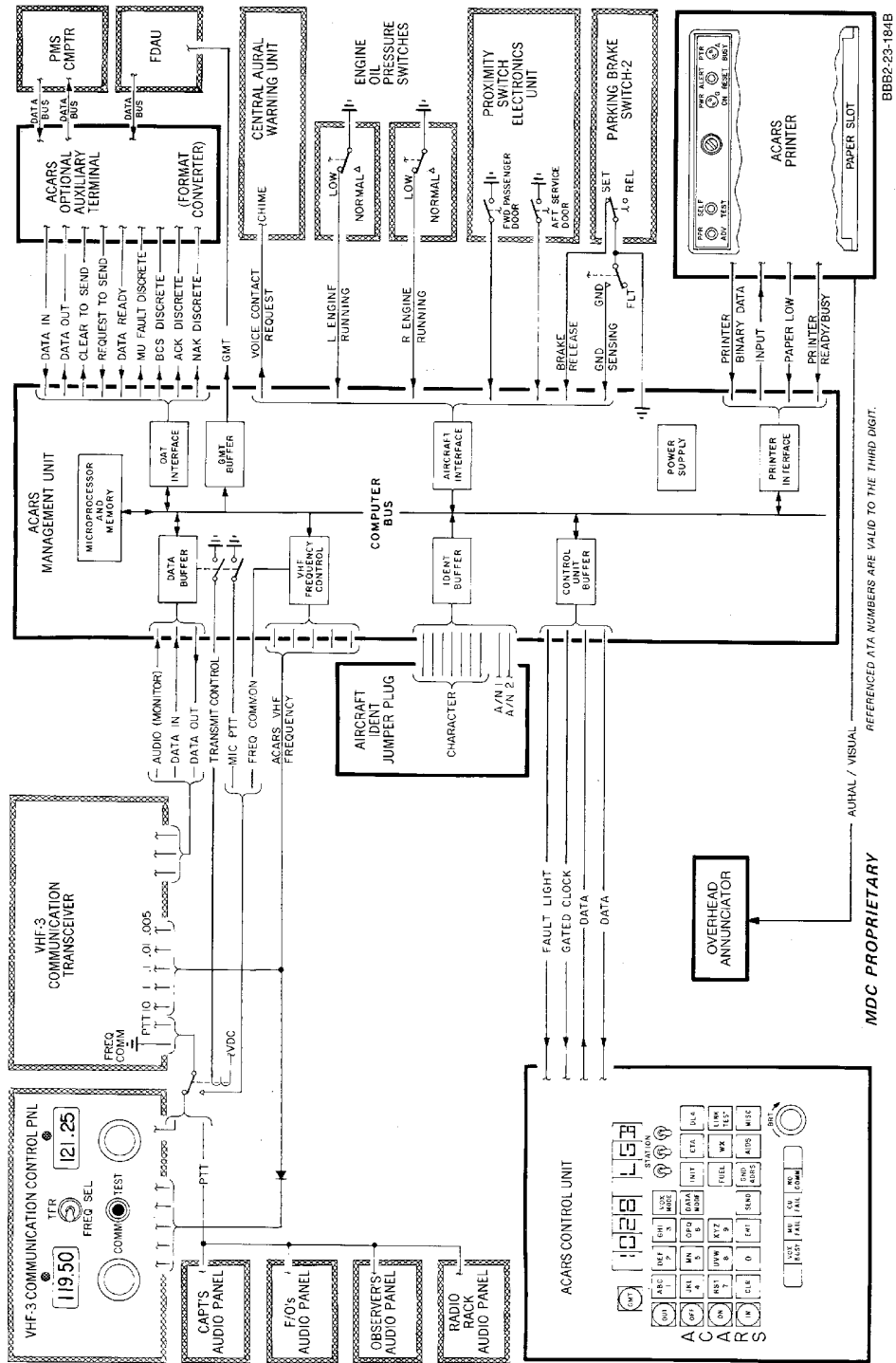
- (d) Outputs ground-to-air generated messages to the flight compartment printer.
- (e) Accepts messages and commands from CU for air-to-ground transmission.
- (f) Controls the ACARS system, polled, demand, or voice mode of operation.
- (g) Controls the sequential transmission of priority messages.
- (h) Performs BCS error check of messages and generates an ACK (acknowledge) or NAK (not acknowledge).

### WJE 881, 883

- (i) Accepts data from card reader for air-to-ground transmission.
- (2) The OAT is a universal synchronous/asynchronous receiver-transmitter. Programmed by the MU microprocessor, it converts MU parallel digital data to serial for FDAU input and the FDAU serial output parallel for MU microprocessing. The unit also provides the means to perform a link test, with a format test message, to verify MU and OAT operational status. Failure is indicated by the OAT FAIL lamp on the CU and the FAIL OAT lamp on the OAT unit. Acknowledgement by station of message is indicated by the OAT ACCEPT lamp lighting.
- (3) The printer is a high speed single copy thermal printer which provides a printout of input data at a rate of approximately 160 characters per second. It contains the electronic circuitry to accept data from the MU, process, and then print out the data. A self-test feature enables the printer to print out a 40 column test pattern as long as the TEST pushbutton switch is pressed.



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**ACARS System Block Diagram**  
Figure 1/23-24-00-990-811

EFFECTIVITY  
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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VHF DATA LINK (ACARS) - TROUBLE SHOOTING

### 1. General

- A. Trouble Shooting procedures provided in this section are basic procedures for isolating and correcting faults in the VHF Data Link (ACARS) system in the aircraft.
- B. The basic causes of faulty system operation are generally: faulty aircraft wiring or faulty line replaceable units (LRUs).
- C. By using the basic check procedures, coordinated with the system schematics contained in this section, quick isolation and correction of the problem can be accomplished.

#### **WJE 401-403, 412**

- D. The major components of the system are the management unit and control unit. The system interfaces with the VHF-3. In Trouble Shooting, some checks may have to be made in the interfacing systems components and wiring.

#### **WJE 881, 883**

- E. The major components of the system are the management unit, control unit, printer, and optional auxiliary terminal. The system interfaces with the VHF-3. In Trouble Shooting, some checks may have to be made in the interfacing systems components and wiring.

#### **WJE 401-403, 412, 881, 883**

- F. System components are located as follows:

**Table 101**

Component	Location
Management Unit (MU)	Electrical/Electronics Compartment
Control Unit	Flight Compartment Pedestal
Printer	Flight Compartment Right Console
<b>WJE 881, 883</b>	
Optional Auxiliary Terminal (OAT)	Electrical/Electronics Compartment
<b>WJE 401-403, 412, 881, 883</b>	
Circuit Breakers	
ACARS 115 VAC	Upper EPC Circuit Breaker Panel
<b>WJE 881, 883</b>	
ACARS 28 VDC	Upper EPC Circuit Breaker Panel
<b>WJE 401-403, 412, 881, 883</b>	
ACARS MEMORY CLOCK	Overhead Circuit Breaker Panel
ACARS PRINTER	Upper EPC Circuit Breaker Panel

The system circuit breakers are located as follows:

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

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WJE 401-403, 412, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	8	B10-7	VHF COMM-1

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
D	22	B10-424	FLIGHT MANAGEMENT SYSTEM-1 MCDU
<b>WJE 881, 883</b>			
D	22	B10-424	MCDU-1
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	16	B10-176	VHF COMM-3
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	10	B10-425	FLIGHT MANAGEMENT SYSTEM-2 MCDU

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412, 881, 883</b>			
G	5	B10-44	VHF COMM-2

### UPPER EPC, RT AC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
B	16	B10-425	MCDU-2

**WJE 401-403, 412, 881, 883**

## 2. Equipment and Materials

NOTE: Equivalent substitutes may be used in place of the following listed item.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

EFFECTIVITY <b>WJE 401-403, 412, 881, 883</b>
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 102**

Name and Number	Manufacturer
Multimeter, Digital, Danameter 2000A	Dana Instruments, Inc.
Multimeter, Digital, Fluke	Fluke

### 3. Trouble Shooting VHF Data Link (ACARS)

#### 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 103**

Procedure		Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Check for proper grounds at LRUs. 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 LRUs.
(3)	Perform continuity check of aircraft wiring. A hot continuity check may be required to check operation of relays or other associated active components to complete continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.
(4)	Replace suspected faulty LRU or component with a known operational unit.	Replace faulty LRU or component.

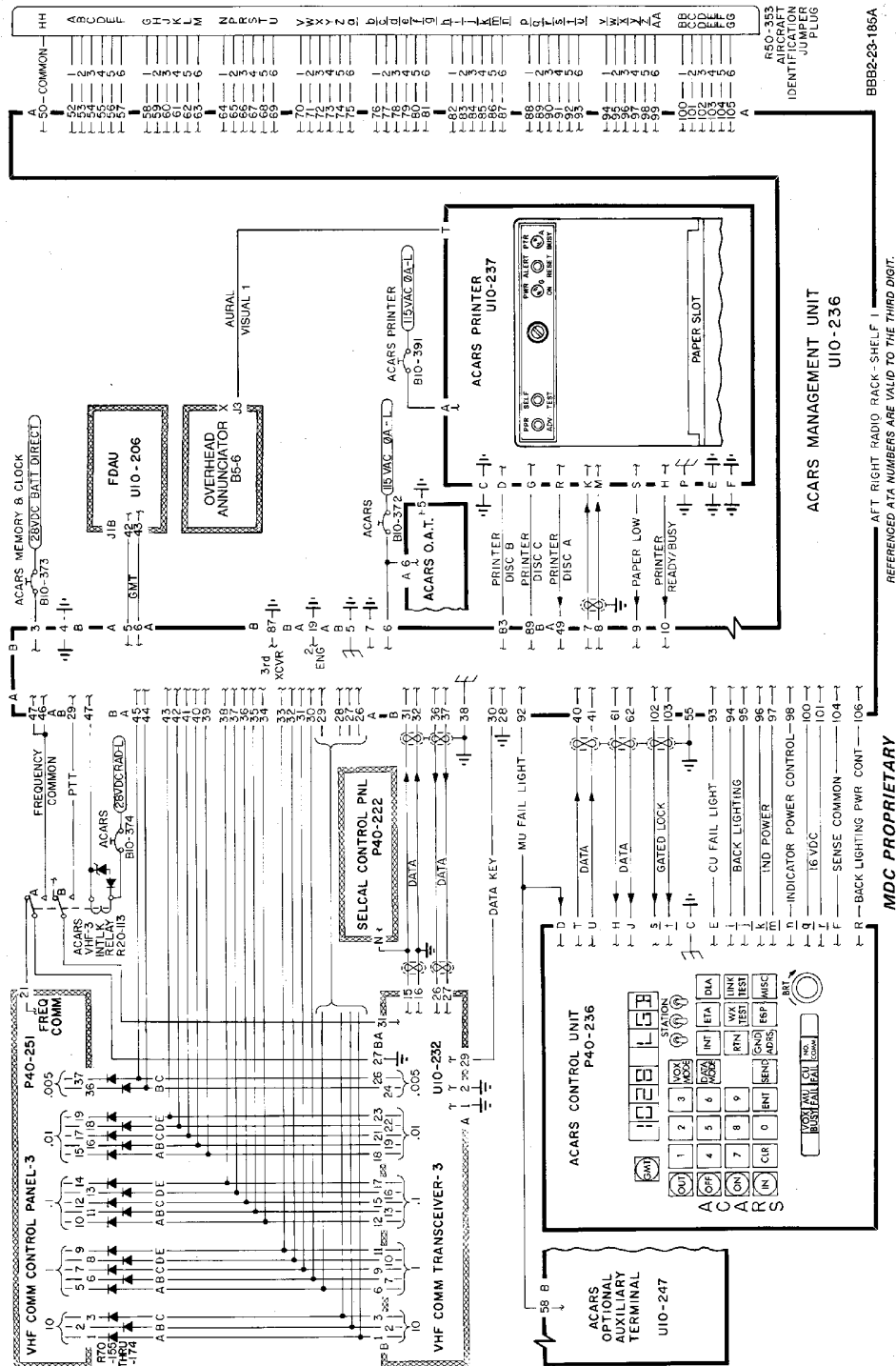
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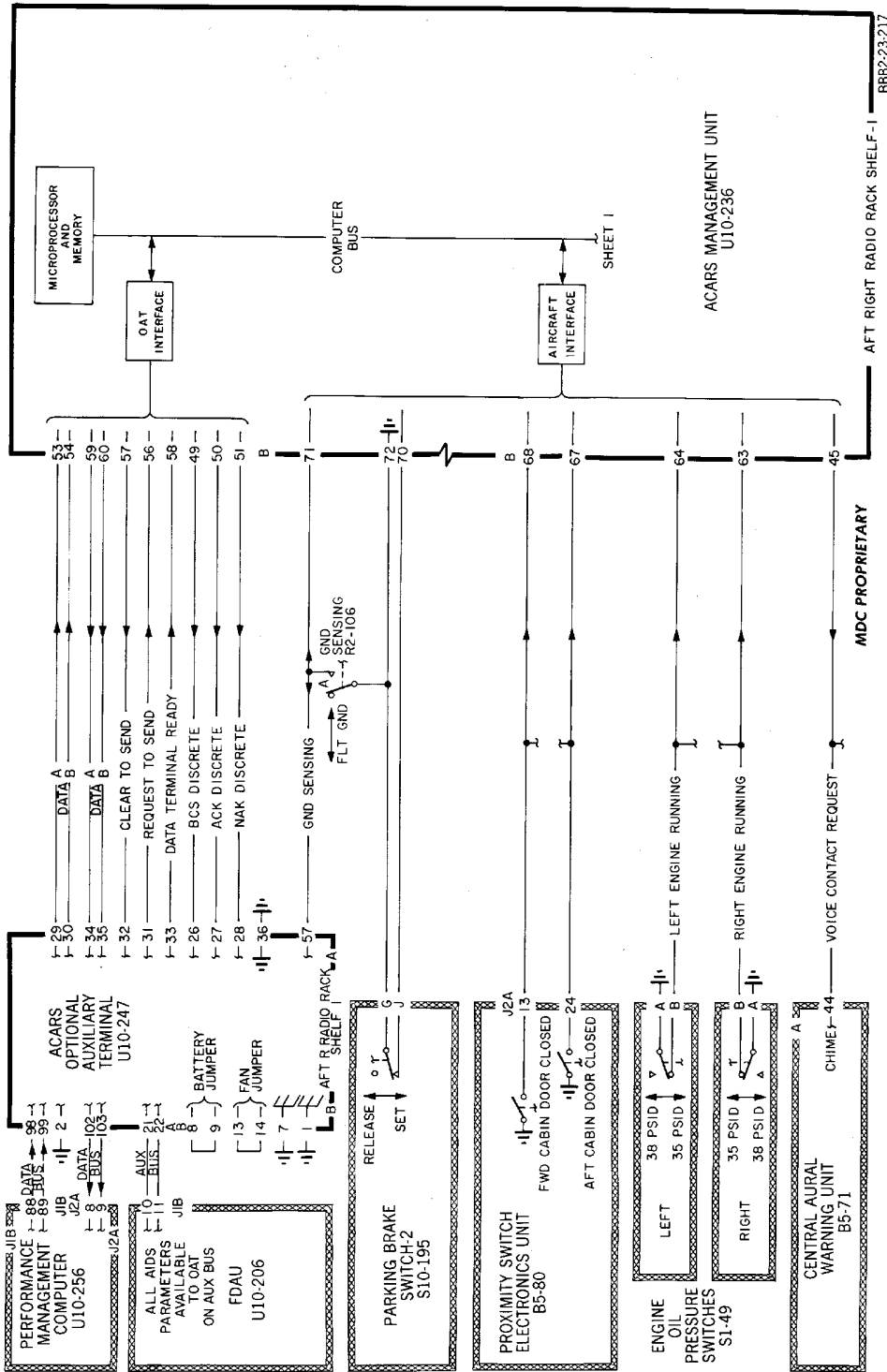


**ACARS Tuning -- Schematic**  
Figure 101/23-24-00-990-805

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



ACARS -- Schematic  
Figure 102/23-24-00-990-806

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VHF DATA LINK (ACARS) - MAINTENANCE PRACTICES

### 1. General

A. This maintenance practice provides adjustment/test to verify correct operation of the system. Test as written is a comprehensive check of all the units of ACARS.

NOTE: If a malfunction is found, a visual check of system should be made for loose plugs and damage before interchanging any equipment.

### 2. Adjustment/Test ACARS

#### WJE 401-403, 412

A. System Initialization

NOTE: When CU is in upper function mode the upper half of an arrow is displayed and a period is displayed in the upper right corner of CU display. In this mode those functions in the upper half of the CU buttons are operational.

When in lower function mode the lower half of an arrow is displayed and a period is displayed in the lower right hand corner of CU display. In this mode those functions in the lower half of the CU buttons are operational.

Remove the safety tags and close these circuit breakers:

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	B10-372	ACARS

**Table 201 System Initialization**

<b>Step</b>	<b>Operation</b>	<b>Desired Result</b>	
(1)	Press FLT, 1, 2, 3, 4, ENT.	FLIGHT SCHED DATE	WD1234 XX
(2)	Press 1, 2, ENT.	SCHED DATE LEG	12 XX
(3)	Press 2, ENT.	LEG DEP STA	2 XX
(4)	Press L, G, B, ENT.	DEP STA DEST STA	LGB XXX
(5)	Press L, A, X, ENT.	DES STA ETD	LAX XX:XX
(6)	Press 1, 2, 3, ENT.	ETD ETE	01:23 XX:XX
(7)	Press 4, 5, 6, ENT.	ETE YEAR	04:56 XX:XX
(8)	Press 8, 8, ENT.	YEAR MONTH	88 XX

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-403, 412 (Continued)

**Table 201 System Initialization (Continued)**

Step	Operation	Desired Result
(9)	Press 0, 7, ENT.	MONTH                      07 UTC DAY                    XX
(10)	Press 3, 0, ENT.	ENT TO ACCEPT CLR TO EXIT
(11)	Press ENT.	--///-FUEL-BAL-- (FLASHING) GATE SR XX:XX:XX
(12)	Press FUEL, ENT.	* FUEL CHECK * UPLIFT XXXXXXLB
(13)	Press 6, 0, 0, 0, 0, 0, ENT.	FUEL CHECK FAILS SHORT 00 PERCENT
(14)	Press CLR.	--///-FUEL-BAL-- (FLASHING) GATE SR XX:XX:XX
(15)	Press BAL, 1, 2, 3, ENT.	PHASE A                      123 PHASE B
(16)	Press 1, 2, 3, ENT.	PHASE B                      123 PHASE C
(17)	Press 1, 2, 3, ENT.	--///-FUEL-BAL-- (FLASHING) GATE SR XX:XX:XX
NOTE: Initialization is complete, continue with test.		

**WJE 881, 883**

B. Flight Number/Link Test

**Table 202**

Step	Operation	Desired Result
(1)	Set VHF-1 to 131.55 MHz. (Data Link frequency)	131.55 MHz.
(2)	Press INIT pushbutton.	INIT pushbutton lights; FLT and four digits displayed
(3)	Press ENT pushbutton and 0, 0, 1, 3 pushbuttons.	DEP and three characters displayed.
(4)	Using STATION switches, enter airport three letter designator.	DES and three characters displayed.
(5)	Repeat step (4) using a second set of airport designators.	FUEL and four digits displayed.
(6)	Press 4, 2, 0, 0, ENT and INIT.	Display goes blank.
(7)	While monitoring VHF-1 Audio, press LINK TEST pushbutton on CU.	Four left hand digits flash followed by four right hand digits and CU function buttons and indicators. SELCAL-1 light illuminated and CAWS chime tone heard.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 881, 883 (Continued)

**Table 202 (Continued)**

Step	Operation	Desired Result
<u>NOTE:</u> If switch is held for longer than 5 seconds lights will go OFF.		
<u>NOTE:</u> At the time the LINK TEST pushbutton is pressed listen for a short burst of audio tones in the VHF-1 audio. This will confirm that VHF-3 has transmitted the test message.		
(8)	Press DATA MODE pushbutton.	SELCAL light goes off; chime tone not heard.

C. GMT Test

NOTE: This test is performed to check the digital clock and functions without automatic update.

**Table 203**

Step	Operation	Desired Result
(1)	On CU press MISC, 8 and ENT.	GMT and four digits appear in display.
(2)	Press CLEAR.	GMT 0000 displayed.
(3)	Enter new GMT by pressing appropriate keyboard number pushbuttons to obtain current time. (Enter hours and minutes only.)	Entered.
(4)	Press ENT. New GMT is now in register.	Display blank. SEND light comes on.
(5)	Open the circuit breakers that follow:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B10-372      ACARS      Upper EPC      LEFT RADIO AC BUS      F/18	
	B10-374      ACARS      Upper EPC      RIGHT RADIO DC BUS      G/18	
		All lights and display on CU OFF.
(6)	Wait 2 minutes.	
(7)	Close the circuit breakers that follow:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B10-372      ACARS      Upper EPC      LEFT RADIO AC BUS      F/18	
	B10-374      ACARS      Upper EPC      LEFT RADIO DC BUS      G/18	
(8)	Press GMT and check that GMT has advanced while AC power was off and that it reads correct time. (No loss of time should occur while AC power is OFF.)	Verified

WJE 401-403, 412, 881, 883

D. OUT-OFF-ON-IN (OOOI) Sensor Inputs Test Verification

EFFECTIVITY <b>WJE 401-403, 412, 881, 883</b>
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23-24-00

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 881, 883

**Table 204**

Step	Operation	Desired Result
(1)	Verify parking brake is set.	PARKING BRAKE ON annunciator on.
(2)	Close main cabin door.	Closed.
(3)	Close aft cabin door.	Closed.
(4)	Simulate engine oil pressure by removing wire 2E203J24 from terminal block S30-205, pin 12 and wire number 1E203J24 from terminal block S30-208, pin 22.	Wires removed.
(5)	On CU, press MISC.	MISC illuminates and 00 displayed.
(6)	On CU, enter ID using two right hand station switches.	ID displayed.
(7)	On CU, press ENT four times.	GND displayed.
(8)	Open the circuit breaker that follows:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
	B1-24      RIGHT GROUND CONTROL RELAY	Upper EPC      R AC BUS      L/33
		GND changes to AIR.
(9)	On CU press ENT.	01111111 displayed.
(10)	Reconnect wire 2E203J24 to terminal block 530-205 pin 12.	R OIL PRESSURE LOW annunciator on; 01111110 displayed on CU.
(11)	Reconnect wire 1E203J24 to terminal block 530-208 pin 22.	L OIL PRESSURE LOW annunciator on; 01111100 displayed on CU.
(12)	Open aft cabin door.	AFT CABIN DOOR annunciator on; 01101100 displayed on CU.
(13)	Open forward cabin door.	FWD CABIN DOOR annunciator on; 01001100 displayed on CU.
(14)	Release parking brake.	PARKING BRAKE ON annunciator is extinguished; 11001100 displayed on CU.
(15)	On CU, press MISC.	MISC extinguished and CU displays go blank.

**WJE 401-403, 412, 881, 883**

E. OUT-OFF-ON-IN Test

**NOTE:** IF ACARS FAILS TO COMPUTE OUT, OFF, ON, AND IN (OOOI) TIMES, EVEN THOUGH CREW HAS CORRECTLY ENTERED PREFLIGHT DATA (FLIGHT NUMBER, DEPARTURE AND DESTINATION STATION AND FUEL DATA), A COMPUTER ERROR IS LIKELY. THIS CAN BE CLEARED BY PULLING BOTH THE ACARS AC AND DC CIRCUIT BREAKERS AND THEN RESETTING.

**WJE 401-403, 412**

F. OUT-OFF-ON-IN (OOOI) Sensor Verification

EFFECTIVITY <b>WJE 401-403, 412, 881, 883</b>
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-403, 412 (Continued)

**Table 205 OUT-OFF-ON-IN (OOOI) Sensor Verification**

Step	Operation	Desired Result			
(1)	Make sure the circuit breakers that follow are closed:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-124	DOOR WARNING	Lower EPC	MISC. - RIGHT DC BUS	R/24
	B1-24	RIGHT GROUND CONTROL RELAY	Upper EPC	RIGHT AC BUS	L/33
(2)	Make sure that the fuel levers are off.				
(3)	Make sure that the nose gear is in ground mode.				
(4)	Set the parking brake.				
(5)	Make sure that the fwd and aft cabin doors are open.	FWD and AFT CABIN DOOR annunciators are on.			
(6)	Press Misc, W, P, C and ENT	* Wiring Test * REG MARK (Plug #)			
(7)	Press the down arrow key until OOOI is displayed in lower display.	OOOI X XXXXXXXX			
<b>NOTE:</b> This test may trigger a prompt to enter FLT DATA. If so, repeat Table 201					
(8)	Close the FWD cabin door.	OOOI X 1XXXX11X			
(9)	Close the AFT cabin door.	OOOI X 111X111X			
(10)	Release parking brake.	OOOI X 111X1110			
(11)	Set the parking brake.	OOOI X 111X1111			
(12)	Move right fuel lever to ON.	OOOI X 11111111			
(13)	Move right fuel lever to OFF.	OOOI X 11101111			
(14)	Move left fuel lever to ON.	OOOI X 11111111			
(15)	Move left fuel lever to OFF.	OOOI X 11101111			
(16)	Open the circuit breaker that follows:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-24	RIGHT GROUND CONTROL RELAY	Upper EPC	RIGHT AC BUS	L/33
(17)	Open the fwd and aft doors.				
(18)	Close the circuit breaker that follows:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-24	RIGHT GROUND CONTROL RELAY	Upper EPC	RIGHT AC BUS	L/33
	OOOI 0 00000001				

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-403, 412 (Continued)

**Table 205 OUT-OFF-ON-IN (OOOI) Sensor Verification (Continued)**

Step	Operation	Desired Result
(19)	Press CLR.	--///-FUEL-///-- (flashing) GATE SR XX:XX:XX

G. System Interface Test

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	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>
R	38	B1-833	CAWS SSRS-2 ALT ALERT

**UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	23	B10-391	ACARS PRINTER

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	14	B10-113	SELCAL-1
G	16	B10-176	VHF COMM-3

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	1	B10-114	SELCAL-2

Step	Operation	Desired Result
(1)	Press Misc, T, S, T and ENT.	System Test
<b>NOTE:</b> DFDAU is not connected to ACARS.		
		Printer will print out test results.

WJE 881, 883

H. Interlock Test

EFFECTIVITY WJE 401-403, 412, 881, 883
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 881, 883 (Continued)

**Table 206**

Step	Operation	Desired Result
(1)	With CU still in DATA MODE, select VHF-3 (MIC) on any one audio control panel. Press MIC button and verify that VHF-3 transceiver does not key on.	Verified.

I. Radio Test

**Table 207**

Step	Operation	Desired Result
(1)	Press VOX MODE pushbutton on CU. (VHF-3 now is under control of VHF-3 control panel and tuned to frequency indicated on panel.)	VOX MODE pushbutton illuminates. DATA MODE and SEND pushbutton lights go off. DATA MODE pushbutton starts flashing after 2 minutes. Pressing VOX MODE again causes DATA MODE light to go out.
(2)	Channel transceiver to authorized test frequency using right frequency selector on VHF-3 communication control panel.	Frequency selected.
(3)	Verify that VHF-3 is functioning properly.	Verified.
(4)	On CU, press DATA MODE pushbutton.	DATA MODE button illuminated, VOX MODE button extinguished.

J. Printer Functional Test

**Table 208**

Step	Operation	Desired Result
(1)	Verify that PWR ON indicator light is on.	Verified.
(2)	Depress PPR ADV pushbutton switch.	Paper advances when pushbutton switch is depressed.
(3)	Depress and briefly hold down SELF TEST pushbutton switch.	60 column test pattern paper produced; PTR BUSY indicator ON.
(4)	Repeat step (3).	80 column test pattern paper produced; PTR BUSY indicator ON.
(5)	Repeat step (3).	40 column test pattern paper produced; PTR BUSY indicator ON.
(6)	Tear off printed copy and observe that printout is uniform and legible.	
(7)	On printer control panel, press MISC, 8, 5 and ENT.	Test message printed, PTR BUSY light flashing.
(8)	On control panel, press RESET button.	PTR BUSY light goes out.

K. Optional Auxiliary Terminal Functional Test

NOTE: This section tests the functioning of the OAT by activating its self test-link test circuitry.

**Table 209**

Step	Operation	Desired Result
(1)	Press SELF TEST pushbutton.	Red OAT FAIL and amber ACCEPT lights come on.

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WJE 401-403, 412, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 881, 883 (Continued)

**Table 209 (Continued)**

Step	Operation	Desired Result
(2)	Release SELF TEST pushbutton.	Red OAT FAIL light goes out. Amber ACCEPT light remains on. Link test activated and test message sent. One of two following events occur; an acknowledge received which causes ACCEPT light to go out, or no acknowledge is received and after 2 min. ACCEPT lamp goes out and FAIL light comes on.
(3)	Press SELF TEST pushbutton.	OAT FAIL light goes out.
<p><u>NOTE:</u> If BTRY LOW light will not go out, leave power on system to recharge battery.</p>		

WJE 401-403, 412, 881, 883

L. End of Test

**Table 210 End of Test**

Step	Operation	Desired Result
(1)	End of test.	
(2)	Make sure parking brake is set.	
(3)	Return aircraft to required configuration.	

WJE 881, 883

M. Recommended System Recheck (When LRU Replaced)

**Table 211**

Step	Operation	Desired Result
(1)	Press CU INTL function selector, then press 0, 0, 1, 3 and ENT.	DEP and three characters on display.
(2)	Using STATION switches, enter airport three letter designator. Press ENT.	DES and three characters on display.
(3)	Repeat step (2) using a second set of airport designators.	FUEL and 4 digits on display.
(4)	On CU press 4, 2, 0,0, and INIT pushbuttons.	Display goes blank.
(5)	On CU press DATA MODE pushbutton.	DATA MODE pushbutton comes on.
(6)	Press LINK TEST pushbutton .	Illumination in the following three part sequence:
		1. 4 Left-hand displays
		2. 4 Right-hand displays
		3. Lighted keyboard push- buttons and status indicators.

N. Aircraft ID Verification

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 881, 883 (Continued)

**Table 212**

Step	Operation	Desired Result
(1)	On CU, press MISC button.	MISC pushbutton comes on. -----00 in display.
(2)	Using two right station switches, enter ID.	-----ID in display.
(3)	On CU, press ENT button three times.	ID number in display.
(4)	Verify ID number matches aircraft registration number.	Verified.
(5)	On CU, press MISC button.	MISC pushbutton goes out; display blank.
(6)	End of Test. Return aircraft to required configuration.	

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ACARS CONTROL UNIT - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation for the Automatic Communication Addressing and Reporting System (ACARS) Control Unit (CU). The control unit is located on the forward right pedestal. (Figure 201)

### 2. Removal/Installation

- A. Remove Control 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:

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

#### **WJE 401-403, 412, 881, 883**

- (2) Unfasten four quick release fasteners at each corner of unit.  
 (3) Slowly lift control unit from cavity and disconnect electrical connectors.

- B. Install Control Unit (CU)

**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 BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

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 WJE 401-403, 412, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

#### WJE 401-403, 412, 881, 883

- (2) Visually check control unit receptacle and mating connector for damage or foreign objects.
- (3) Connect electrical connector to control unit receptacle.
- (4) Position control unit into cavity.
- (5) Apply hand pressure to control unit face, and lock four fasteners.
- (6) Remove the safety tags and close these circuit breakers:

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

#### WJE 401-403, 412, 881, 883

- (7) Set VHF-2 to local ARINC voice frequency and ACARS VHF switch on overhead switch panel, to position 2.
- (8) Press DATA MODE pushbutton. DATA MODE and SEND pushbuttons light.
- (9) On SELCAL control panel, set SELCAL-1 selector to VHF-2.
- (10) Set VHF-3 to 131.55 MHz (Data Line Frequency).

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WJE 401-403, 412, 881, 883

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- (11) Press CU FLT NO pushbutton, then enter four zeros on the number keyboard and press ENT. 0000 displayed.
- (12) While monitoring VHF-3 audio, press LINK TEST pushbutton on CU. When pushbutton is pressed, all lights on the CU should come on and all segments of display should light in sequence:
  - (a) SELCAL light should flash and CAWS chime should sound (Reset SELCAL).
  - (b) Short burst of audio tone is heard from VHF-3. This confirms that VHF-2 transmitted test message.
  - (c) A reply from ARINC ground station should extinguish LINK TEST and NO COMM lights.
  - (d) Failure in CU or MU causes respective CU FAIL or MU FAIL lights to come on.
  - (e) Successful contact automatically updates the GMT display to correct time.

NOTE: Holding LINK TEST pressed longer than 5 seconds extinguishes the lights.

- (13) Press GMT pushbutton on CU and note that GMT time is displayed in hours, minutes, and seconds on the display segments. Press several times to verify that display goes on and off (leave on).
 

NOTE: Update can only be done when airplane is in and is inhibited when out event occurs.
- (14) If automatic update did not occur during link test, set the GMT manually as follows:
  - (a) Press MISC pushbutton and then pushbutton 8 on the number keyboard. Number 8 should appear in the display.
  - (b) Press ENT. 0000 should appear in the display.
  - (c) Enter new GMT by pressing appropriate keyboard number pushbutton (enter four digits).
  - (d) Press ENT. New GMT is now in register and should be displayed.
- (15) Open these circuit breakers:

**UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS

All lights and display on CU should go off.

**WJE 401-403, 412, 881, 883**

- (16) Wait 2 minutes.
  - (a) Close these circuit breakers:

**UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS

**WJE 401-403, 412, 881, 883**

GMT should advance during the 2 minutes Alternating Current (AC) outage to read correct time.

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WJE 401-403, 412, 881, 883

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- (17) Press VOX MODE pushbutton. VHF-3 will tune to voice frequency.
- (18) Verify voice operation (radio check) on the tuned frequency.
- (19) Press DATA MODE pushbutton to return VHF-3 to data link frequency.  
NOTE: VHF-3 will automatically tune to an available ACARS data link frequency when in DATA MODE.
- (20) Press VOX MODE pushbutton on CU. VOX MODE pushbutton should light and DATA MODE pushbutton light should go out. VHF-2 now is under control of the pedestal VHF-2 control panel and tuned to the panel indicated frequency. Contact ARINC for radio check and SELCAL check.
- (21) Press DATA MODE pushbutton on CU. VHF-2 is now tuned to ACARS data line frequency of 131.55 MHz. Switching back to voice frequency puts DATA MODE pushbutton light out and lights VOX MODE pushbutton. Verify VHF-2 frequency is correct by cross checking several frequencies with VHF-2 (transmitting on VHF-2 and receiving same frequency on VHF-3).

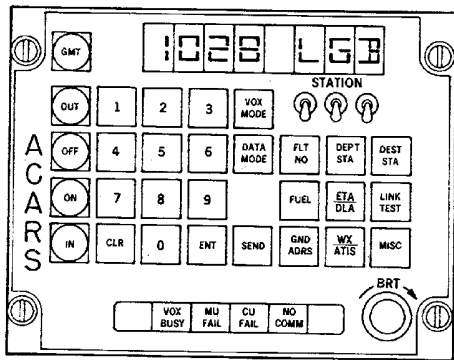
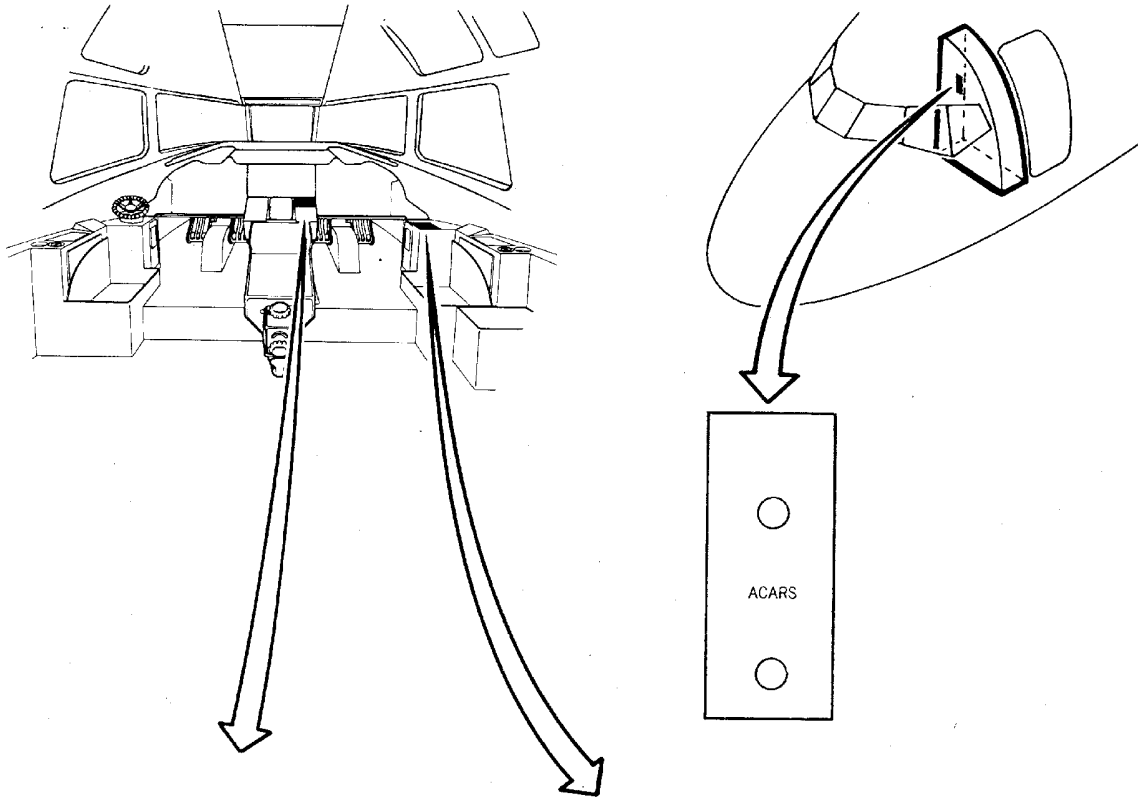
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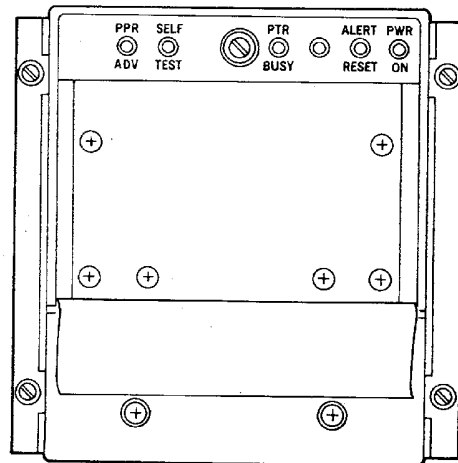
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ACARS CONTROL UNIT



ACARS PRINTER

BBB2-23-51

**ACARS Control Unit Location  
Figure 201/23-24-01-990-803**

EFFECTIVITY  
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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ACARS PRINTER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation for the Automatic Communication Addressing and Reporting System (ACARS) printer unit. The printer is located on the aft section of the right console. (Figure 201)

### 2. Removal/Installation

- A. Remove Printer

**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 BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
D	22	B10-424	FLIGHT MANAGEMENT SYSTEM-1 MCDU
<b>WJE 881, 883</b>			
D	22	B10-424	MCDU-1
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	10	B10-425	FLIGHT MANAGEMENT SYSTEM-2 MCDU

#### **UPPER EPC, RT AC**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
B	16	B10-425	MCDU-2

#### **WJE 401-403, 412, 881, 883**

- (2) Unfasten four quick release fasteners at each corner of unit.  
 (3) Slowly lift printer from cavity and disconnect electrical connectors and lanyard, if installed.

EFFECTIVITY  
 WJE 401-403, 412, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### B. Install Printer 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) Make sure that these circuit breakers are open and have safety tags:

#### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

#### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
D	22	B10-424	FLIGHT MANAGEMENT SYSTEM-1 MCDU
<b>WJE 881, 883</b>			
D	22	B10-424	MCDU-1
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

#### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

#### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	10	B10-425	FLIGHT MANAGEMENT SYSTEM-2 MCDU

#### UPPER EPC, RT AC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
B	16	B10-425	MCDU-2

#### WJE 401-403, 412, 881, 883

- (2) Visually check printer receptacle and mating connector for damage or foreign objects.
- (3) Connect electrical connector and lanyard (if installed) to printer receptacle.
- (4) Position printer into cavity.
- (5) Apply hand pressure to printer face, and lock four fasteners.

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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- (6) Remove the safety tags and close these circuit breakers:

### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
D	22	B10-424	FLIGHT MANAGEMENT SYSTEM-1 MCDU
<b>WJE 881, 883</b>			
D	22	B10-424	MCDU-1
<b>WJE 401-403, 412</b>			
F	11	B10-372	ACARS
<b>WJE 881, 883</b>			
F	18	B10-372	ACARS
<b>WJE 401-403, 412, 881, 883</b>			
F	23	B10-391	ACARS PRINTER

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
G	18	B10-374	ACARS

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-403, 412</b>			
F	10	B10-425	FLIGHT MANAGEMENT SYSTEM-2 MCDU

### UPPER EPC, RT AC

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 881, 883</b>			
B	16	B10-425	MCDU-2

### WJE 401-403, 412, 881, 883

- C. Replacing Paper
- (1) Unscrew door locking screw located in top center of printer hinged front panel door.
  - (2) Pivot door open to expose empty paper spool.
  - (3) Lift empty spool from rear of the door.
  - (4) Insert new paper roll into the paper roll mounting brackets with paper end on top of the roll and feed toward the inside of the chassis.
  - (5) Feed paper out through the opening at the bottom of the door.
  - (6) Partially close the door and hold end of paper flat against the indented portion on outside of the door to ensure paper will feed straight out when the door is closed.
  - (7) Close and secure front door by lifting and turning fastener clockwise.
- D. Test Printer Unit

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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- (1) Press PPR ADV or SLEW pushbutton on printer. Paper advances while pushbutton is pressed. Using the control knob on the background light control panel, make sure the printer faceplate background lights can be adjusted.
- (2) Verify test prints are complete with no missing characters, the intensity is fairly uniform, and the overall quality is reasonable.
- (3) Press SELF TEST pushbutton on printer. A 40 column test pattern is output as long as switch is depressed.
- (4) Press MISC 85 and ENT on control unit. Verify that printer prints following test message: "THE QUICK BROWN FOX JUMPS OVER 1234567890 LAZY DOGS." PTR BUSY light should flash and PRINTER MESSAGE annunciator on overhead annunciator panel should illuminate. Press ALERT RESET switch on printer and verify that PTR BUSY and PRINTER MESSAGE legend go out.

EFFECTIVITY  
WJE 401-403, 412, 881, 883

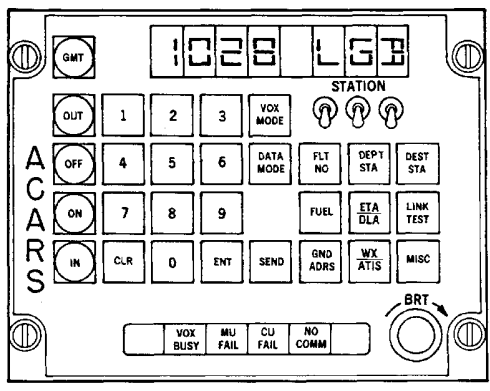
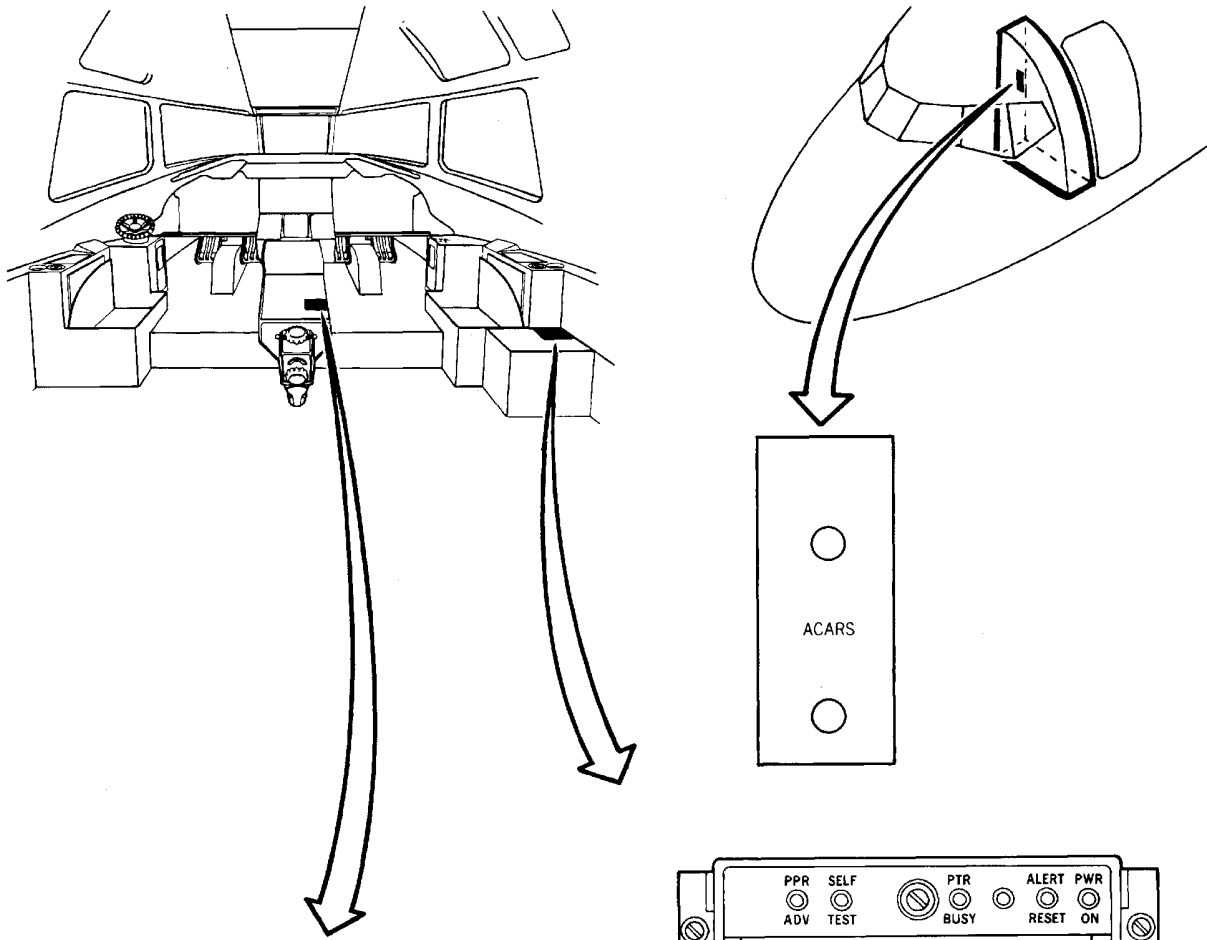
TP-80MM-WJE

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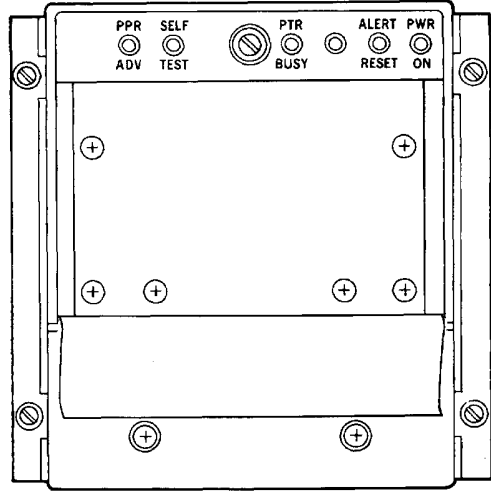
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ACARS CONTROL UNIT



ACARS PRINTER

BBB2-23-473

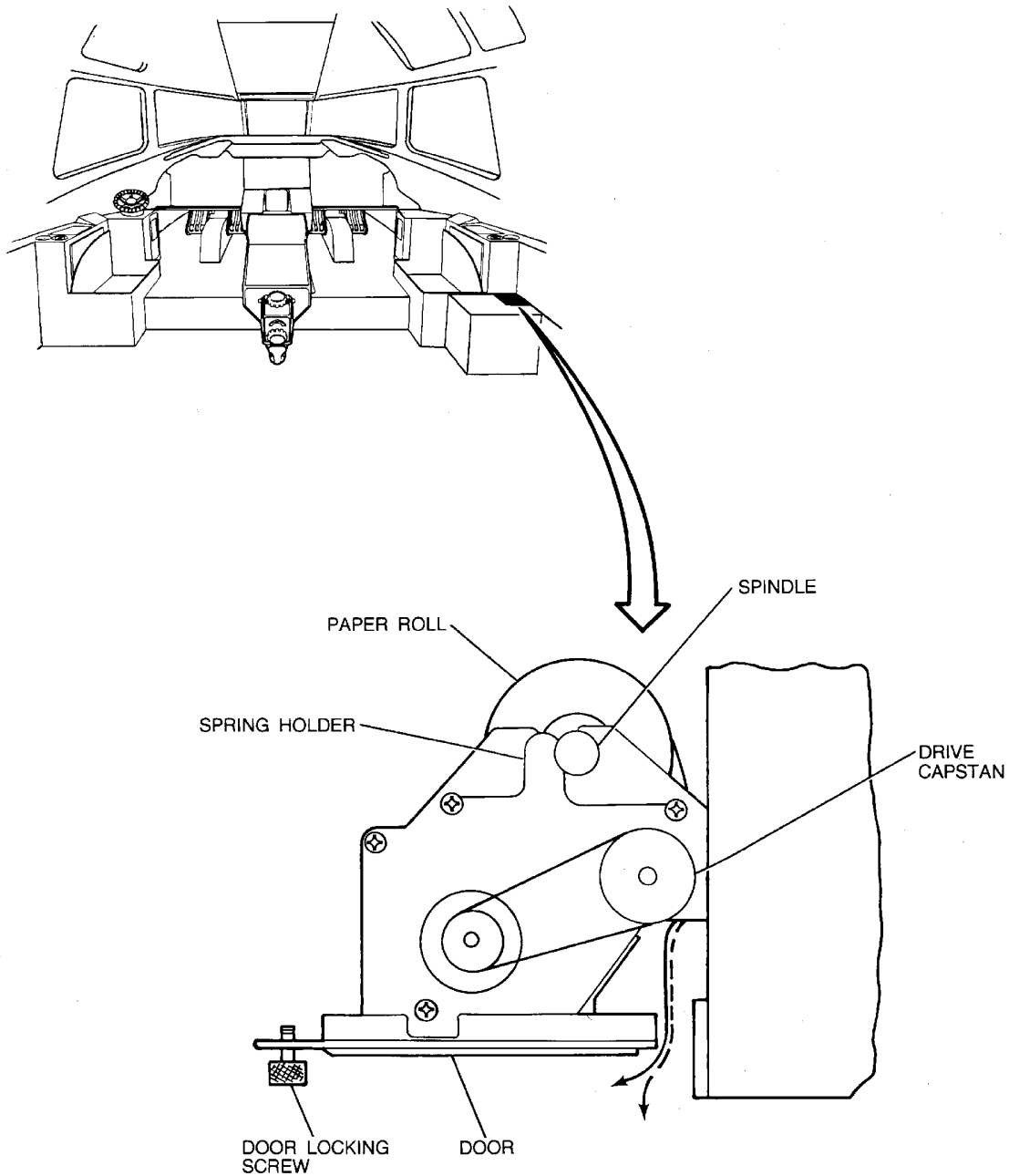
**ACARS Printer Location  
Figure 201/23-24-03-990-804**

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-23-474

**ACARS Printer Paper Loading**  
**Figure 202/23-24-03-990-809**

EFFECTIVITY  
WJE 401-403, 412, 881, 883

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ACARS PRINTER - CLEANING

### 1. General

A. This section provides cleaning procedures for the ACARS printer unit. Printer cleaning consists of cleaning the paper rollers, printer interior, print head, and printer exterior. The printer is located on the aft section of the right console.

### 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 701**

Name and Number	Manufacturer
Alcohol, denatured, ethyl DPM 514	Commercially available
Cloth, lint free	Commercially available
Cotton swab	Commercially available

### 3. Cleaning

A. Clean Printer Interior

**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	23	B10-391	ACARS PRINTER

(2) Unscrew door locking screw located in top center of printer door.

(3) Open printer door.

(4) Remove paper spool.

**WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1073, ETHYL ALCOHOL (DPM 514)

HAZMAT 1000, REFER TO MSDS

(5) Dampen lint free cloth with alcohol.

(6) Remove dust or foreign objects from interior of printer with dampened cloth.

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**CAUTION:** TOO MUCH SOLVENT CAN REMOVE THE BEARING LUBRICANT AND CAUSE DAMAGE TO THE ROLLER INSTALLATIONS.

- (7) Clean paper spindles and rollers with dampened cloth.
- (8) Dampen cotton swab with alcohol.
- (9) Clean printer head with cotton swab.
- (10) Insert paper roll into paper roll mounting brackets with paper end on top of roll and feed toward inside of chassis.
- (11) Feed paper out through opening at bottom of door.
- (12) Partially close printer door and hold end of paper flat against indented portion on outside of door to make sure paper will feed straight out when door is closed.
- (13) Close door and tighten door locking screw.
- (14) 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	23	B10-391	ACARS PRINTER

- (15) Return aircraft to required configuration.
- B. Clean Printer Exterior

**WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1073, ETHYL ALCOHOL (DPM 514)

HAZMAT 1000, REFER TO MSDS

- (1) Dampen lint free cloth with alcohol.
- (2) Clean exterior of printer with dampened cloth.
- (3) Return aircraft to required configuration.

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## OPTIONAL AUXILIARY TERMINAL (OAT) - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation for the Optional Auxiliary Terminal (O.A.T.). The unit is located in the electronic/electrical compartment. (Figure 201)

### 2. Removal/Installation

- A. Remove O.A.T.

**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 the applicable circuit breakers and install safety tags:

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	18	B10-372	ACARS

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	18	B10-374	ACARS

- (2) Loosen two hold down screws that hold O.A.T. unit in place on the equipment rack until screws fall free of unit's hold down hooks.
- (3) Grasp handle on front of O.A.T. unit and pull straight out to disengage rear connectors from mounting rack receptacles.
- (4) Slide unit out of equipment rack.

- B. Install O.A.T.

**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 BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	18	B10-373	ACARS MEMORY CLOCK

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	18	B10-372	ACARS

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	18	B10-374	ACARS

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**AIRCRAFT MAINTENANCE MANUAL**

- (2) Visually check O.A.T. unit receptacle and mating connector for damage or foreign objects. Make certain that no foreign matter is present on the mounting rack base, rails, and surfaces of cover of unit.
- (3) Position O.A.T. unit on assigned rack between rack rails and slide inward so that connector on rear of unit mates with the mating rack receptacles.
- (4) Perform system test listed in ACARS maintenance practices. (VHF DATA LINK (ACARS) - MAINTENANCE PRACTICES, PAGEBLOCK 23-24-00/201)

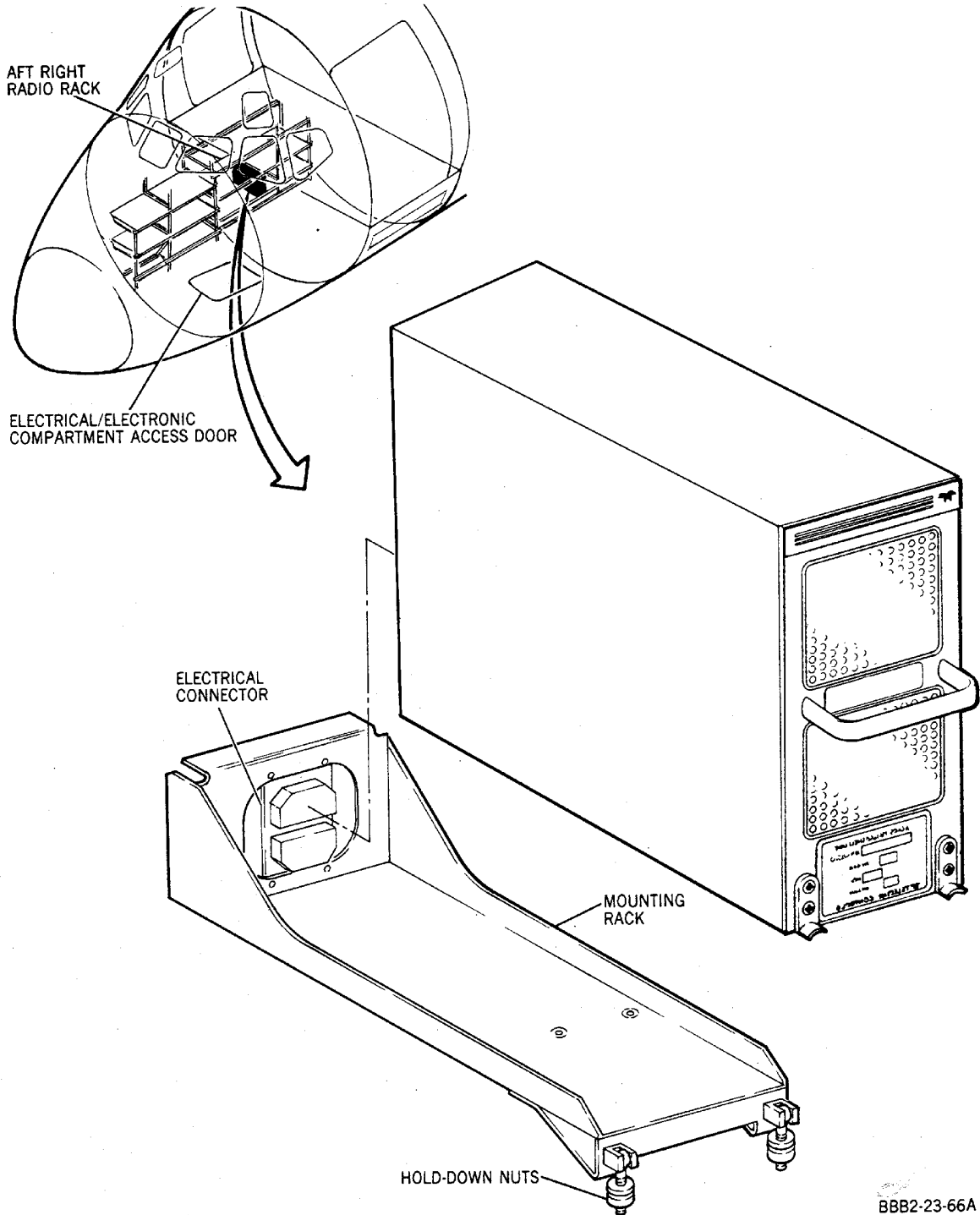
EFFECTIVITY  
WJE 881, 883

TP-80MM-WJE

**23-24-06**

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BBB2-23-66A

**ACARS OAT Unit Location**  
**Figure 201/23-24-06-990-804**

EFFECTIVITY  
WJE 881, 883

## 23-24-06

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER ADDRESS AND ENTERTAINMENT - DESCRIPTION AND OPERATION

#### 1. General

##### **WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891**

- A. The passenger address and entertainment system enables the pilots and cabin attendants to address passengers through the loudspeakers. The system is used to generate and transmit the chime tones associated with the call system and the passenger warning signs. The system may be used for passenger entertainment when a tape player is installed.

##### **WJE 881, 883, 886, 887, 892, 893**

- B. The passenger address and entertainment system enables the pilots and cabin attendants to address passengers through the loudspeakers. The system is also used to transmit the chime tones associated with the call system and the passenger warning signs. The system is also used for passenger entertainment through a tape player that is installed.

##### **WJE 401-404, 406-408, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 880, 891**

- C. The passenger address and entertainment system consist of an amplifier, preamplifier, handsets, pilots' microphones, cabin speakers, lavatory speakers, tape reproducer, and various switches, relays, and controls.

##### **WJE 405, 409, 884**

- D. The passenger address and entertainment system consist of an amplifier, handsets, pilots' microphones, cabin speakers, lavatory speakers, tape reproducer, an electronic chime, and various switches, relays, and controls.

##### **WJE 873, 874**

- E. The passenger address and entertainment system consist of an amplifier, handsets, pilots' microphones, cabin speakers, lavatory speakers, an electronic chime, and various switches, relays, and controls. Complete provisions are made for the installation of a tape player.

##### **WJE 410**

- F. The passenger address and entertainment system consist of an amplifier, handsets, pilots' microphones, cabin speakers, lavatory speakers, an electronic chime, and various switches, relays, controls and tape reproducer (if installed).

##### **WJE 881, 883, 886, 887, 892, 893**

- G. The passenger address and entertainment system consist of an amplifier, tape player, handsets, pilots' microphones, cabin speakers, lavatory speakers, an electronic chime, and various switches, relays, and controls.

##### **WJE 401-404, 406-408, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 880, 891**

- H. The passenger address and entertainment system consist of an amplifier, handsets, pilots' microphones, cabin speakers, lavatory speakers, an electronic chime, and various switches, relays, and controls.

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

### 2. System Components

WJE 401-404, 406-408, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- A. Passenger Address Amplifier - The passenger address amplifier is of completely solid-state design. The amplifier is calibrated to deliver 15 watts rms continuous power (60 watts rms peak) to the 83-ohm speaker system of the aircraft. The amplifier is a 1/4 ATR short unit weighing approximately 2.7 kg (6.0 lb) located on shelf 2 of the forward right radio rack. The amplifier contains high and low chime generators, a main amplifier channel and an auxiliary amplifier channel. Integral logic circuitry establishes priorities among inputs to the amplifier: pilots first, cabin attendants second, and entertainment tape player, third priority. The chime tones are not subject to priority switching. Self-test features on the front panel of the amplifier are a rotary TEST-NORM-CAL switch and three LED (light emitting diode) output indicators. The high chime oscillator supplies a test tone to the TEST-NORM-CAL switch, for checking amplifier and speaker circuits. Power is supplied to the amplifier from the 28-volt emergency dc bus through the system circuit breaker. The system will operate when the aircraft is powered by battery only.

WJE 405, 409, 410, 873, 874, 881, 883, 884, 886, 887, 892, 893

- B. Passenger Address Amplifier - The passenger address amplifier is of completely solid-state design. It is calibrated to deliver 15 watts rms continuous power (60 watts rms peak) to the 83-ohm speaker system of the aircraft. The amplifier is a 1/4 ATR short unit weighing approximately 2.7 kg (6.0 lb) located on shelf 2 of the forward right radio rack. Integral logic circuitry establishes priorities among inputs to the amplifier: pilots first, cabin attendants second, and entertainment tape player, third priority. The chime tones are not subject to priority switching. Self-test features on the front panel of the amplifier are a rotary TEST-NORM-CAL switch and three LED (light emitting diode) output indicators. An integral oscillator supplies a test tone to the TEST-NORM-CAL switch, for checking amplifier and speaker circuits. Power is supplied to the amplifier from the 28-volt emergency dc bus through the system circuit breaker. The system will operate when the aircraft is powered by battery only.

WJE 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 891

- C. Handsets - Handsets for passenger address are installed at the forward, intermediate, and aft cabin attendant stations and in the flight compartment at the pilots' station. The handsets are also used for service interphone and cabin interphone operation. Sidetone from the passenger address amplifier is directed to the handsets. A 10 dB screwdriver adjust potentiometer is located internal to each handset on the mouthpiece. The potentiometer controls the amount of microphone signal to the service and cabin interphone and P.A. systems.

WJE 405, 409, 884

- D. Handsets - Handsets for passenger address are installed at the forward, mid, and aft cabin attendant stations and in the flight compartment at the pilots' station. The handsets are also used for service interphone and cabin interphone operation. Sidetone from the passenger address amplifier is directed to the handsets. A 10 dB screwdriver adjust potentiometer is located internal to each handset on the mouthpiece. The potentiometer controls the amount of microphone signal to the service and cabin interphone and P.A. systems.

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 401-404, 406-408, 411, 412, 414, 880, 886, 887

- E. Handsets - Handsets for passenger address are installed at the forward, intermediate, and aft cabin attendant stations and in the flight compartment at the pilots' station. The handsets are also used for service interphone and cabin interphone operation. Sidetone from the passenger address amplifier is directed to the handsets. Handsets at the attendant stations have integral PA push to announce and attendant calling pushbuttons. When the pushbuttons are actuated a green LED light will come on.

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

- F. Handsets - Handsets for passenger address are installed at the cabin attendant stations and in the flight compartment at the pilots' station. The handsets are also used for service interphone and cabin interphone operation. Sidetone from the passenger address amplifier is directed to the handsets. Handsets at the attendant stations have integral PA push to announce and attendant calling pushbuttons. When the pushbuttons are actuated a green LED light will come on.

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

- G. Microphones - The pilots' oxygen mask microphones, in conjunction with the OXY MASK MIKE switches on the pilots' consoles, may be used in emergency situations or as required. (PAGEBLOCK 23-50-00/001)

### WJE 401-404, 406-408, 410-412, 414, 873, 874, 880

- H. Microphones - The pilots' oxygen mask microphones, in conjunction with the NORMAL - MASK PA switches on the pilots' jack panels, may be used in passenger address in emergency situations or as required. (PAGEBLOCK 23-50-00/001)

### WJE 405, 409, 881, 883, 884, 886, 887, 892, 893

- I. Microphones - Any of the flight crew microphones may be used in passenger address, through the audio integrating system. The pilots' oxygen mask microphones, in conjunction with the NORMAL - MASK PA switches on the pilots' jack panels, may be used in emergency situations or as required. (PAGEBLOCK 23-50-00/001)

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

- J. Speakers - A sufficient number of loudspeakers is installed to give practical coverage of the cabin area. The speakers are located in the overhead stowage racks, (two above each seat-row), in the lavatories, galleys, and in the ceiling above the forward, intermediate and aft cabin attendant stations.

### WJE 401-405, 409, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 874, 884

- K. Speakers - A sufficient number of loudspeakers is installed to give practical coverage of the cabin area. The speakers are located in the overhead stowage racks, (two above each seat-row), in the lavatories, and in the ceiling above the forward, intermediate and aft cabin attendant stations.

### WJE 881, 883, 886, 887, 892, 893

- L. A sufficient number of transformerless loudspeakers are installed to give practical coverage of the cabin area. The speakers are located in the overhead stowage racks, (two above each seat-row), in the lavatories, and in the ceiling above the forward, intermediate and aft cabin attendant stations.

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### **WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 874, 884, 891**

- M. PA Relay and Interlock Panel - The passenger address interlock relays switch the handset connections between the passenger address system and the service interphone system, as required. In the passenger address system, the relays establish priorities for connecting the crew handsets to the public address amplifier: pilots first, forward cabin attendant second, and intermediate and aft cabin attendants third priority. The relay interlock panel is located on the relay panel of the forward right radio rack.

### **WJE 401-404, 406-408, 411, 412, 414, 880, 881, 883, 886, 887, 892, 893**

- N. Electronic Switching Unit - The passenger address electronic switching unit switches the handset connections between the passenger address system and the service interphone system, as required. In the passenger address system, the switching unit establishes priorities for connecting the crew handsets to the passenger address amplifier: pilots first, forward cabin attendant second, and intermediate and aft cabin attendants third priority. The electronic switching unit is located on the radio rack equipment panel.

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

- O. Electronic Switching Unit - The passenger address electronic switching unit switches the handset connections between the passenger address system and the service interphone system, as required. In the passenger address system, the switching unit establishes priorities for connecting the crew handsets to the passenger address amplifier: pilots first, forward cabin attendant second, and aft cabin attendants third priority. The electronic switching unit is located on the radio rack equipment panel.

### **WJE 401-404, 406-408, 410-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 886, 887, 891-893**

- P. PA Automatic Gain Feature - The fuel lever shutoff switches supply a binary input to the control logic of the passenger address amplifier to switch amplifier gain between engines off and engines on value. With engines on, gain is 6 dB higher than the engines off value, to compensate for engine noise. The same switches add additional resistance into series with the VU meters in the engines on mode, to prevent their being overdriven by the increased output of the amplifier. The fuel lever shutoff switches are located on the pedestal.

### **WJE 405, 409, 884**

- Q. PA Automatic Gain Feature - The fuel lever shutoff switches supply a binary input to the control logic of the passenger address amplifier to switch amplifier gain between engines off and engines on value. With engines on, gain is 6 dB higher than the engines off value, to compensate for engine noise. The same switches add additional resistance into series with the VU meters in the engines on mode, to prevent their being overdriven by the increased output of the amplifier. The fuel lever shutoff switches are located on the pedestal.

### **WJE 401-404, 412, 414, 881, 883, 886, 887, 892, 893**

- R. VU Meter - A single VU meter is installed, to indicate the relative volume level of the passenger address amplifier output. The meter is located on the overhead switch panel. The meter is connected in parallel across the amplifier output, through adjustable series potentiometers located inside the forward cabin attendant's console.

EFFECTIVITY  
WJE ALL

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

- S. VU Meters - Two VU meters are installed, to indicate the relative volume level of announcements by cabin attendants. The meters are located on the forward cabin attendant's panel, and the aft cabin attendant's panel. Volume level of announcements by either pilot is monitored by circuitry and lights in the SELCAL/PA LEVEL panel located on the pedestal. The meters and panel are connected in parallel across the amplifier output, through adjustable series potentiometers located inside the forward cabin attendant's console.

### WJE 405, 409, 410, 873, 874, 884

- T. VU Meters - Three VU meters are installed, to indicate the relative volume level of the passenger address amplifier output. The meters are located on the overhead switch panel, the forward cabin attendant's panel, and the aft cabin attendant's panel. The meters are connected in parallel across the amplifier output, through adjustable series potentiometers located inside the forward cabin attendant's console.

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

- U. Selcal/PA Level Panel - Volume level of announcements by either pilot is monitored by circuitry and lights in the SELCAL/PA LEVEL panel located on the pedestal. The PA LEVEL lights in the panel are connected in parallel across the amplifier output, through adjustable series potentiometers located inside the forward cabin attendant's console.

### WJE 401-404, 406-408, 411, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 880, 891

- V. Chimes - The high-chime (587 Hz) and low-chime (494 Hz) generators in the passenger address amplifier comprise solid-state oscillators which are keyed by 28-volt inputs from various switches in the aircraft. The high chime is keyed by the passenger-to-attendant and lavatory call switches. High-low chimes are keyed by pilot-to-attendant, attendant-to-attendant call switches and the cabin low-pressure warning switch. The low chime is keyed by 28 volts from NO SMOKING and FASTEN SEAT BELTS relays when either of those signs is switched on; the chime sounds again when either sign is switched off and the 28-volt input is removed from the low chime logic of the amplifier.

### WJE 405, 409, 410, 873, 874, 881, 883, 884, 886, 887, 892, 893

- W. Chime - The electronic chime comprises a solid-state oscillator with an adjustable output volume control located on its front panel. The call system circuit breaker controls operating power. The chime produces a single 740 Hz tone whenever it is keyed by a 28-volt input from the pilot-attendant, attendant-attendant, or passenger-attendant call switches, or from the NO SMOKING or FASTEN SEAT BELTS relays. The tone is distributed through the passenger address amplifier to all P.A. speakers. The chime is located on the equipment panel of the forward right radio rack.

### WJE 401-404, 407, 408, 411, 412, 414, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 891

- X. The dual microphone preamplifier contains two amplifiers. Each preamplifier is adjustable up to 26dB gain and provides dc voltage to the microphone input for carbon or carbon equivalent microphones.

### WJE 401-404, 406, 412, 414-416, 418, 425, 426, 861-866, 868, 881, 883 POST MD80-23-077

- Y. External Gain Control Switch - The external gain control switch is installed in the radio rack. The switch is a three position rotary switch that allows selection of three levels (LOW, MED, HIGH) of PA amplifier gain. The switch provides output from the PA system to be adjusted by  $\pm 3$ dB to compensate for long term system changes.

### WJE 405, 409, 410, 884

- Z. Tape Reproducer - Refer to VHF - DESCRIPTION AND OPERATION, PAGEBLOCK 23-20-00/001 Config 1.

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

### 3. Operation

- A. Audio frequency sound energy picked up by the microphone in the handset is converted to electrical energy and fed as input to the passenger address amplifier. When the system is used for passenger entertainment, magnetic tape in the tape player supplies, through the tape pick-up head, an input to the passenger address amplifier.

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

- B. Amplifier inputs are connected in a priority sequence: the pilots' control has first priority, the cabin attendant's has second priority, and the tape player (when installed) has third priority. The amplifier input logic and the PA interlock relays are connected so that the pilots' push-to-talk switch has full control over the amplifier, disconnecting any other input. Pilot inputs through the OXY MASK MIKE switches bypass the PA interlock relays, going directly to the amplifier input, with the captain's input taking priority over the first officer's. The cabin attendants' push-to-talk switches have automatic priority over inputs from the tape player. The chime tones are not subject to priority switching, but are passed through the amplifier along with any other audio that may be present when the chime is actuated. Volume level is changed to overcome the differential between engines off and engines on noise levels by the fuel lever shutoff switches when the engines are turned on or turned off. Sidetone for the handsets and the audio integrating system is taken from a sidetone level potentiometer in the amplifier, that is connected to the amplifier's main output. Therefore, the presence of normal sidetone during an announcement indicates that the system is functioning properly up to the output drivers of the amplifier.

WJE 401-404, 412, 414, 880

- C. Amplifier inputs are connected in a priority sequence: the pilots' control has first priority, the cabin attendant's has second priority, and the tape player (when installed) has third priority. The amplifier input logic and the PA interlock relays are connected so that the pilots' push-to-talk switch has full control over the amplifier, disconnecting any other input. The cabin attendants' push-to-talk switches have automatic priority over inputs from the tape player. The chime tones are not subject to priority switching, but are passed through the amplifier along with any other audio that may be present when the chime is actuated. Volume level is changed to overcome the differential between engines off and engines on noise levels by the fuel lever shutoff switches when the engines are turned on or turned off. Sidetone for the handsets and the audio integrating system is taken from a sidetone level potentiometer in the amplifier that is connected to the amplifier's main output. Therefore, the presence of normal sidetone during an announcement indicates that the system is functioning properly up to the output drivers of the amplifier.

WJE 405-411, 881, 883, 884

- D. Amplifier inputs are connected in a priority sequence: the pilots' control has first priority, the cabin attendant's has second priority, and the tape player (when installed) has third priority. The amplifier input logic and the PA interlock relays are connected so that the pilots' push-to-talk switch has full control over the amplifier, disconnecting any other input. The cabin attendants' push-to-talk switches have automatic priority over an input from a tape player. The chime tones are not subject to priority switching, but are passed through the amplifier along with any other audio that may be present when the chime is actuated. The volume level is changed to overcome the differential between engines off and engines on noise levels by the fuel lever shutoff switches when the engines are turned on or turned off. Sidetone for the handsets and the audio integrating system is taken from a sidetone level potentiometer in the amplifier that is connected to the amplifier's main output. Therefore, the presence of normal sidetone during an announcement indicates that the system is functioning properly up to the output drivers of the amplifier.

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### WJE 873, 874

- E. Amplifier inputs are connected in a priority sequence: the pilots' control has first priority, the cabin attendant's has second priority, and the tape player (when installed) has third priority. The amplifier input logic and the PA interlock relays are connected so that the pilots' push-to-talk switch has full control over the amplifier, disconnecting any other input. The cabin attendants' push-to-talk switches have automatic priority over an input from a tape player. The chime tones are not subject to priority switching, but are passed through the amplifier along with any other audio that may be present when the chime is actuated. Volume level is changed to overcome the differential between engines off and engines on noise levels by the fuel lever shutoff switches when the engines are turned on or turned off. Sidetone for the handsets and the audio integrating system is taken from a sidetone level potentiometer in the amplifier, that is connected to the amplifier's main output. Therefore, the presence of normal sidetone during an announcement indicates that the system is functioning properly up to the output drivers of the amplifier.

### WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893

- F. Amplifier inputs are connected in a priority sequence: the pilots' control has first priority, the cabin attendant's has second priority, and the tape player (when installed) has third priority. The amplifier input logic and the electronic switching unit are connected so that the pilots' push-to-talk switch has full control over the amplifier, disconnecting any other input. The cabin attendants' push-to-talk switches have automatic priority over an input from a tape player. The chime tones are not subject to priority switching, but are passed through the amplifier along with any other audio that may be present when the chime is actuated. Volume level is changed to overcome the differential between engines on and engines off noise levels by the fuel lever shutoff switches. Sidetone for the handsets and the audio integrating system is taken from a sidetone level potentiometer in the amplifier, that is connected to the amplifier's main output. Therefore, the presence of normal sidetone during an announcement indicates that the system is functioning properly up to the output drivers of the amplifier.

### WJE 401-404, 406-408, 411, 412, 414, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 891

- G. After amplification, the output of the amplifier is fed to all system speakers. The system speakers convert the electrical energy to audible sound energy. The system can be operated from the cabin attendant stations only when the flight compartment handset is in its hanger, no passenger address from the audio integrating system is in progress, and the announce switch on the cabin attendant panel is pressed. The attendants' speakers are silenced during announcements from the cabin attendants' stations. The aft galley and lavatory speaker outputs are reduced in volume during announcements from the intermediate and aft cabin attendants' stations. Forward lavatory speaker output is reduced when the lavatory door is open.

### WJE 405, 409, 410, 873, 874, 881, 883, 884, 886, 887, 892, 893

- H. After amplification, the output of the amplifier is fed to all system speakers. The system speakers convert the electrical energy to audible sound energy. The system can be operated from the cabin attendant stations only when the flight compartment handset is in its hanger, no passenger address from the audio integrating system is in progress, and the announce switch on the cabin attendant panel is pressed. The forward attendant's speaker is silenced during announcements from the forward cabin attendant's station. The aft attendant and lavatory speakers outputs are reduced in volume during announcements from the intermediate and aft cabin attendants' stations.

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

- I. After amplification, the output of the amplifier is fed to all system speakers. The system speakers convert the electrical energy to audible sound energy. The system can be operated from the cabin attendant stations only when the flight compartment handset is in its hanger, no passenger address from the audio integrating system is in progress, and the announce switch on the cabin attendant handset is pressed. The forward attendant's speaker is silenced during announcements from the forward cabin attendant's station. The aft attendant and lavatory speakers outputs are reduced in volume during announcements from the aft cabin attendants' station.

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

#### 4. To Operate System

##### A. Operate Passenger Address

NOTE: Following steps describe passenger address operation using flight compartment handset. To operate from cabin attendant stations, use comparable controls. For operation using pilot's microphones, refer to PAGEBLOCK 23-50-00/001.

**Table 1**

Control		Position
(1)	Handset hanger switch	Handset removed
(2)	PA pushbutton on overhead switch panel	Pressed momentarily
(3)	Handset press-to-talk switch	Pressed and held

##### B. Provide Passenger Entertainment

**Table 2 Provide Passenger Entertainment**

Control		Position
(1)	MUSIC control on forward cabin attendant panel (When tape player installed)	Switched on and rotated to desired speaker volume

**WJE 875-879**

#### 5. General

- A. The passenger address and entertainment system enables the pilots and attendants to address passengers through the loudspeakers. The system is used to generate and transmit the chime tones associated with the call system and the passenger warning signs. The system is used for broadcasting boarding music.
- B. The passenger address and entertainment system consist of an amplifier, four handsets, pilots' microphones, cabin speakers, lavatory speakers, electronic switching unit, tape reproducer, and various switches and controls.

#### 6. Description

- A. Passenger Address Amplifier - The passenger address amplifier amplifies the flight crew and attendants' handset inputs, produces high and low chime signals, accepts inputs from the announcement and entertainment tape reproducers, and supplies a sidetone audio signal to the handsets. The amplifier has four input channels (1-4):
  - Channel 1: Inputs from the cockpit microphones.
  - Channel 2: Inputs from the cabin handset.
  - Channel 3: Inputs from prerecorded announcements system.
  - Channel 4: Inputs from boarding music tape reproducer.

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### WJE 875-879 (Continued)

The PA amplifier establishes priority for inputs: channel 1 first, channel 2 second, channel 3 third, and channel 4 fourth. The channel with higher priority supersedes all inputs of a lower priority.

The PA amplifier has two output channels, main and auxiliary:

- Main: Outputs to all of the loudspeakers except those at attendant stations.
- Auxiliary: Outputs to loudspeakers at attendant stations.

The front panel of the PA amplifier contains: a three digit LED display, a Test Mode switch, and a MASTER GAIN potentiometer. The LED display is used to display the measurements obtained in the different Test Mode switch positions.

The Test Mode switch is a four position rotary switch: LOAD, TONE, OPERATE, and LEVEL. The LOAD position displays the PA system impedance. The TONE position produces the 587 Hz test tone throughout the PA system. The OPERATE position is the position the switch must be in for normal operation of the PA system. The LEVEL position displays the rms voltage of the PA amplifier output.

The MASTER GAIN potentiometer is a factory set output level adjustment and should not be adjusted in the aircraft.

Power is supplied to the amplifier from the 28-volt emergency dc bus through the system circuit breaker. The system will operate when the aircraft is powered by battery only. The PA amplifier is located in the forward right radio rack of the electrical/electronic compartment.

- B. Handsets - Handsets for passenger address are installed at the forward, mid, and aft cabin attendant stations and in the flight compartment at the aft pedestal. The handsets are also used for cabin interphone operation. Sidetone from the passenger address amplifier is directed to the handsets. Handsets at the attendant stations have integral PA push to announce and attendant calling pushbuttons. When the pushbuttons are actuated a green LED light will come on.
- C. Microphones - The pilots' oxygen mask microphones, in conjunction with the NORMAL - MASK PA switches on the pilots' jack panels, may be used in passenger address in emergency situations or as required. (AUDIO INTEGRATING - DESCRIPTION AND OPERATION, PAGEBLOCK 23-50-00/001, Page 1)
- D. Loudspeakers - A sufficient number of loudspeakers is installed to give practical coverage of the cabin area. The speakers are located in the overhead stowage racks, (two above each seat-row), in the lavatories, and in the ceiling above the forward, mid, and aft cabin attendant stations.
- E. Electronic Switching Unit (ESU) - The electronic switching unit switches the handset connections between the passenger address system and the service interphone system. All three attendants' handsets are connected to the ESU which combines the handset inputs and applies them to input channel 2 of the PA amplifier. The ESU also establishes priorities for the attendant handsets: forward cabin attendant first, and mid and aft cabin attendants second. The electronic switching unit is located on the forward right radio rack equipment panel in the electrical/electronic compartment.
- F. PA Automatic Gain Feature - The fuel lever shutoff switches apply a ground to the automatic gain circuit of the passenger address amplifier to switch amplifier gain between engines off and engines on value. With engines on gain is 6 dB higher than the engines off value to compensate for engine noise. The same switches add resistance in series with the VU meter in the engines on mode, to prevent overdriving the meter with the increased output of the amplifier. The fuel lever shutoff switches are located on the pedestal.

The PA amplifier is also connected to the Cabin Low Pressure Warning Relay. In the event of an emergency cabin decompression, the Cabin Low Pressure Warning Relay applies a ground to the amplifier automatic gain circuit which produces a 3 dB increase in amplifier gain. This feature is provided to increase PA volume during emergency decompression.

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### WJE 875-879 (Continued)

- G. VU Meter - A single VU meter is installed to indicate the relative volume level of the passenger address amplifier output. The meter is located on the overhead switch panel. The meter is connected in parallel across the amplifier output.
- H. Chimes - The high-chime and low-chime generators in the passenger address amplifier are solid-state oscillators which are keyed by 28-volt inputs from various switches in the aircraft.  
The high chime is keyed by the passenger-to-attendant and lavatory call switches. High-low chimes are keyed by pilot-to-attendant, attendant-to-attendant call switches and the cabin low-pressure warning switch. The low chime is keyed by 28 volts from NO SMOKING and FASTEN SEAT BELTS relays when either of those signs is switched on; the chime sounds again when either sign is switched off and the 28-volt input is removed from the low chime logic of the amplifier.
- I. External Gain Control Switch - the external gain control switch is installed in the aft right radio rack. The switch is a three position rotary switch that allows selection of three levels (LOW, MED, HIGH) of PA amplifier gain. The switch provides variable output levels from the PA system.

### 7. Operation

- A. Audio picked up by the handset microphone is input to the passenger address amplifier. When the system is used for passenger entertainment, the tape reproducer supplies an input to the passenger address amplifier.
- B. The passenger address amplifier establishes priority for inputs: channel 1 first, channel 2 second, channel 3 third, and channel 4 fourth. The channel with higher priority supersedes all inputs of a lower priority. The ESU also establishes priorities for connecting the three attendant handsets to the passenger address amplifier: forward attendant's first, and mid and aft attendants' second.  
The combination of the amplifier and the ESU priorities creates overall PA system input priorities of: pedestal handset and cockpit microphones first, forward attendant's handset second, mid and aft attendants' handsets third, prerecorded announcements fourth, and boarding music tape reproducer fifth. The chime tones are not subject to priority switching, but are passed through the amplifier along with any other audio that may be present when the chime is actuated.
- C. Volume level is changed to overcome the differential between engines off and engines on noise levels by the fuel lever shutoff switches when the engines are turned on or turned off. The volume level will also be increased by the Cabin Low Pressure Warning Relay, in the event of an emergency decompression.
- D. Sidetone for the cabin handsets and the cockpit microphones is taken from a sidetone level potentiometer in the amplifier that is connected to the amplifier's main output. The presence of normal sidetone during an announcement indicates that the system is functioning properly up to the output drivers of the amplifier.
- E. The output of the amplifier is applied to all system speakers. The system can be operated from the cabin attendant stations only when the flight compartment handset is in its hanger, no passenger address from the cockpit microphones is in progress, and the PA announce switch on the cabin attendant handset is pressed. The attendants' speakers are muted during announcements from the cabin attendants' stations. The aft galley and lavatory speaker outputs are reduced in volume during announcements from the mid and aft cabin attendants' stations. Forward lavatory speaker output is reduced when the lavatory door is open.

### 8. To Operate System

NOTE: Following steps describe passenger address operation using flight compartment handset. To operate from attendants' stations, use comparable controls. For operation using pilot's microphones, refer to PAGEBLOCK 23-50-00/001.

- A. Operate Passenger Address

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**WJE 875-879 (Continued)**

- (1) Remove aft pedestal handset from hanger.
  - (2) Press PA pushbutton on overhead switch panel.
  - (3) Press and hold handset PTT switch.
  - (4) Speak into handset.
  - (5) Release PTT.
  - (6) Replace handset in hanger.
- B. Passenger Entertainment
- (1) Adjust MUSIC control on forward cabin attendant panel to midrange.

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER ADDRESS AND ENTERTAINMENT - TROUBLE SHOOTING

### 1. General

- A. Trouble Shooting procedures provided in this section are basic procedures for isolating and correcting faults in the passenger address and entertainment system in the aircraft.
- B. The basic causes of faulty system operation and crew squawks are faulty aircraft wiring, faulty Line Replaceable Unit (LRU) or LRU misadjustment.
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.

**WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871-879, 884, 891**

- D. The major components of the system are the passenger address amplifier, preamplifier, handsets, PA relay and interlock panel, and speakers. The system interfaces with the audio integrating system. In Trouble Shooting, some checks may have to be made in those systems components and wiring. If the PA preamplifier and/or PA amplifier are suspected of misadjustment, the LRU's must be removed from the aircraft and adjusted per the applicable sections of the Douglas Aircraft Company Component Maintenance Manual (Ref. 23-30-01 and 23-30-04).

**WJE 401-404, 406, 412, 414, 881, 883, 886, 887, 892, 893**

- E. The major components of the system are the passenger address amplifier, preamplifier, handsets, Electronic Switching Unit, and speakers. The system interfaces with the audio integrating system. In Trouble Shooting, some checks may have to be made in those systems components and wiring. If the PA preamplifier and/or PA amplifier are suspected of misadjustment, the LRU's must be removed from the aircraft and adjusted per the applicable sections of the Douglas Aircraft Company Component Maintenance Manual (Ref. 23-30-01 and 23-30-04).

**WJE ALL**

- F. System components are located as follows:

**Table 101 Component Location**

Component	Location
Passenger Address Amplifier	Forward Right Radio Rack, Electrical/Electronic Compartment
<b>WJE 401-404, 412, 414</b>	
Handsets	Flight Compartment Pedestal, Forward and Aft Cabin Attendant Panels
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>	
Handsets	Flight Compartment Pedestal, Forward, Mid, and Aft Cabin Attendant Panels
<b>WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871-879, 884, 891</b>	
PA Relay & Interlock Panel	Relay Panel, Forward Right Radio Rack
<b>WJE 401-404, 406, 412, 414, 881, 883, 886, 887, 892, 893</b>	
Electronic Switching Unit	Radio Rack Equipment Panel
<b>WJE ALL</b>	
Speakers	Cabin Ceiling, Overhead Stowage Racks, Lavatories, and Galleys

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Circuit Breakers

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	8	B10-118	PASSENGER ADDRESS
<b>WJE 410</b>			
A	9	B10-118	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
F	19	B10-120	PASSENGER MUSIC
<b>WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	19	B10-121	PASSENGER MUSIC

## 2. Equipment and Materials

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

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 102**

Name and Number	Manufacturer
Multimeter, digital, Danameter 2000A	Dana Instruments, Inc.

## 3. Trouble Shooting Service Interphone

A. Trouble Shooting

### **WJE 405, 407-411, 415-427, 429, 861-866, 868, 869, 871-879, 884, 891**

NOTE: During continuity, power, and ground checks, it may be necessary to refer to wiring diagram manual for terminal board connections and wire identification. LRUs are passenger address amplifier, handsets, interlock relays, audio control panels, passenger address preamplifier and service interphone amplifier.

### **WJE 406, 881, 883, 886, 887, 892, 893**

NOTE: During continuity, power, and ground checks, it may be necessary to refer to wiring diagram manual for terminal board connections and wire identification. LRUs are passenger address amplifier, handsets, Electronic Switching Unit, audio control panels, passenger address preamplifier and service interphone amplifier.

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**Table 103**

Step	Procedure	Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Check for proper grounds at LRUs. 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 LRUs.
(3)	Perform continuity check of aircraft wiring. A hot continuity check may be required to check operation of relays or other associated active components to complete continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.
(4)	Replace suspected faulty LRU or component with a known operational unit.	Replace faulty LRU or component.

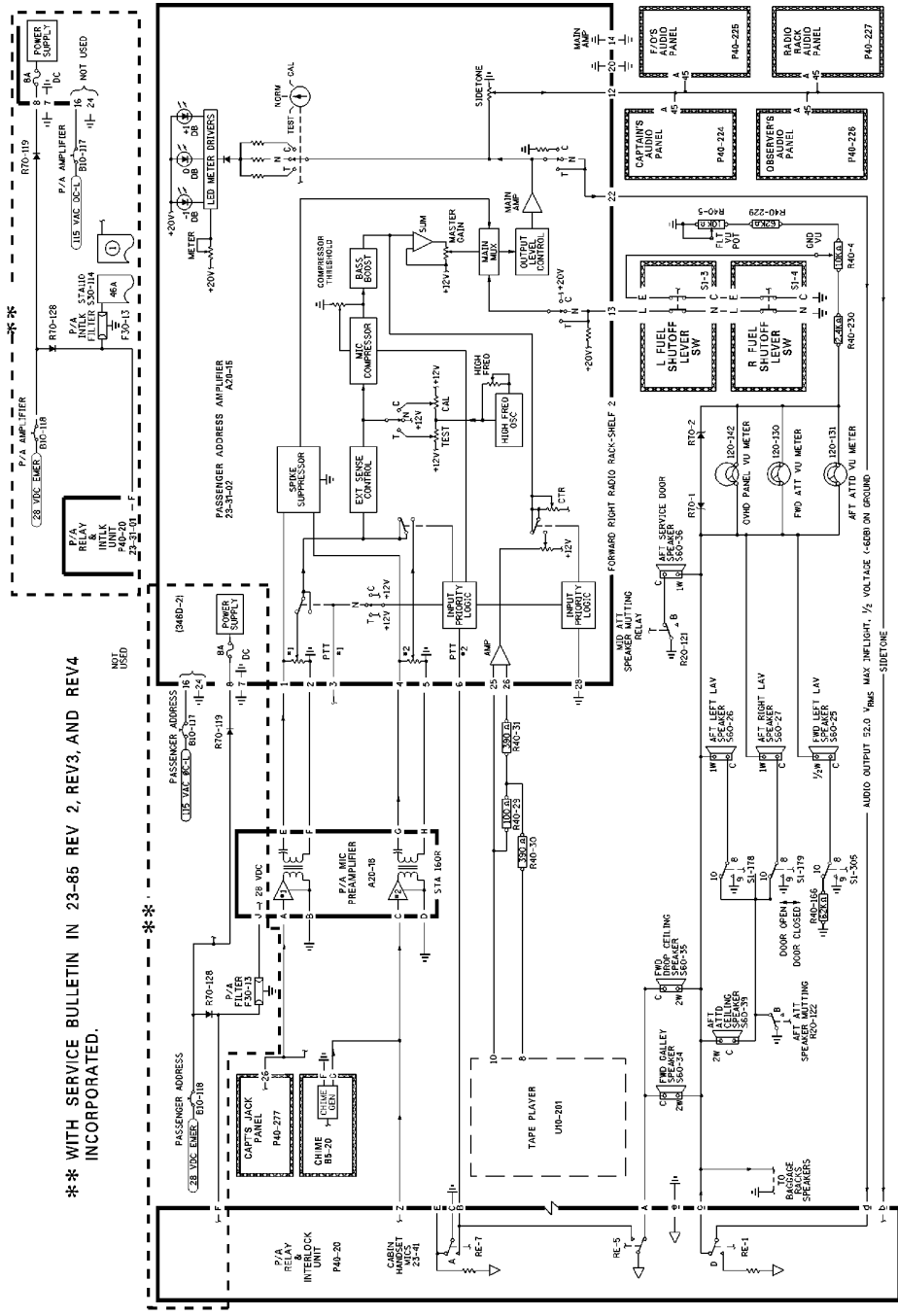
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**PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC**  
Figure 101/23-30-00-990-809 (Sheet 1 of 10)

BB82-23-328A

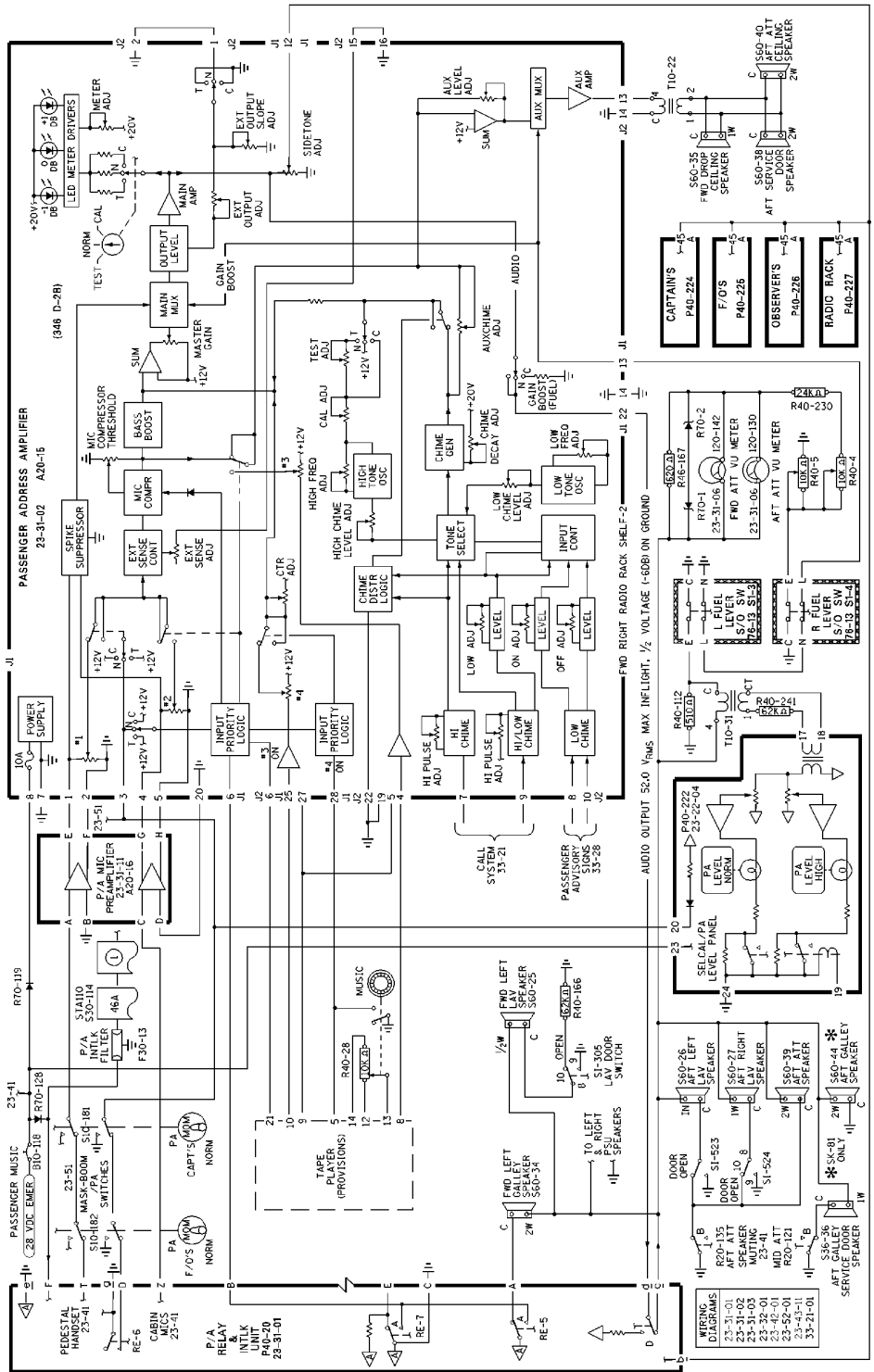
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EFFECTIVITY  
WJE 405, 409, 884

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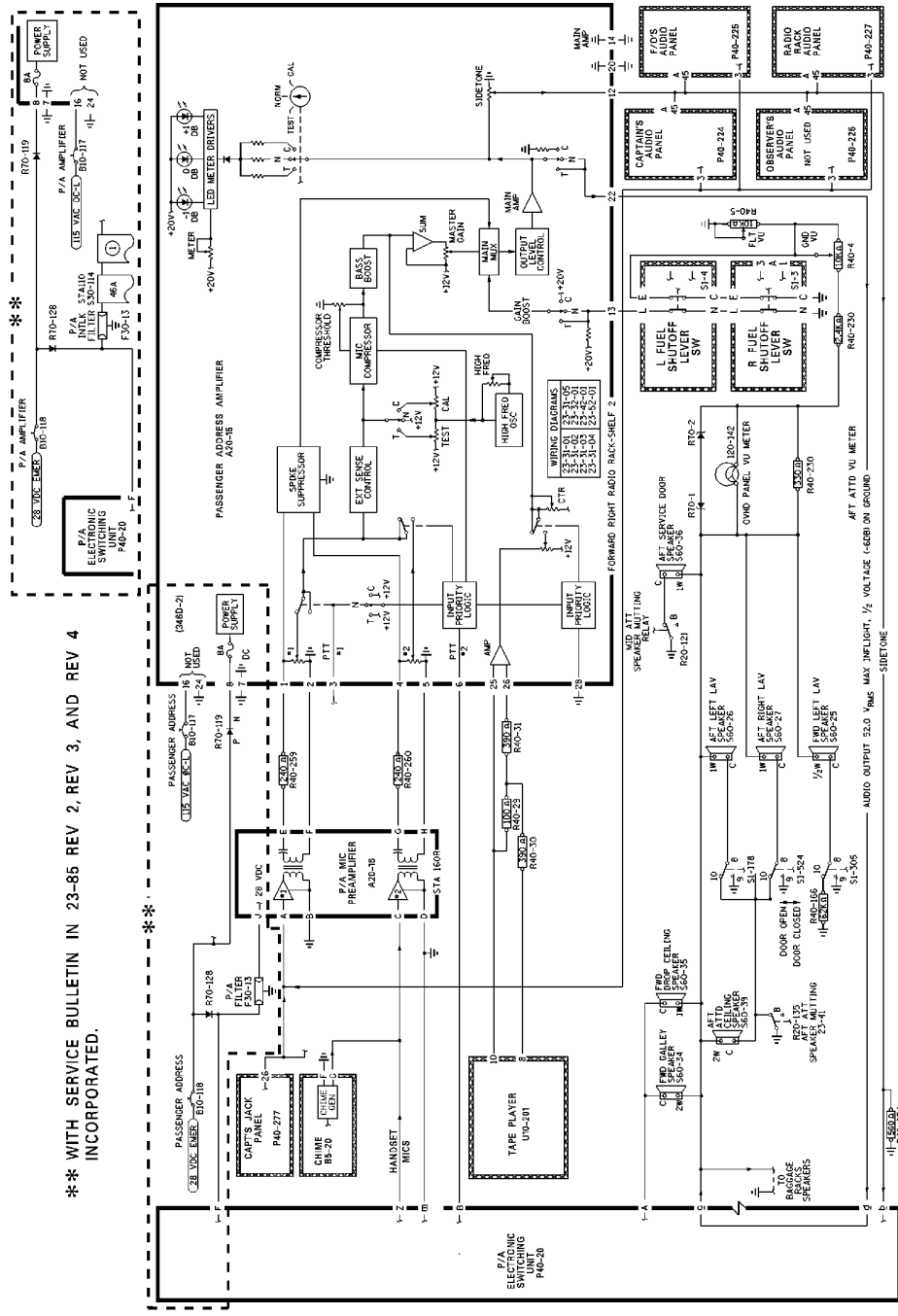
**PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC**  
Figure 101/23-30-00-990-809 (Sheet 2 of 10)

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

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MDC PROPRIETARY

**PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC**  
Figure 101/23-30-00-990-809 (Sheet 3 of 10)

CAG(I/GDS)

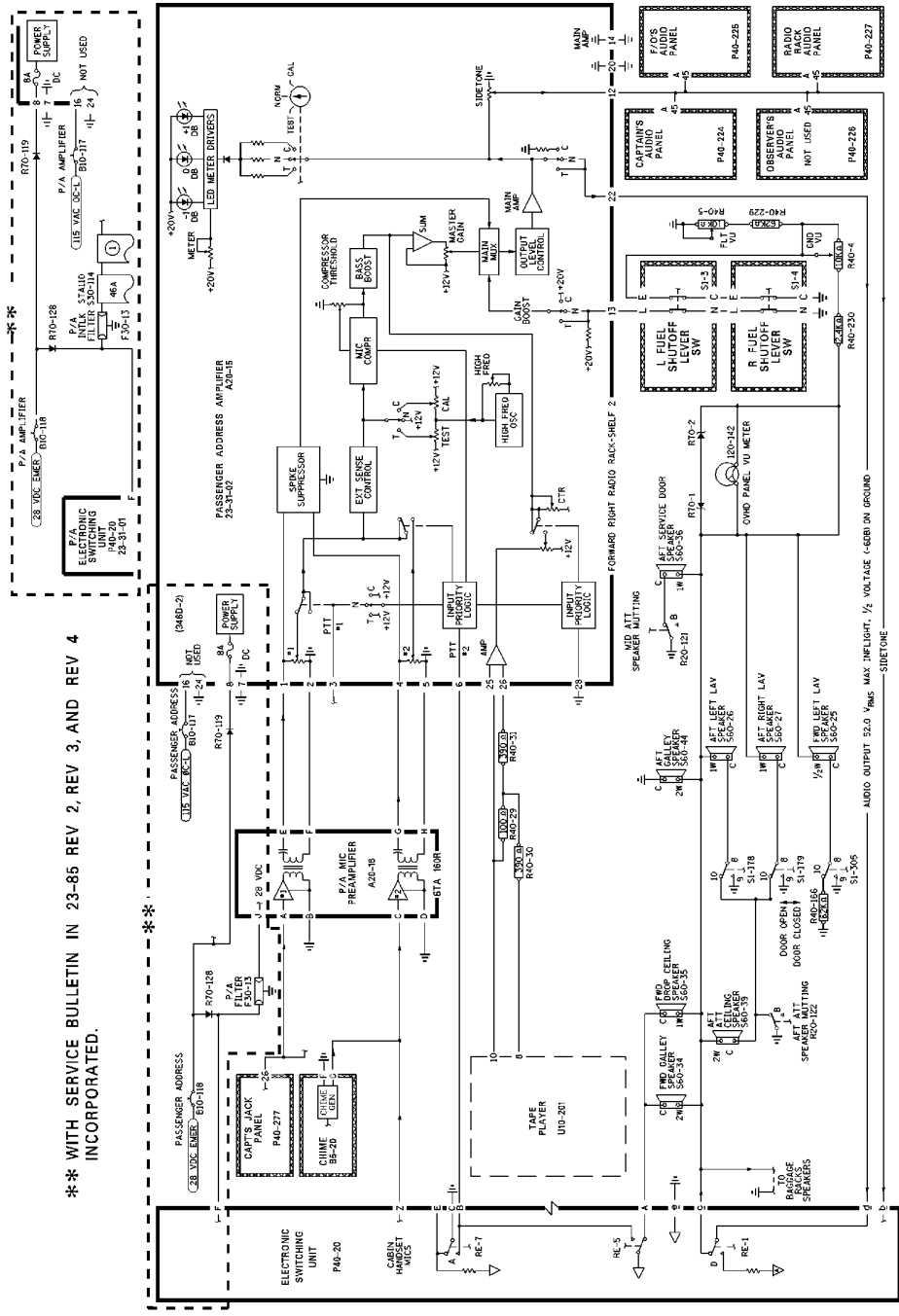
EFFECTIVITY  
WJE 410

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PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC  
Figure 101/23-30-00-990-809 (Sheet 4 of 10)

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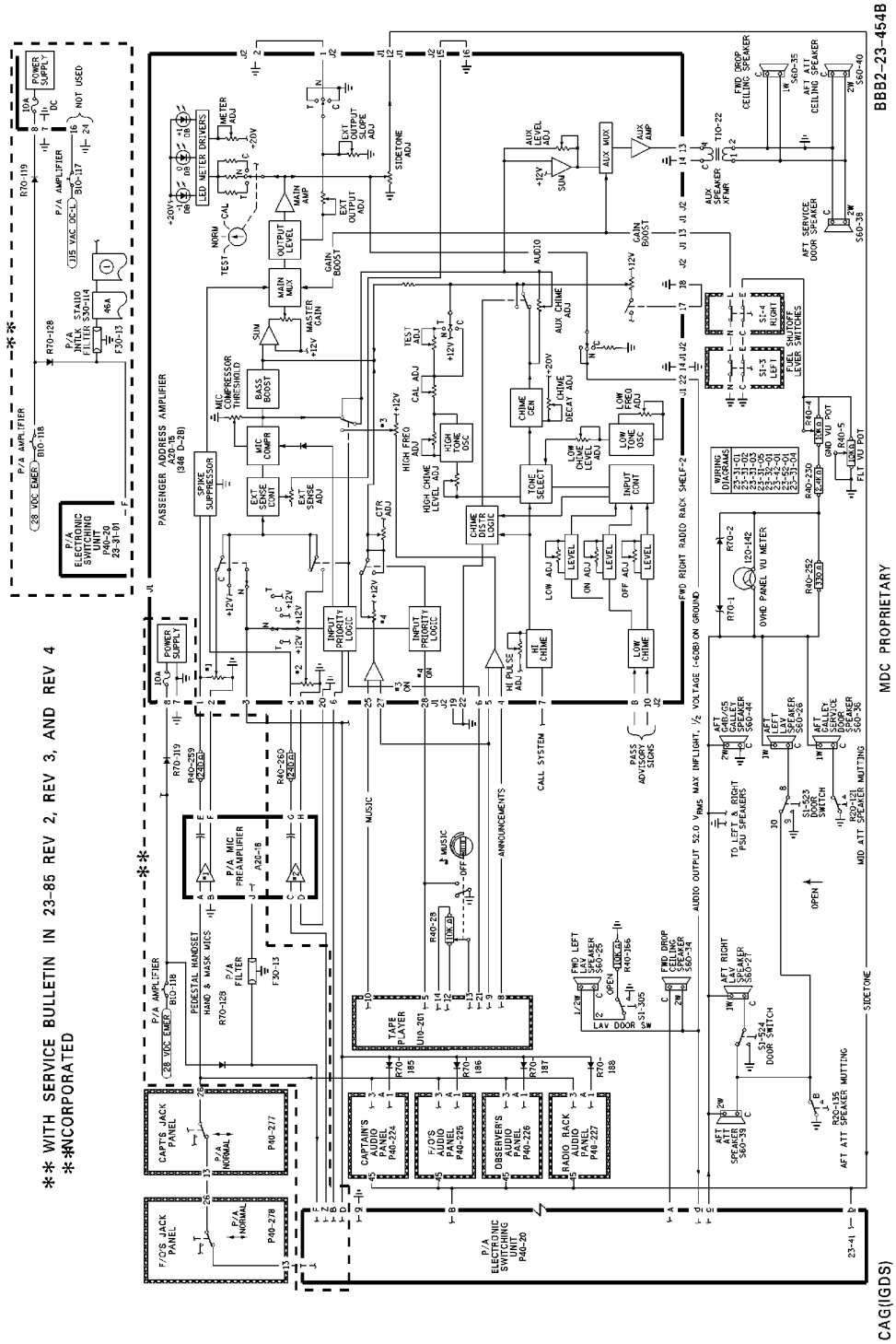
MDC PROPRIETARY

CAG(I/GDS)

EFFECTIVITY  
WJE 406, 881, 883, 892, 893

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PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC  
Figure 101/23-30-00-990-809 (Sheet 5 of 10)

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MDC PROPRIETARY  
CAG(I)GDS

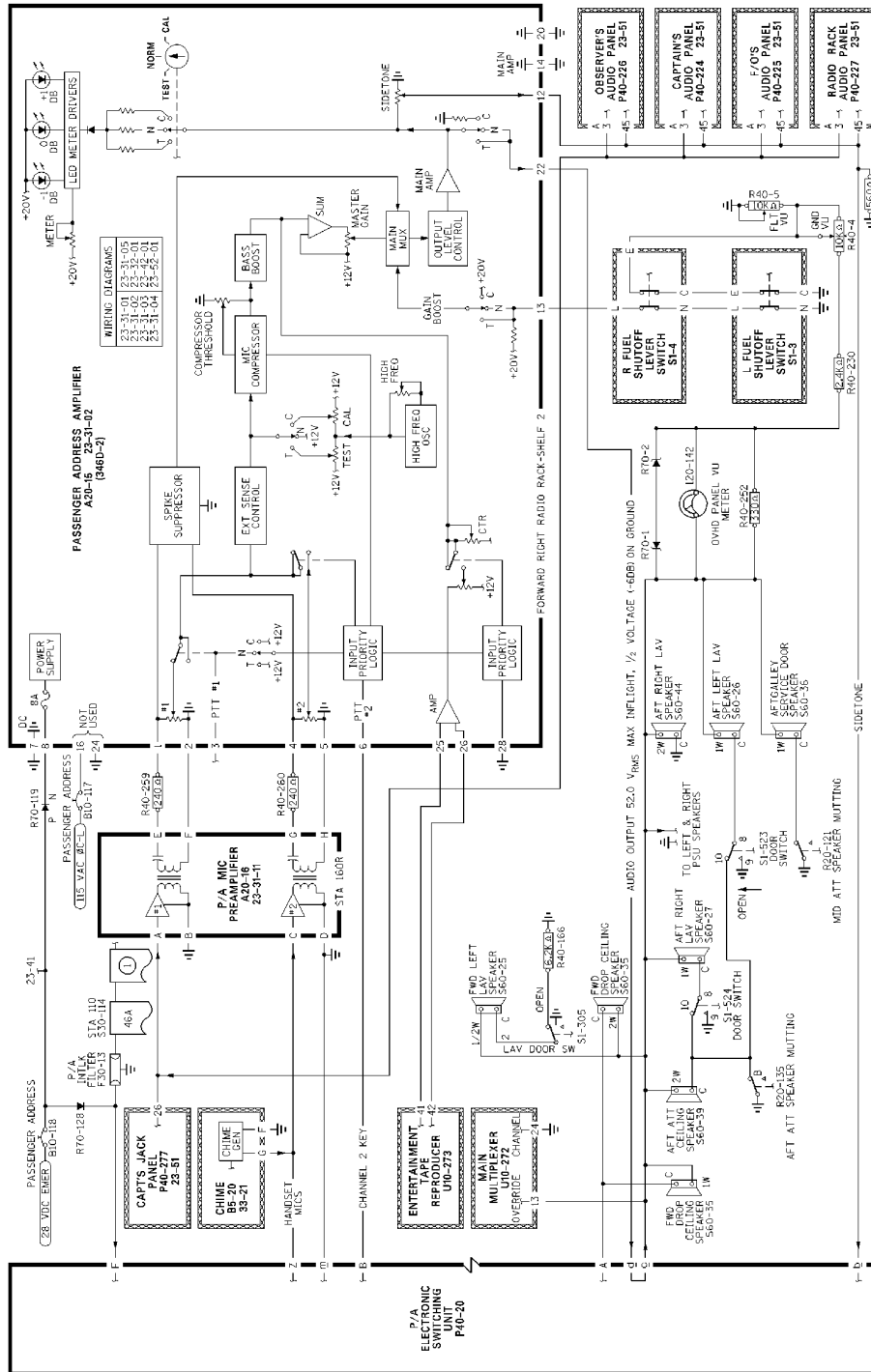
EFFECTIVITY  
WJE 407, 408, 411, 880

TP-80MM-WJE

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



**PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC**  
 Figure 101/23-30-00-990-809 (Sheet 6 of 10)

BBB2-23-514B

MDC PROPRIETARY

CAG(I)GDS)

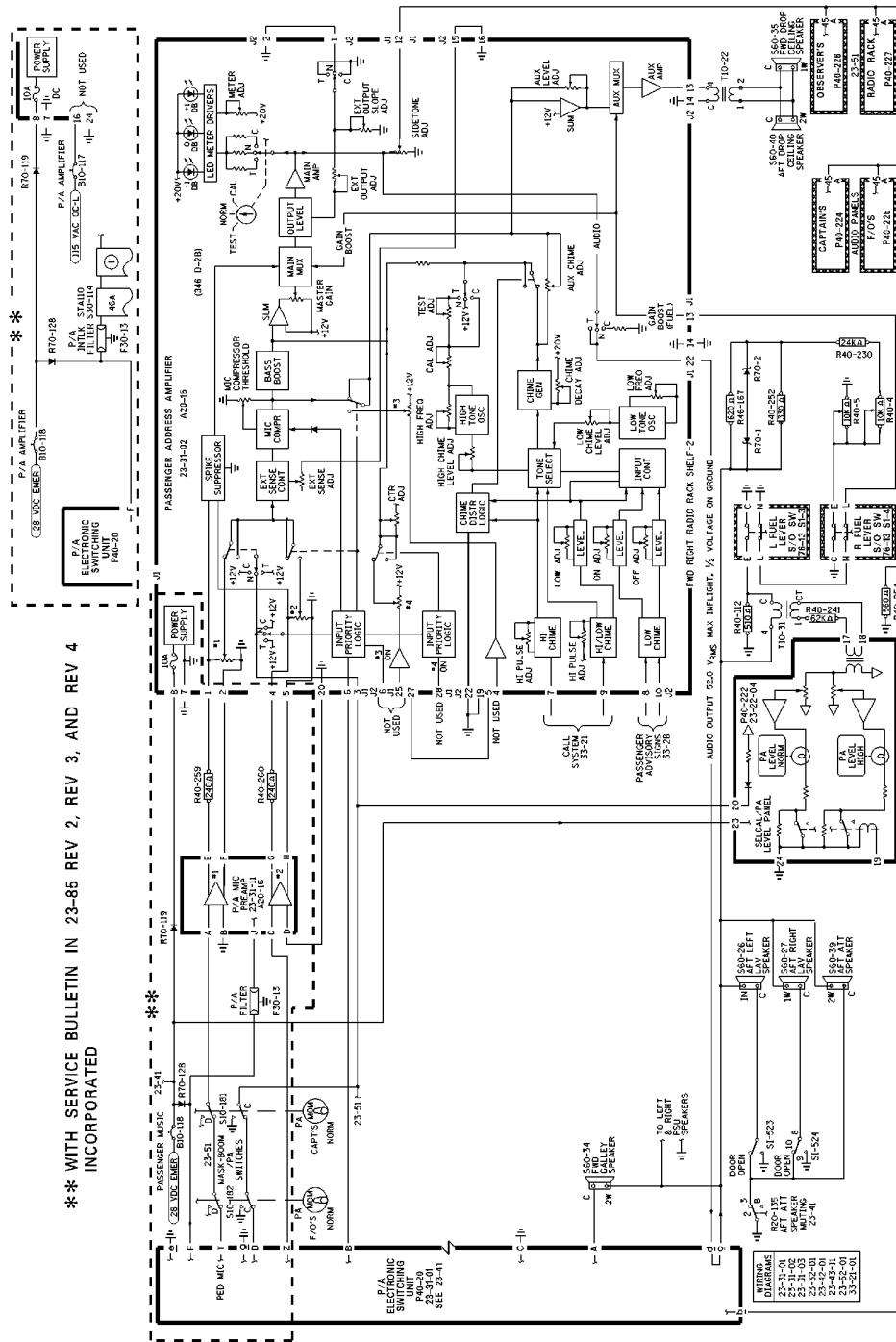
EFFECTIVITY  
 WJE 886, 887

**23-30-00**

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TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



\*\* WITH SERVICE BULLETIN IN 23-85 REV 2, REV 3, AND REV 4 INCORPORATED

PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC  
Figure 101/23-30-00-990-809 (Sheet 7 of 10)

BBB2-23-555A

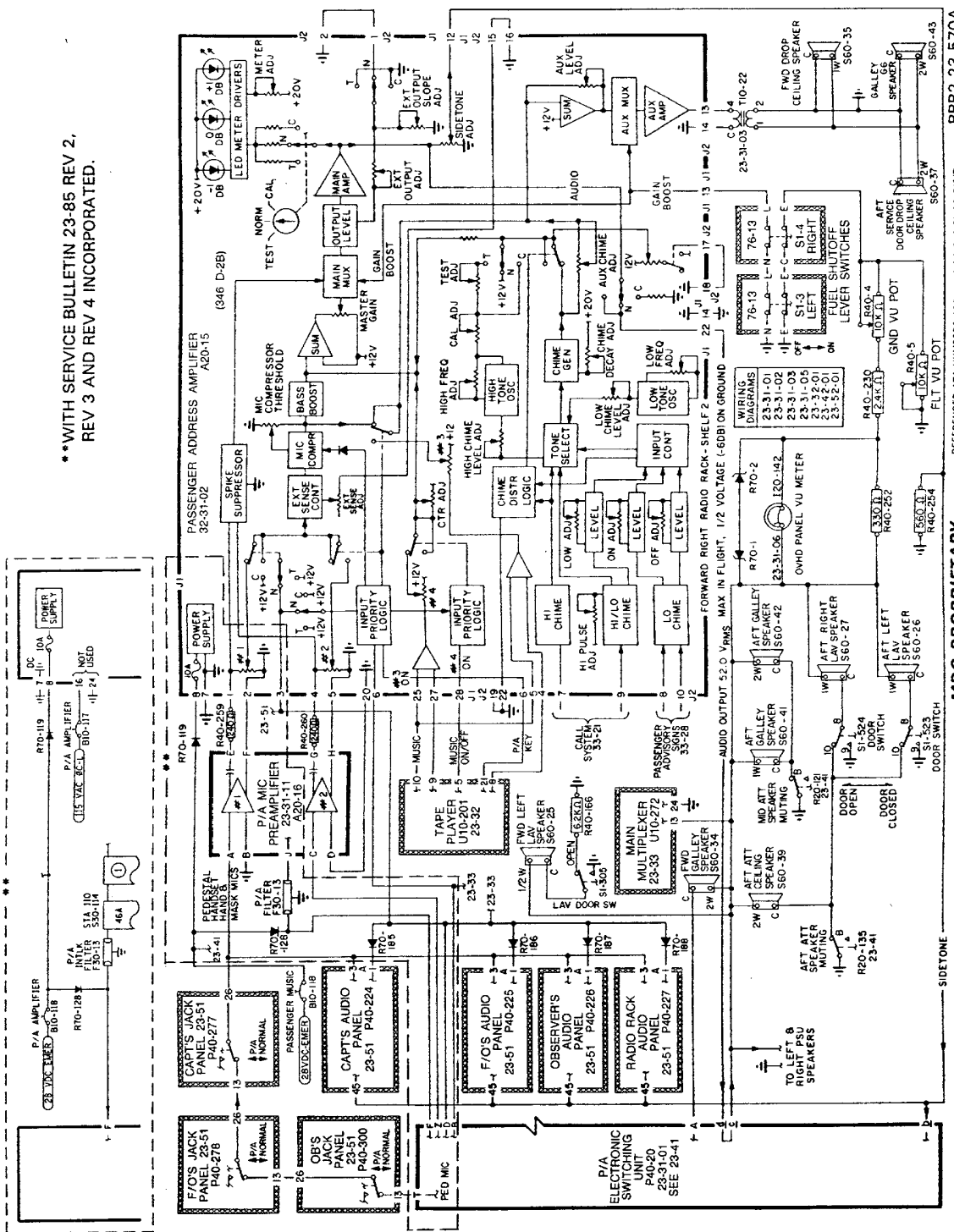
MDC PROPRIETARY

CAG (IGDS)

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

23-30-00

### MD-80 AIRCRAFT MAINTENANCE MANUAL



\*\*WITH SERVICE BULLETIN 23-85 REV 2, REV 3 AND REV 4 INCORPORATED.

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

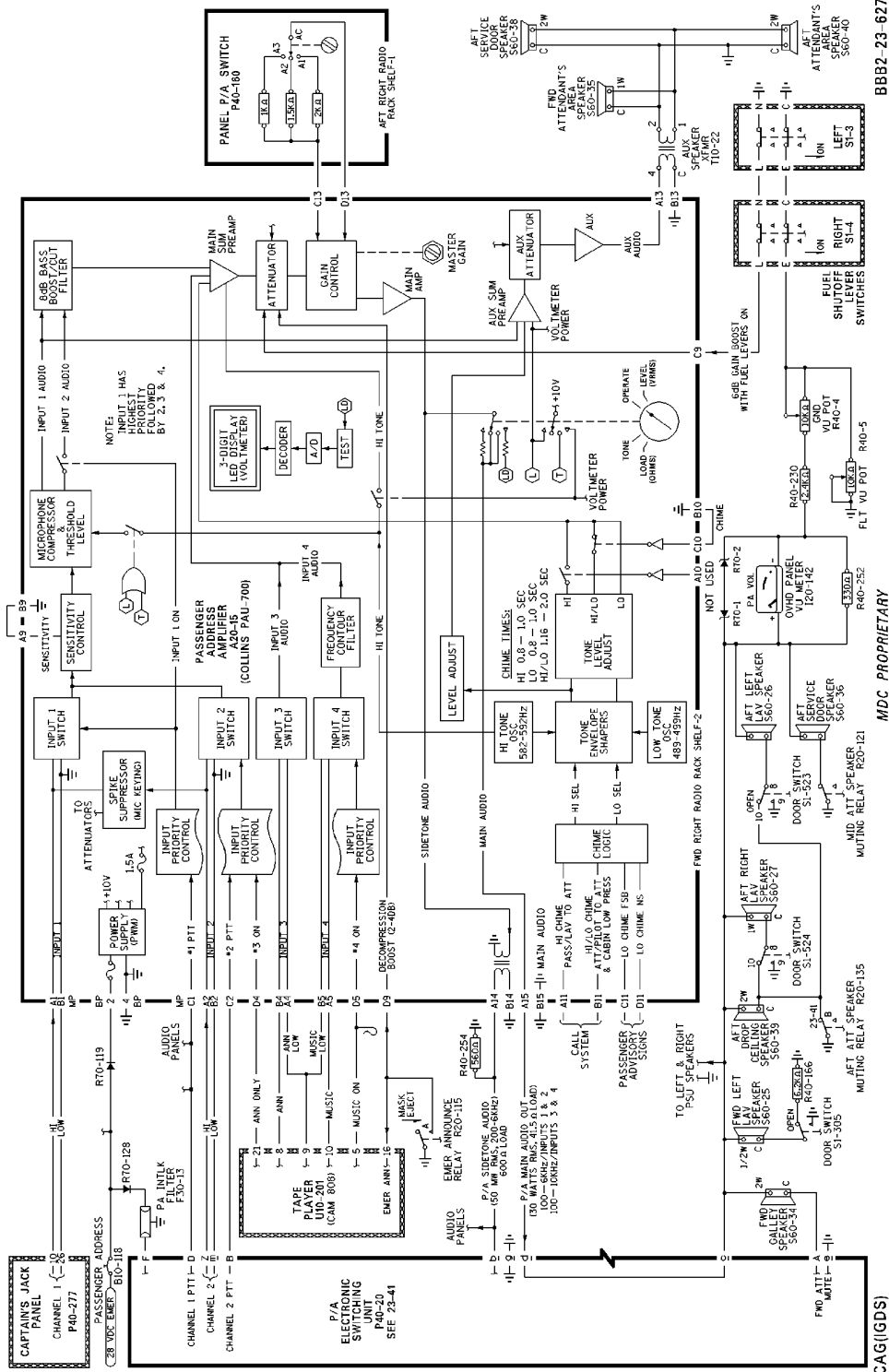
MDC PROPRIETARY

PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC Figure 101/23-30-00-990-809 (Sheet 8 of 10)

EFFECTIVITY  
WJE 401-404, 412, 414

23-30-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



**PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC**  
Figure 101/23-30-00-990-809 (Sheet 9 of 10)

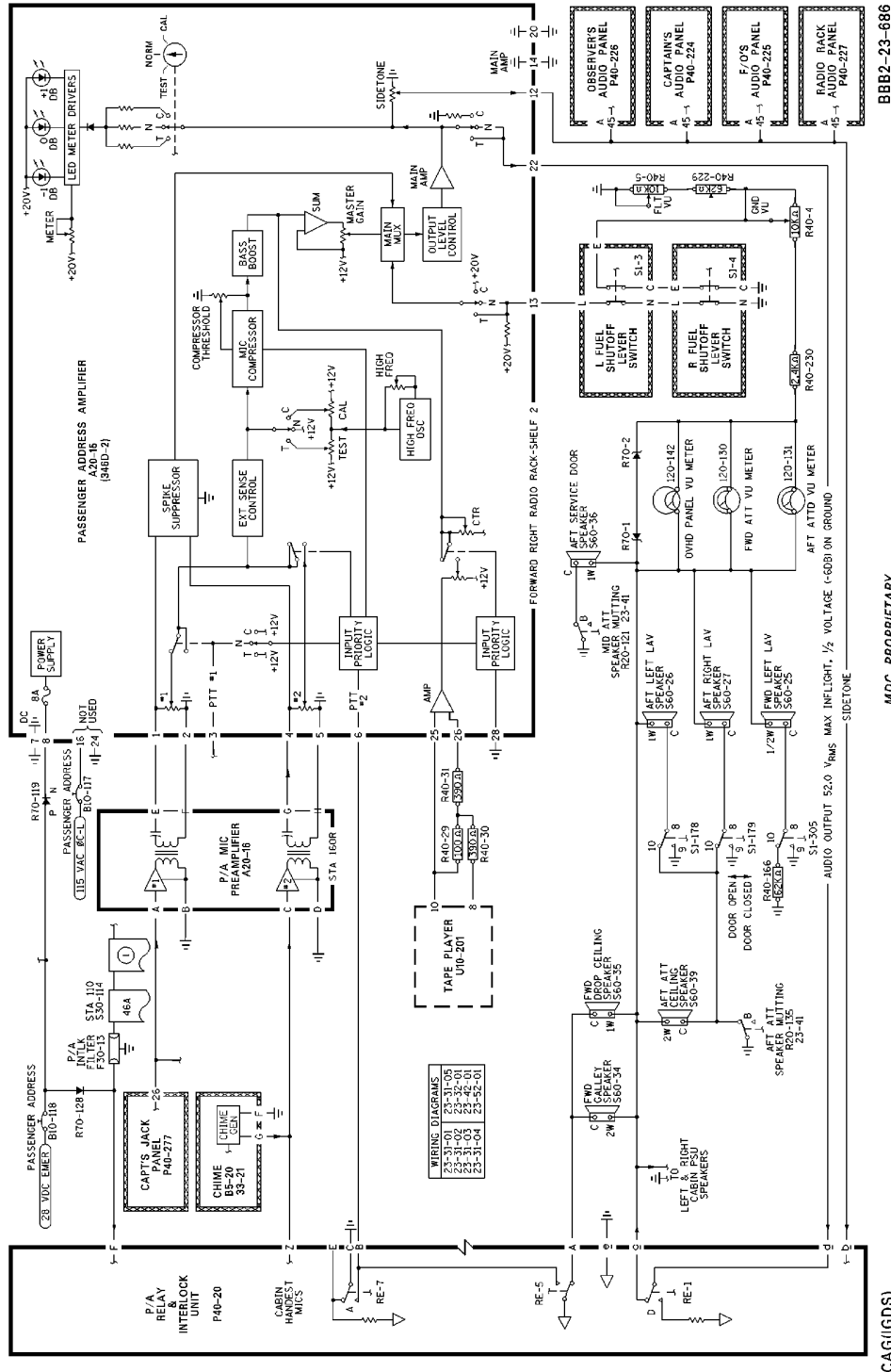
EFFECTIVITY  
WJE 875-879

23-30-00

TP-80MM-WJE

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



**PASSENGER ADDRESS AND ENTERTAINMENT - SCHEMATIC**  
Figure 101/23-30-00-990-809 (Sheet 10 of 10)

EFFECTIVITY  
WJE 873, 874

TP-80MM-WJE

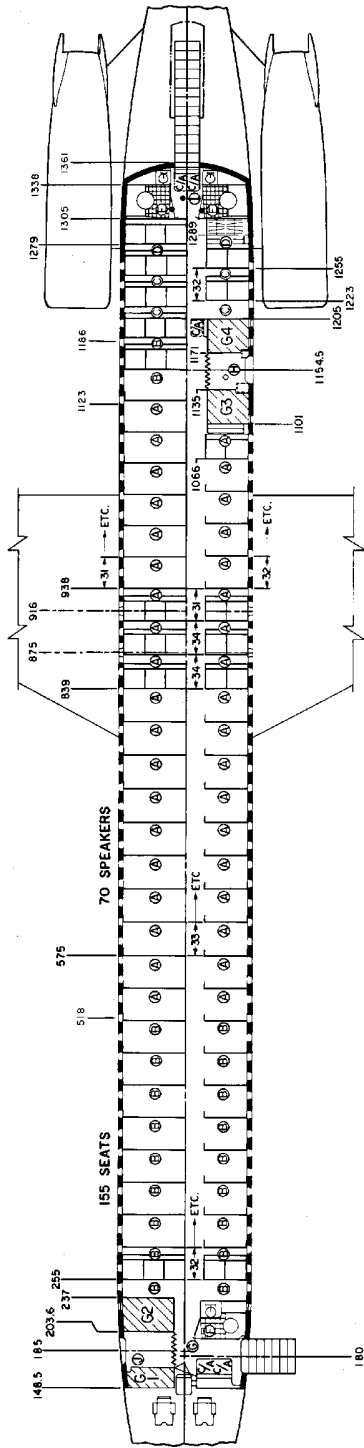
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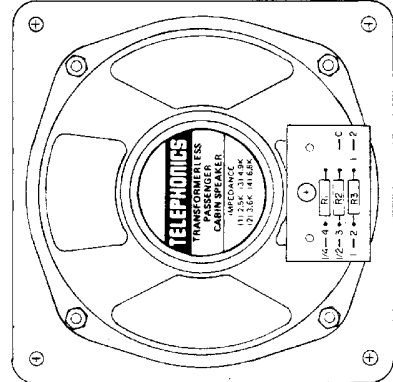
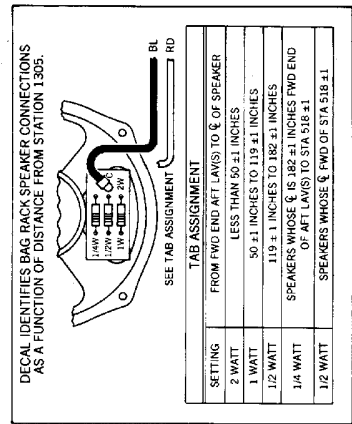
**23-30-00**

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



- SPEAKER LEVELS INCREASED WITH FUEL LEVERS ON
- SPEAKER MUTED BY MID ATTENDANT
- SPEAKERS MUTED BY AFT ATTENDANT



LOCATION DESIGNATION	SPEAKER QUANTITY	TAP SETTING
LEFT AND RIGHT UTILITY PANELS	37	1/4W
"	20	1/2W
"	4	1W
"	2	2W
LAVATORIES - AFT	2	1W
LAVATORY - FWD	1	1/2W
ATTENDANT'S AREA - FWD	1	1W
AFT SERVICE DOOR	1	1W
ATTENDANT'S AREA - AFT	1	2W
GALLEY - FWD	1	2W

BBB2-23-327  
MDC PROPRIETARY

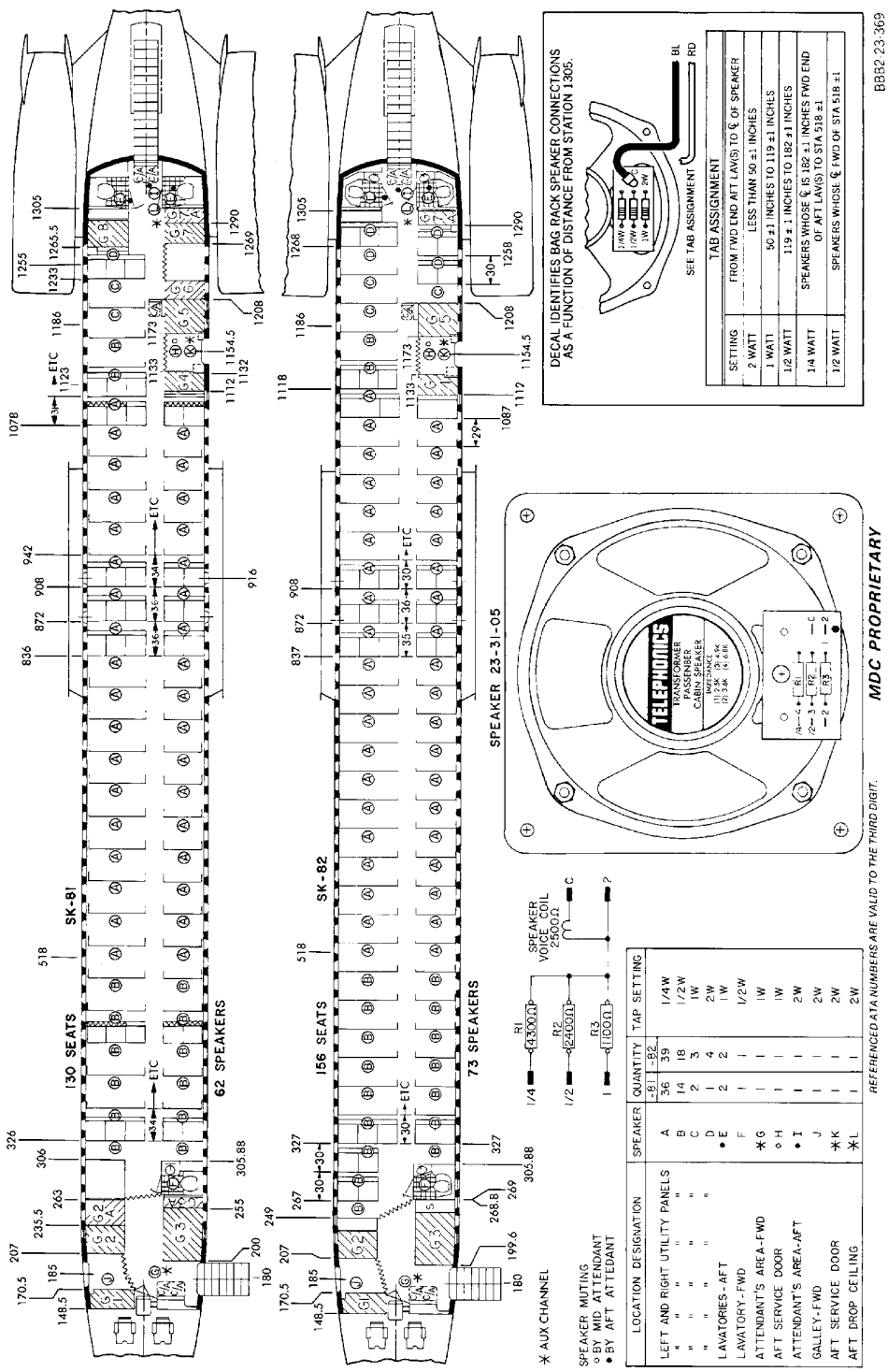
Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 1 of 9)

EFFECTIVITY  
WJE 873, 874, 881, 883; Before SB 23-91 incorp

23-30-00



## MD-80 AIRCRAFT MAINTENANCE MANUAL

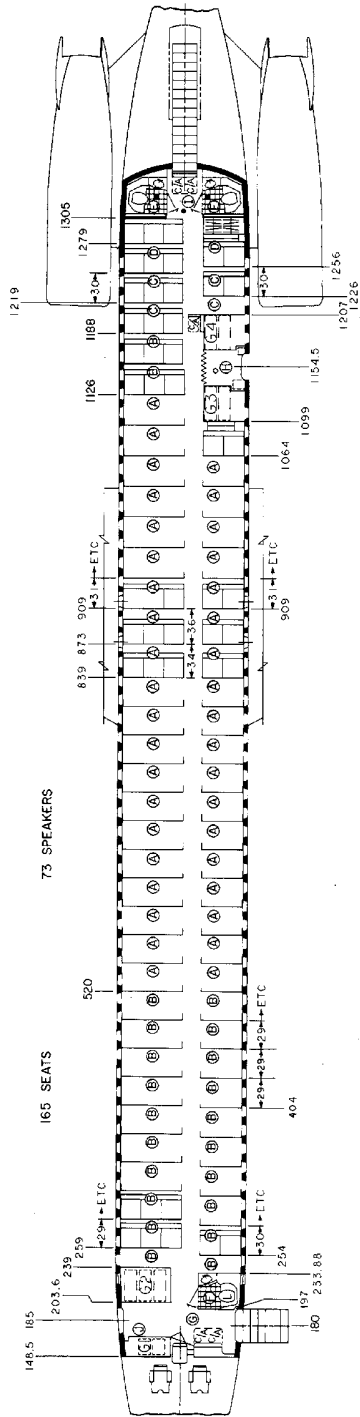


**Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 2 of 9)**

**EFFECTIVITY**  
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891;  
Without SB 23-91 incorp.

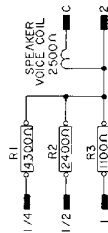
**23-30-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL

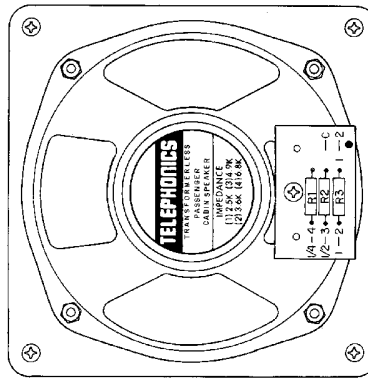


\* AUX CHANNEL

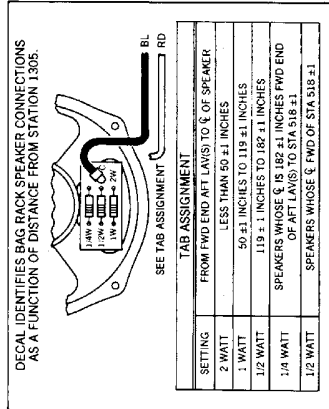
SPEAKER MUTING  
 ○ BY MID ATTENDANT  
 ● BY AFT ATTENDANT



SPEAKER 23-31-05



MDC PROPRIETARY



BBB2-23-397

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

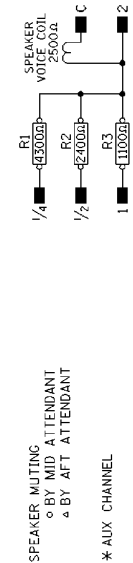
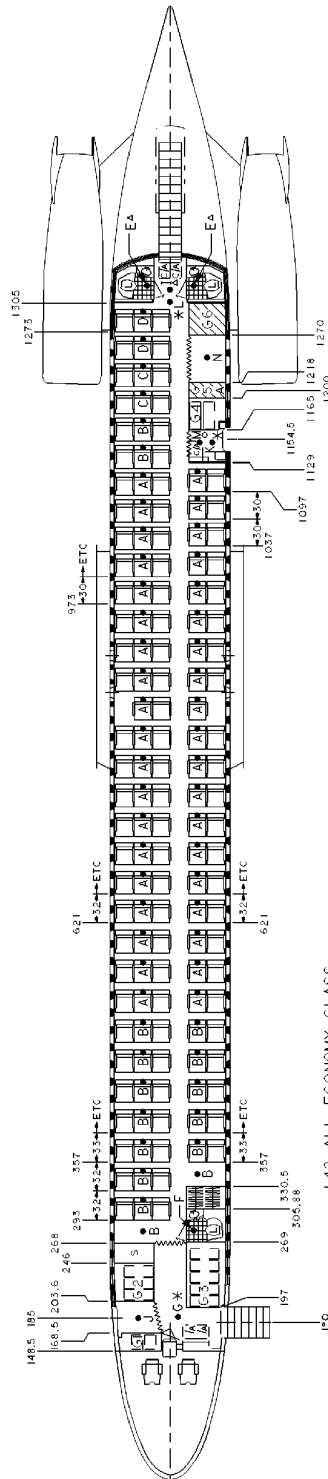
LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT AND RIGHT UTILITY PANELS	A	38	1/4W	88
"	B	22	1/2W	92
"	C	4	1W	95
"	D	2	2W	98
LAVATOIRES - AFT	E	2	1W	95
LAVATORY - FWD	F	1	1W	95
ATTENDANT'S AREA-FWD	XG	1	1W	94
AFT SERVICE DOOR	OH	1	1W	96
ATTENDANT'S AREA-AFT	I	1	2W	96
GALLEY-FWD	J	1	2W	98

Passenger Address System -- (Speaker Location and Hookup)  
 Figure 102/23-30-00-990-811 (Sheet 3 of 9)

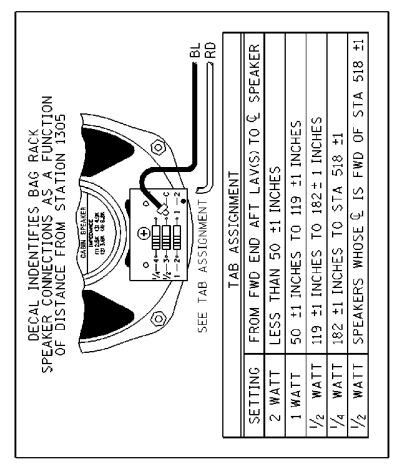
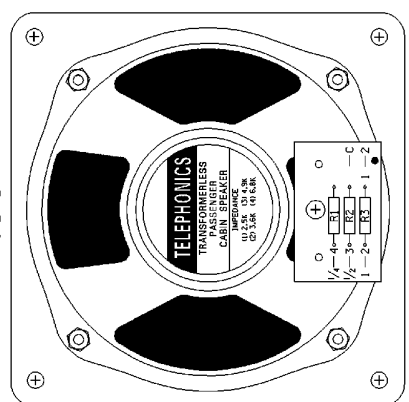
EFFECTIVITY  
 WJE 405, 409, 884; Before SB 23-91 incorp.

23-30-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



LOCATION DESIGNATION	SPEAKER QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	38	1/4W	89dB
•	16	1/2W	92dB
•	2	1W	95dB
•	2	2W	98dB
LAVATORIES- AFT	2	1W	95dB
LAVATORIES- FWD	1	1/2W	92dB
ATTENDANT'S AREA- FWD	1	1W	94dB
ATTENDANT'S AREA- AFT	1	2W	98dB
GALLEY- FWD DOOR DROP	1	2W	98dB
AFT SERVICE DOOR	1	2W	98dB
AFT DROP CEILING	1	1W	95dB
GALLEY-AFT	1	1W	95dB
GALLEY- AFT	1	2W	98dB

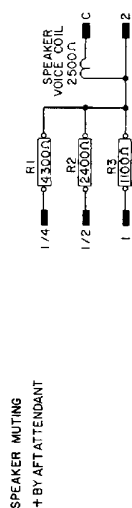
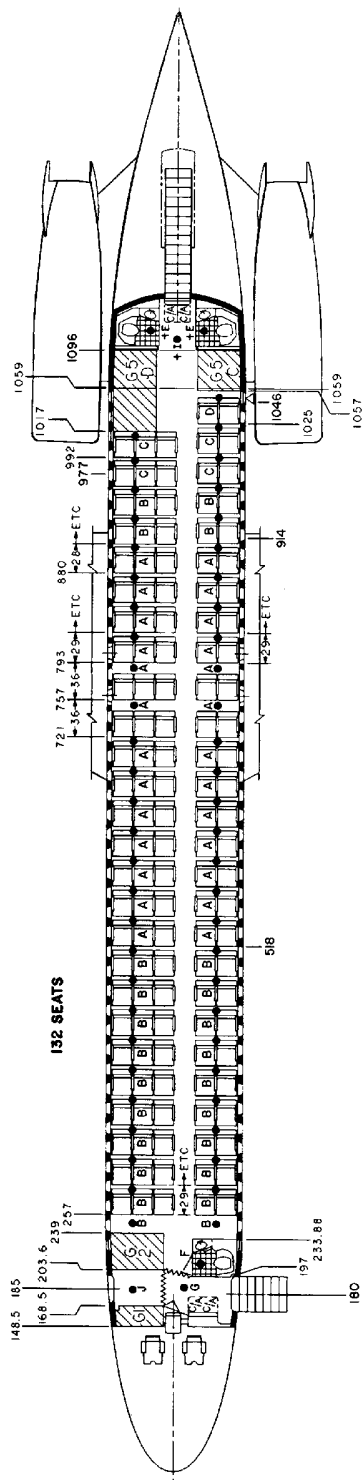


CAG(IIGDS) BBB2-23-400A

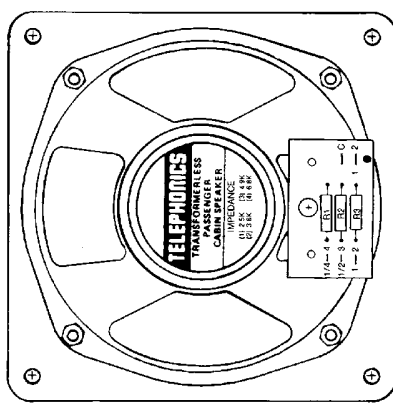
EFFECTIVITY  
WJE 407, 408, 411; Without SB 23-91 incorp.

# 23-30-00

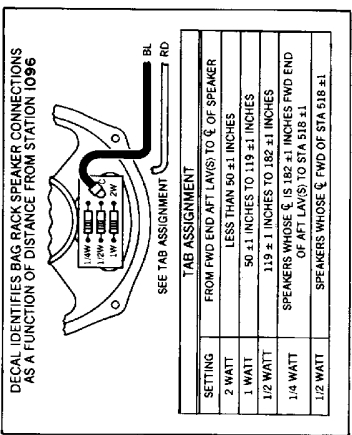
# MD-80 AIRCRAFT MAINTENANCE MANUAL



SPEAKER 23-31-05



MDC PROPRIETARY



BBE2-23-482

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

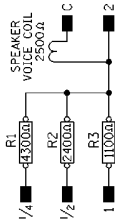
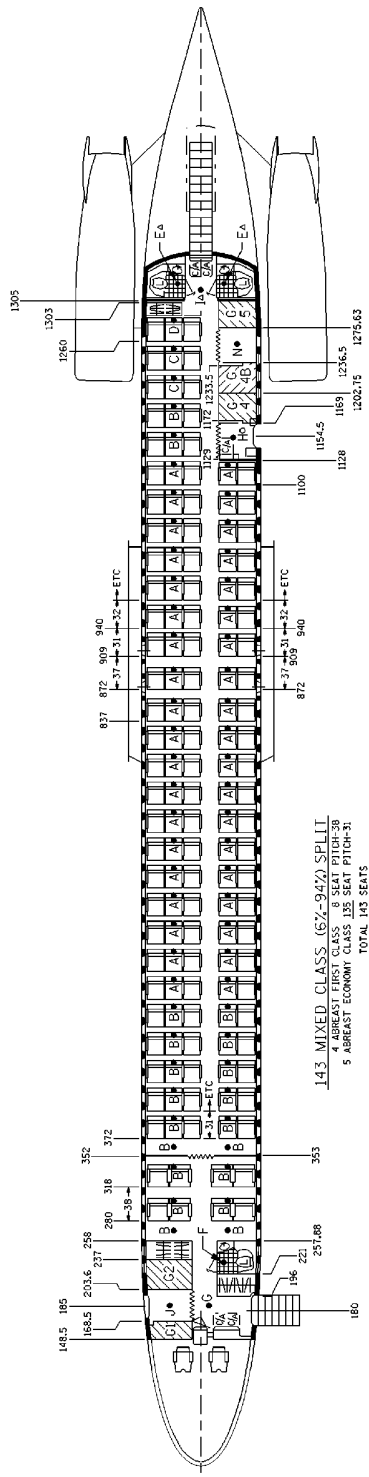
LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT AND RIGHT UTILITY PANELS	A	26	1/4 W	89
"	B	20	1/2 W	92
"	C	4	1 W	95
"	D	2	2 W	98
LAVATORIES - AFT	+E	2	1 W	95
LAVATORY - FWD	F	1	1 W	92
ATTENDANT'S AREA - FWD	G	1	1 W	94
AFT SERVICE DOOR	H	1	1 W	95
ATTENDANT'S AREA - AFT	+I	1	2 W	98
GALLEY - FWD	J	1	2 W	98

Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 5 of 9)

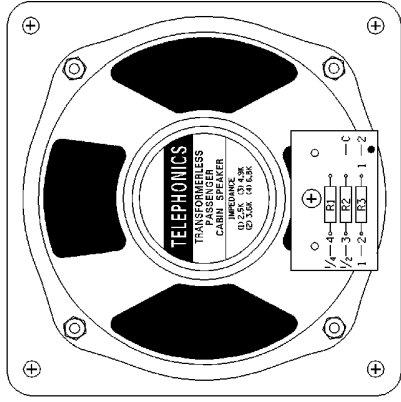
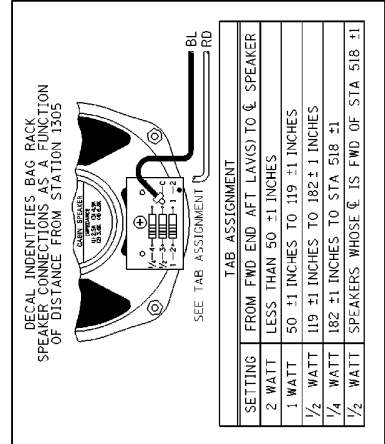
EFFECTIVITY  
WJE 410; Before SB 23-91 incorp.

23-30-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	A	38	1/4W	89dB
LAVATORIES- AFT	B	2	1/2W	92dB
LAVATORIES- FWD	C	1	2W	95dB
ATTENDANT'S AREA- FWD	D	1	2W	96dB
ATTENDANT'S DOOR	E	1	1/2W	95dB
ATTENDANT'S AREA- AFT	F	1	1W	94dB
GALLEY- FWD	H	1	2W	98dB
GALLEY- AFT	J	1	2W	98dB
	N	1	2W	98dB



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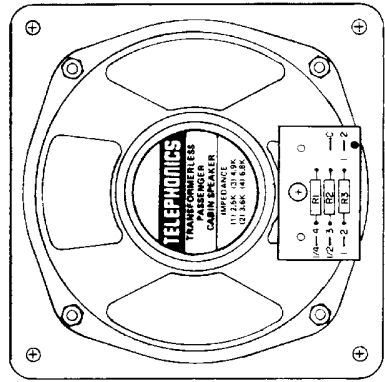
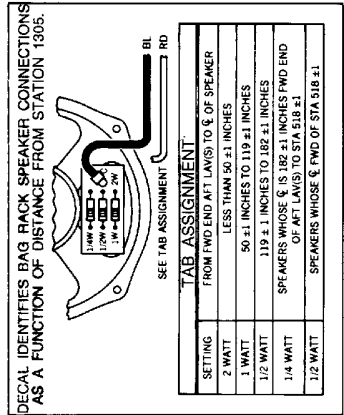
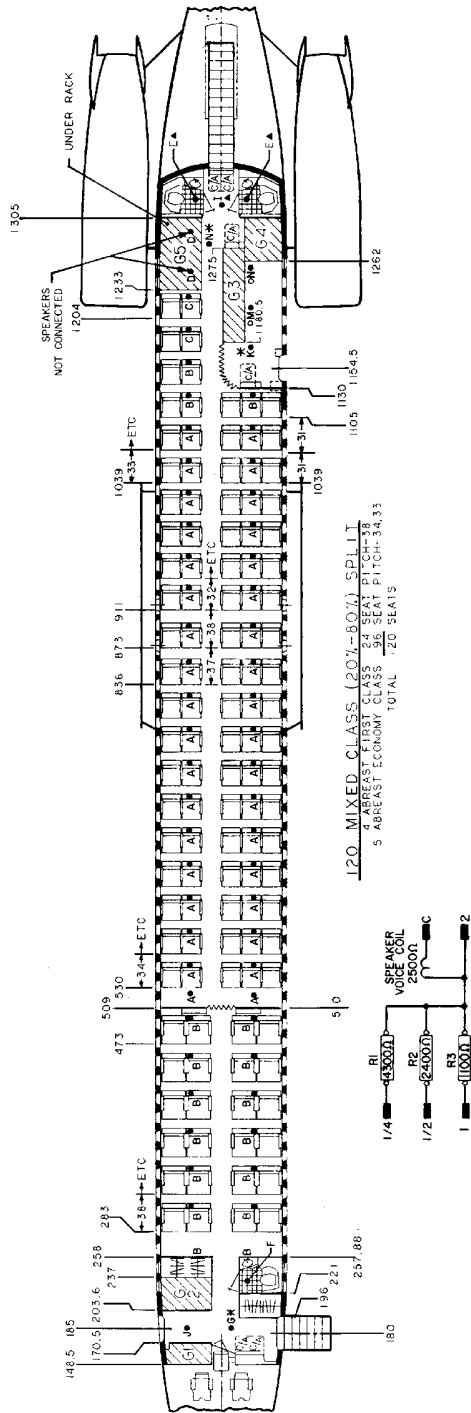
CAG(IGDS)

Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 6 of 9)

EFFECTIVITY  
WJE 406, 886, 887

**23-30-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



\* BY MID ATTENDANT  
 ▲ BY AFT ATTENDANT  
 \* AUX CHANNEL

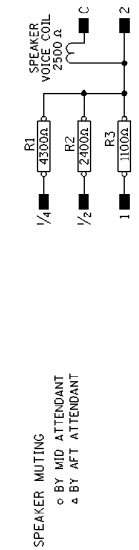
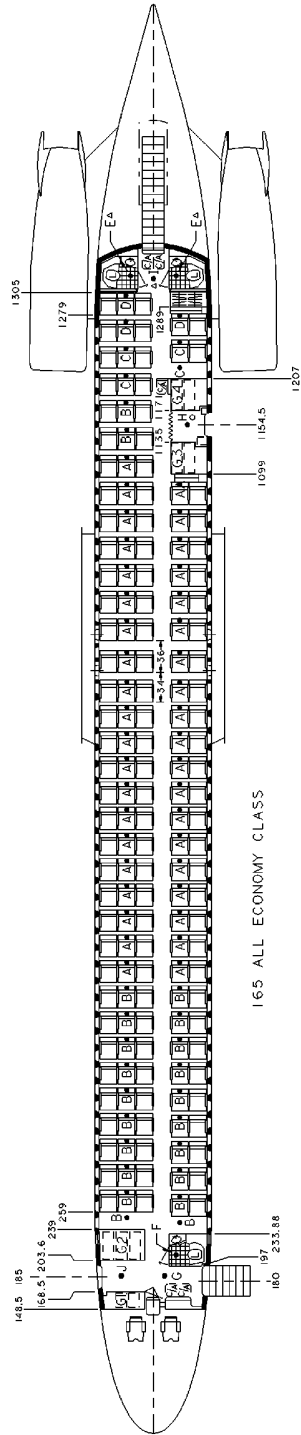
LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT AND RIGHT UTILITY PANELS	A	36	1/4W	69
"	B	17	1/2W	92
"	C	2	1W	95
"	D	2	2W	96
LAVATORIES- AFT	E	2	1W	95
LAVATORY-FWD	F	1	1/2W	92
ATTENDANT'S AREA-FWD	G	1	1W	94
ATTENDANT'S AREA-AFT	I	1	2W	98
GALLEY-FWD	J	1	2W	98
AFT SVCE DOOR DROP CEILING	K	1	2W	98
AFT GALLEY	L	1	1W	95
AFT GALLEY	M	1	1W	95
AFT GALLEY	N	2	2W	98

Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 7 of 9)

EFFECTIVITY  
WJE 401-404, 412, 414; Without SB 23-91 incorp.

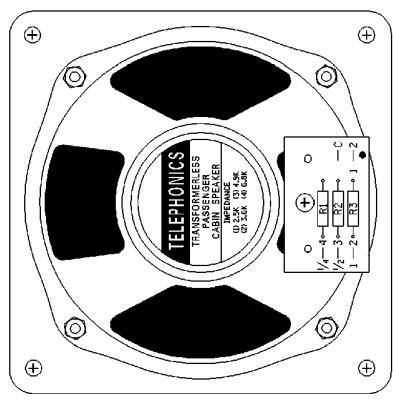
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# MD-80 AIRCRAFT MAINTENANCE MANUAL

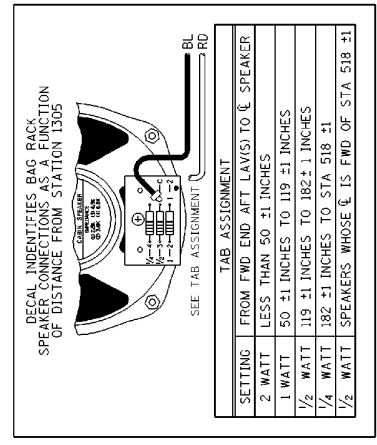


LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	A	39	1/4W	89dB
	B	22	1/2W	92dB
	C	4	1W	95dB
	D	5	2W	98dB
LAVATORIES- AFT	E	2	2W	98dB
LAVATORIES- FWD	F	2	1/2W	92dB
ATTENDANT'S AREA- FWD	C	1	1W	94dB
AFT SERVICE DOOR	C	1	1W	95dB
ATTENDANT'S AREA- AFT	H	1	2W	98dB
GALLEY - FWD	J	1	2W	98dB

SPEAKER 23-31-05



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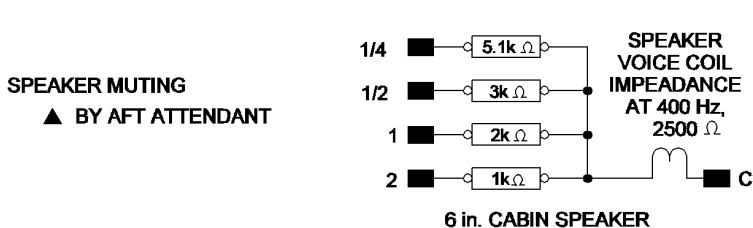
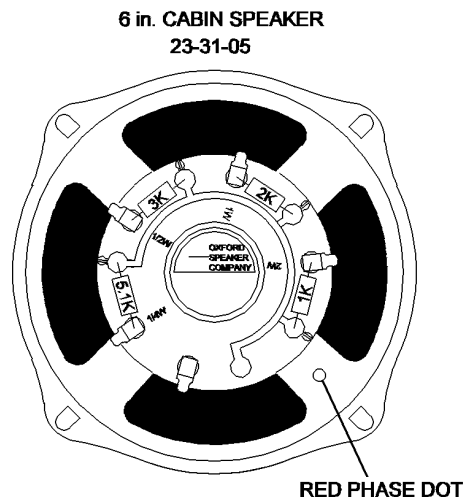
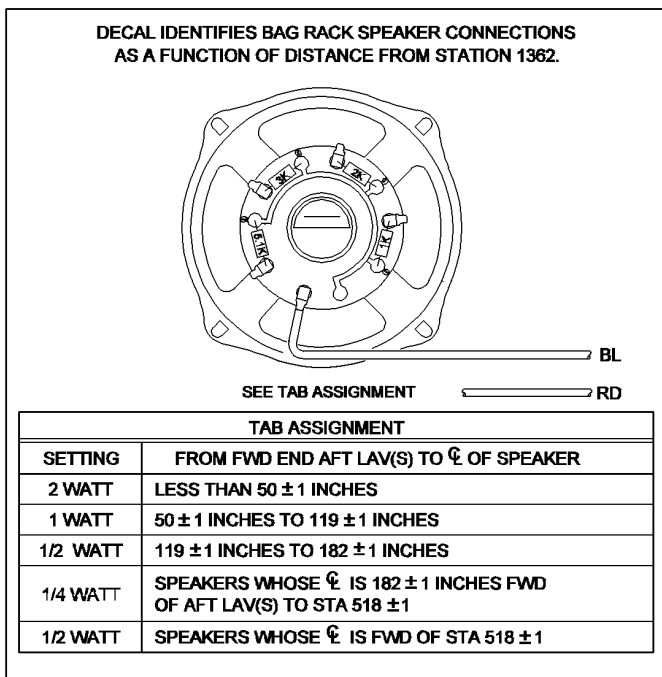
Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 8 of 9)

EFFECTIVITY  
WJE 892, 893; Before SB 23-91 incorp.

**23-30-00**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

(TYPICAL)



NOTE:  
SPEAKERS ARE AT SAME LOCATIONS AS IN FIGURE(S) 102.

TYPICAL SPEAKER AND LOCATIONS IN FIGURE 102

LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	A	43	1/4W	89dB
" " " "	B	19	1/2W	92dB
" " " "	C	3	1W	95dB
" " " "	D	3	2W	98dB
LAVATORIES- AFT	△ E	2	1W	95dB
LAVATORY- FWD	F	1	1/2W	92dB
ATTENDANT'S AREA- FWD	* G	1	1W	94dB
AFT SERVICE DOOR (GALLEY)	○ H	1	1W	94dB
ATTENDANT'S AREA- AFT	* I	1	2W	98dB
GALLEY- FWD	▲ J	1	2W	98dB
AFT SERVICE DOOR (DROP CEILING)	* K	1	2W	98dB
AFT DROP CEILING	△ L	1	2W	98dB
AFT GALLEY DROP CEILING	M	0	2W	98dB
GALLEY- AFT	N	0	2W	98dB

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S0006530770V2

Passenger Address System -- (Speaker Location and Hookup)  
Figure 102/23-30-00-990-811 (Sheet 9 of 9)

EFFECTIVITY

WJE 878, 879; WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-877, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-23-091

TP-80MM-WJE

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# 23-30-00



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES

#### 1. General

- A. These maintenance practices provide adjustment/test procedures to calibrate VU meters, verify PA amplifier output levels, test system functioning, and check PA priority and call chime circuits.

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

- B. Four handsets are used in passenger address and interphone systems. Locations: flight compartment aft pedestal; FWD, intermediate, and aft cabin attendants' panels. Boom, mask, and hand microphones of the audio integrating system may be used for passenger address as required.

**WJE 401-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871-881, 883, 884, 886, 887, 892, 893**

- C. Four handsets are used in passenger address and interphone systems. Locations: flight compartment aft pedestal; FWD, mid, and aft cabin attendants' panels. Boom, mask, and hand microphones of the audio integrating system may be used for passenger address as required.

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

- D. Three handsets are used in passenger address and interphone systems. Locations: flight compartment aft pedestal; FWD and aft cabin attendants' panels. Boom, mask, and hand microphones of the audio integrating system may be used for passenger address as required.

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

- E. Handsets normally are connected to the interphone system. The PA Relay/Interlock panel connects handsets to passenger address and establishes input priority: (1) pedestal handset; (2) FWD attendant handset; (3) intermediate and aft attendants handsets. PA amplifier priority logic establishes first priority for flight compartment microphone inputs, which bypass the PA Relay/Interlock panel.

**WJE 873, 874**

- F. Handsets normally are connected to the interphone system. The PA Relay/Interlock panel connects handsets to passenger address and establishes input priority: (1) pedestal handset; (2) FWD attendant handset; (3) mid and aft attendants handsets. PA amplifier priority logic establishes first priority for flight compartment microphone inputs, which bypass the PA Relay/Interlock panel.

**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893**

- G. Handsets normally are connected to the interphone system. The electronic switching unit connects handsets to passenger address and establishes input priority: (1) pedestal handset; (2) FWD attendant handset; (3) mid and aft attendants handsets. PA amplifier priority logic establishes first priority for flight compartment microphone inputs.

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

- H. Handsets normally are connected to the interphone system. The electronic switching unit connects handsets to passenger address and establishes input priority: (1) pedestal handset; (2) FWD attendant handset; (3) aft attendants handsets. PA amplifier priority logic establishes first priority for flight compartment microphone inputs, which bypass the electronic switching unit.

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- I. To use handset for passenger address, handset is removed from hanger, PA (or ANNOUNCE) switch momentarily pressed, and handset push-to-talk (PTT) switch pressed and held while speaking. Handset automatically reverts to interphone circuit when handset is returned to hanger, or if any call switch is pressed at the announcing station.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**23-30-00**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- J. To use handset for passenger address, handset is removed from cradle, PA switch located on the handset pressed then released. Handset automatically reverts to interphone circuit when handset is returned to hanger, or if any call switch is pressed at the announcing station.

### WJE ALL

- K. VU potentiometers R40-4 (ground VU) and R40-5 (Flight VU) are located in an enclosure at the top of the FWD attendant panel. Access is by removing the grill that covers the front of the enclosure.
- L. Terminal board S30-21 (voltmeter connections) and FWD attendant handset jack are located behind FWD attendant panel. Access is gained as follows: (1) disengage fasteners securing FWD attendant panel to aircraft structure; (2) remove screws, nuts and washers securing front grill to FWD attendant panel; (3) remove screws, nuts and washers securing terminal board S30-21 to FWD attendant panel and carefully lower terminal panel.

NOTE: Whenever the FWD cabin attendant panel is serviced, the FWD cabin attendant oxygen door must be functioned afterward to assure it will open freely.

- M. Passenger address amplifier is located on FWD right radio rack, in electrical/electronics compartment.

### WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891

- N. Various types of PA equipment such as amplifiers, handsets, and speakers are installed on the aircraft. The following will clarify the differences of each with respect to gain control, voltage outputs and adjustments.
  - (1) The Telex HS-500 handset contains a gain control located on the mouthpiece internal to the handset. The adjustment has a range of  $\pm 5$  dB. This translates into a voltage output of approximately 200 millivolts RMS (minimum gain) to 620 RMS millivolts, (maximum gain) for an average speaking voice. Peak voltage levels at maximum handset gain can be as high as 1.4 volts RMS.
  - (2) Most PA amplifiers have a linear input to output gain ratio up until an internally adjusted threshold level. The PA amplifier will remain at the threshold voltage with increasing input voltage. This feature is commonly called compression.
  - (3) For optimum MD-80/DC-9 PA system performance, using any PA amplifier and amp/preamp combination, and when using Telex HS-500 handsets, and in flight or engines on mode, the PA system input and output for channel 1 (cockpit microphones) and channel 2 (cabin microphones) should be set for the following:
    - (a) For aircraft using CTS speakers and Polyphase transformers, increasing input should give a linearly increasing output until 350 millivolts RMS input (compression threshold) at 1000 Hz. At 350 millivolts input the main channel output voltage should measure 52 volts RMS.  
NOTE: In ground or engines off mode, this value will be 26V RMS. A further increase of 20 dB in input voltage (above 350 mV) should cause the output voltage to rise no more than 3 dB.
    - (b) For aircraft using Telephonics high impedance speakers, increasing input should give a linearly increasing output until 1.4 volts RMS input (compression threshold) at 1000 Hz. At 1.4 volts input the main channel output voltage should measure 52 volts RMS.  
NOTE: In ground or engines off mode, this value will be 26V RMS. A further increase of 20 dB in input voltage (above 1.4 V) should cause the output voltage to rise no more than 3 dB.
  - (4) All handset gain controls should be adjusted to provide sufficient gain without feedback.

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**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891 (Continued)**

- (5) The PA amplifier and preamplifier should be removed from the aircraft and calibrated in an avionics shop if the specification of Paragraph 3., is not met.
- (6) If handsets other than the Telex HS-500 are used, and if the handset does not put out sufficient gain to be used with the adjustments of Paragraph 3., then the input level should be adjusted accordingly to put the main output of the PA amplifier at a compression threshold of 52V RMS.

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### 2. Equipment and Materials

NOTE: Equivalent substitutes may be used instead of the following listed items, which are used for VU calibration:

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

NOTE: Random noise generator, adapter cable, 150-ohm shunt plug, and PJ-051B phone plug listed below are available in Douglas Aircraft Co. kit DZZ7702-1.

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**Table 201**

Name and Number	Manufacturer
Audio Oscillator, 200AB	Hewlett-Packard
<b>WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891</b>	
Random Noise Generator Model 543-1	Pacific Electrodynamics
<b>WJE ALL</b>	
Multimeter, 2000A	Dana
Sound Level Meter B & K Type 2219	B & K Instruments, Inc.
Phone Plug, PJ-051B	Little
Capacitor, 220 uf ±20%, 50 wvdc	
Resistor, 150-ohm ±5%, 3-Watt	
Adapter Cable	(Figure 203)
<b>WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891</b>	
Shunt Plug 150-ohm	(Figure 204)
<b>WJE ALL</b>	
Test Jig	(Figure 205)

### 3. Adjustment/Test Passenger Address

#### A. Preliminary

- (1) At FWD cabin attendants station, set VU potentiometers R40-4 and R40-5 to mid-range.

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- (2) On pedestal, place left and right fuel shutoff lever switches to ON position. Engines on condition is now simulated.

NOTE: Following step must be made before plugging in test setup or depressing any push-to-talk (PTT) buttons.

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

- (3) On front panel of PA amplifier, hold TEST-NORM-CAL switch in CAL position. LED's on amplifier should indicate as follows: "-1" ON; "0 dB" ON; "+1" OFF. Release switch to NORM.

### WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 886, 887, 892, 893

NOTE: Output indications above indicate serviceable amplifier. Out-of-tolerance unit should be recalibrated in shop. Do not attempt calibration of amplifier gain in the aircraft. Calibration of the PA amplifier and PA preamplifier must be accomplished per applicable sections of the Douglas Aircraft Company Component Maintenance Manual (Ref. 23-30-01 and 23-30-04). Calibration of the amplifiers by any other procedure may result in acoustic feedback or insufficient volume levels. Applicable sections are as follows: PA amplifiers on all aircraft, for optimum operation, should be adjusted per Modified System 1 requirements. The amplifier should be placarded ADJ PER 7930732-507. PA preamplifier on all aircraft, for optimum operation, should be adjusted per Modified System 1 requirements. The preamp should be placarded ADJ PER TXR 7036-1.

### WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891

NOTE: Output indications above indicate serviceable amplifier. Out-of-tolerance unit should be recalibrated in shop. Do not attempt calibration of amplifier gain in the aircraft. Calibration of the PA amplifier and PA preamplifier must be accomplished per applicable sections of the Douglas Aircraft Company Component Maintenance Manual (Ref. 23-30-01 and 23-30-04). Calibration of the amplifiers by any other procedure may result in acoustic feedback or insufficient volume levels. Applicable sections are as follows: PA amplifiers on all aircraft, for optimum operation, should be adjusted per Modified System 1 requirements. The amplifier should be placarded ADJ PER 7930732-507. PA preamplifier on all aircraft, for optimum operation, should be adjusted per Modified System 2 requirements. The preamp should be placarded ADJ PER TXR 7036-501.

### WJE 875-879

- (4) On front panel of PA amplifier, set LOAD-TONE-OPERATE-LEVEL switch in TONE position. Test tone audible throughout cabin.
- (5) Hold LOAD-TONE-OPERATE-LEVEL switch in LOAD position. LED's on amplifier indicate 55 to 110 ohms.
- (6) Hold LOAD-TONE-OPERATE-LEVEL switch in LEVEL position. LED's on amplifier indicate 40 to 80 VAC (RMS).
- (7) Set LOAD-TONE-OPERATE-LEVEL switch in OPERATE position.

NOTE: Output indications above indicate serviceable amplifier. Out-of-tolerance unit should be recalibrated in shop. Do not attempt calibration of amplifier gain in the aircraft. Calibration of the PA amplifier and PA preamplifier must be accomplished per applicable sections of the Douglas Aircraft Company Component Maintenance Manual (Ref. 23-30-01 and 23-30-04). Calibration of the amplifiers by any other procedure may result in acoustic feedback or insufficient volume levels.

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- (8) Connect test setup per Figure 201.

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- (9) At FWD attendants' station:
- (a) Remove handset from hanger and disconnect from handset jack.
  - (b) Connect phone plug of test setup to handset jack.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (10) At flight compartment pedestal:
- (a) Remove handset from hanger and disconnect from handset jack.
  - (b) Connect phone plug of test setup to handset jack.

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B. System Adjustments

**WJE 401-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871-881, 883, 884, 886, 887, 892, 893**

NOTE: Procedures performed to calibrate VU meters and verify amplifier output level.

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

NOTE: Procedures performed to calibrate VU meters, Selcal/P.A. panel and verify amplifier output level.

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NOTE: The left and right fuel shutoff lever switches are used for automatic gain control on PA test.

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

**Table 202**

Operation		Desired Result
(1)	Set audio oscillator frequency to 1000 Hz (Hertz). Set amplitude set amplitude to 1.4 V on test meter. (Paragraph 1.N.)	Output 1000(±10) Hz, 1.4(±0.5) V
(2)	On FWD cabin attendants' panel, press ANNOUNCE pushbutton momentarily; readjust amplitude if required.	ANNOUNCE pushbutton comes on; meter indicates same as step (1). 1000 Hz tone heard, all speakers EXCEPT cabin attendants' AUX speakers and FWD galley main speaker.
(3)	On terminal board S30-21, measure voltage between terminals 1 and 5.	52(±2) Alternating Current Volts (VAC) (rms).
(4)	Place left and right FUEL shutoff levers to OFF.	Amplifier gain at "ground" value or engines off condition.
(5)	Set audio oscillator amplitude to measure 10 V rms on terminals 1 and 5, terminal board S30-21.	10(±0.5) VAC (rms).
(6)	At FWD attendant station, behind attendants' panel enclosure, adjust VU potentiometer R40-4 to place needle on attendants' VU meter at right-hand edge of white arc.	Needle at Right Hand (RH) edge of white arc.

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

**Table 202 (Continued)**

Operation		Desired Result
(6a)	Observe VU meter on aft attendants panel; needle should be within 3 needle widths of right-hand edge of white arc.	Needle at r.h. edge of white arc $\pm 3$ needle-widths.
(7)	Observe SELCAL/PA LEVEL panel on pedestal. Verify that neither PA LEVEL NORM or PA LEVEL HIGH lamp is lighted.	Both PA LEVEL lamps OFF.
(8)	Place right FUEL shutoff lever to on.	Amplifier gain at engines on condition.
(9)	At FWD attendant station, adjust engines on VU potentiometer R40-5 to place VU needle at right hand edge of white arc.	Needle at RH edge of white arc.
(9a)	Observe VU meter on aft attendant panel; needles should be within 3 needle widths of right hand edge of white arc.	Needles at RH edge of white ARC $\pm 3$ needle-widths.
(10)	Observe SELCAL/PA LEVEL panel on pedestal. Verify that neither PA LEVEL NORM nor PA HIGH lamp is lighted.	Both PA LEVEL lamps off.
(11)	Disconnect test phone plug from attendants' handset jack; connect handset to jack and place in hanger.	
(12)	Disconnect pedestal handset and remove from hanger; plug test phone plug into pedestal handset jack.	
(13)	Set frequency of audio oscillator to 1000 Hz.	Output 1000 ( $\pm 10$ ) Hz.
(14)	Momentarily press PA pushbutton on overhead switch panel.	PA ON pushbutton comes on blue.
(15)	Readjust oscillator for zero output.	
(15a)	Place left fuel shutoff lever to on.	Amplifier gain at engines on value.
(16)	Slowly increase audio oscillator output until PA LEVEL NORM lamp comes on; verify needle of FWD attendants VU meter is at left edge of white arc.	PA LEVEL NORM lamp on; VU needle at left edge of white arc $\pm 2$ needle-widths.
(17)	Continue slowly increasing oscillator output until PA LEVEL HIGH lamp comes on, in addition to PA LEVEL NORM lamp; verify needle of FWD attendants VU meter is within 2 needle-widths of right edge of white arc.	Both PA LEVEL lights on; VU needle at right edge of white arc $\pm 2$ needle-widths.
(18)	Momentarily press handset hanger switch to deactivate PA circuit, and remove test phone plug from handset jack.	
(19)	Connect handset to jack, place handset in hanger.	
(20)	Place left and right FUEL shutoff levers to OFF.	

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**WJE 405, 409, 410, 873, 874, 884**

**Table 203**

Operation		Desired Result
(1)	Set audio oscillator frequency to 1000 Hz. Set amplitude to 1.4 V on test meter. (Paragraph 1.N.)	Output 1000 Hz, 1.4(±0.5) V.
(2)	On FWD cabin attendants' panel, press ANNOUNCE pushbutton momentarily; readjust amplitude if required.	ANNOUNCE pushbutton comes on; meter indicates same as step (1). 1000 Hz tone heard, all speakers EXCEPT FWD (Forward) attendants.
(3)	On terminal board S30-21, measure voltage between terminals 1 and 5.	52(±2) VAC (rms).
(4)	Place left and right fuel levers to OFF position.	Amplifier gain at engines off condition.
(5)	Set audio oscillator amplitude to measure 10 VAC (rms) on terminals 1 and 5, terminal board S30-21.	10 (±0.5) VAC (rms).
(6)	At FWD attendant station, adjust VU potentiometer R40-4 to place needle on attendants' VU meter at right-hand edge of white arc.	Needle at RH edge of white arc.
(7)	Observe VU meters on overhead switch panel and aft attendants panel; needles should be within 3 needle widths of right-hand edge of white arc.	Needle at RH edge of white arc ±3 needle-widths.
(8)	Place right fuel shutoff lever to on.	Amplifier gain at "flight" value or engines on condition.
(9)	At FWD attendant station, adjust VU potentiometer R40-5 to place VU needle at RH edge of white arc.	Needle at RH edge of white arc.
(10)	Observe VU meters on overhead switch panel and aft attendants panel; needles should be within 3 needle widths of RH edge of white arc.	Needles at RH edge of white arc ±3 needle-widths.
(11)	Disconnect test phone plug from attendants' handset jack; connect handset to jack and place in hanger.	
(12)	Place right fuel shutoff lever to OFF.	

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

**Table 204**

Operation		Desired Result
<b>WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872</b>		
(1)	Set audio oscillator frequency to 1000 Hz. Set amplitude to 1.4 V on test meter. (Paragraph 1.N.)	Output 1000 (±10) Hz, 1.4(±0.02) V.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(1)	Set audio oscillator frequency to 1000 Hz. Set amplitude to 0.5 V on test meter.	Output 1000 (±10) Hz, 0.5(±0.02) V.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>		
(2)	On terminal board S30-21, connect voltmeter between terminals 1 and 5.	

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**WJE 401-404, 406-408, 411, 412, 414, 875-880 (Continued)**

**Table 204 (Continued)**

Operation		Desired Result
<b>WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872</b>		
(2)	On terminal board S30-21, measure voltage between terminals 1 and 5.	56(±2) VAC (rms).
<b>WJE 407, 408, 411, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 886, 887, 892, 893</b>		
(3)	On cockpit overhead panel, push and release PA pushbutton; readjust amplitude to 1.40 volts if necessary..	PA button comes on. Amplitude is 1.40(±0.02) V. A 1000 Hz tone heard all speakers.
<b>WJE 401-404, 406, 412, 414, 875-879</b>		
(3)	On cockpit overhead panel, push and release PA pushbutton; readjust amplitude to 0.5 volts if necessary.	PA button comes on. Amplitude is 0.5(±0.02) V. A 1000 Hz tone heard all speakers.
<b>WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872</b>		
(4)	Verify voltmeter reads 56 VAC (rms) on terminal board S30-21.	56(±2) VAC (rms) on voltmeter.
<b>WJE 407, 408, 411, 880, 881, 883, 886, 887, 892, 893</b>		
(4)	Verify voltmeter reads 58 VAC (rms) on terminal board S30-21.	58(±4) VAC (rms) on voltmeter.
<b>WJE 401-404, 406, 412, 414, 875-879</b>		
(4)	Verify voltmeter reads 32 VAC (rms) on terminal board S30-21.	32(±4) VAC (rms) on voltmeter.
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>		
(5)	Place left and right fuel engines shutoff levers to OFF.	Amplifier gain at engines off value.
<b>WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872</b>		
(6)	Disconnect test phone plug from flight compartment pedestal jack; connect handset to jack and place in cradle.	Test set up removed and handset plugged in.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(6)	Set audio oscillator amplitude to measure 10 V rms on terminals 1 and 5, terminal board S30-21.	10(±0.3) VAC.
(7)	At FWD attendant station, adjust engines off potentiometer R40-4 to place needle on cockpit PA VU meter at right edge of white arc.	Needle at right edge of white arc.
(8)	Place right fuel shutoff engine lever to on.	Amplifier gain at engine on value.
(9)	At FWD attendant station, adjust engines on potentiometer until needle on cockpit PA VU meter is at right edge of white arc.	Needle at right edge of white arc.

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**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)**

**Table 204 (Continued)**

Operation		Desired Result
(10)	Disconnect test phone plug from flight compartment pedestal jack; connect handset to jack and place in cradle.	
(11)	Place right fuel shutoff lever to OFF.	

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C. Functional Test

**WJE 401-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871-881, 883, 884, 886, 887, 892, 893**

NOTE: Tests PA amplifier, inputs, outputs, speakers and associated wiring.

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

NOTE: Tests PA amplifier, PA preamplifier inputs, outputs, speakers and associated wiring.

**Table 205**

Operation		Desired Result
(1)	Verify left and right fuel shutoff lever switches OFF.	Engines off condition.
(2)	In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on blue.
(3)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, at following speaker locations.	Speech heard, all locations.
	(a) Each seat row, left and right.	
	(b) Lavatories.	
	(c) Galleys.	
	(d) Each attendant station.	
(4)	Place left fuel shutoff lever switch to ON.	Amplifier gain at engines on condition.
(5)	Repeat step (3) and compare audio volume with step (3) condition.	Audio level higher than in "ground" or engines off condition.
(5a)	Remove mouthpiece of each handset and adjust mic potentiometer for optimum sound level. Counterclockwise will increase volume, clockwise will decrease volume.	Handset gain adjusted for optimum sound.
(6)	Place left fuel shutoff lever switch to OFF.	Amplifier gain at engines off value.
(7)	Place pedestal handset on hanger.	PA ON pushbutton goes off.
(8)	At FWD attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	ANNOUNCE pushbutton comes on.

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

**Table 205 (Continued)**

Operation		Desired Result
(9)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers EXCEPT at attendants AUX channel speakers and FWD galley main channel speaker.	Speech heard, all speakers EXCEPT attendant speakers and FWD galley.
(9a)	Open fwd left lav door and speak into FWD attendant handset.	Speaker volume decreases when lav door opened.
(10)	Place FWD attendant handset on hanger.	ANNOUNCE pushbutton goes off.
(11)	At intermediate attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	Intermediate and aft ANNOUNCE pushbuttons come on.
(12)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers EXCEPT AUX channel speakers at attendants stations and intermediate attendant main channel speaker.	All attendants' AUX channel speakers and intermediate attendant main channel speaker silent; speech heard, all other speakers.
(13)	Place intermediate attendant handset on hanger.	Intermediate and aft ANNOUNCE pushbuttons go off.
(14)	At aft attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	Intermediate and aft ANNOUNCE pushbuttons come on.
(15)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers EXCEPT AUX channel speakers at attendants stations, aft attendant main channel speaker; and in aft lavatory speakers.	Aft lavatory speakers muted; All attendants' AUX channel speakers silent aft attendant main channel speaker silent; speech heard, all other speakers.
(16)	Place aft attendant handset on hanger.	Intermediate and aft ANNOUNCE pushbuttons go off.

WJE 405, 409, 410, 873, 874, 884

**Table 206**

Operation		Desired Result
(1)	Verify left and right fuel shutoff lever switches OFF.	Amplifier gain at engines off condition.
(2)	In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on blue.
(3)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, at following speaker locations.	Speech heard, all locations.
(a)	Each seat row, left and right.	
(b)	Lavatories.	

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WJE 405, 409, 410, 873, 874, 884 (Continued)

**Table 206 (Continued)**

Operation		Desired Result
	(c) Galleys.	
	(d) Each attendant station.	
(4)	Place left fuel shutoff lever switch to ON.	Amplifier gain at engines on condition.
(5)	Repeat step (3) and compare audio volume with step (3) condition.	Audio level higher than in engines off condition.
(5a)	Remove mouthpiece of each handset and adjust mic potentiometer for optimum sound level. Counterclockwise will increase volume, clockwise will decrease volume.	Handset gain adjusted for optimum sound.
(6)	Place left fuel shutoff lever switch to OFF.	Amplifier gain at engines off condition.
(7)	Place pedestal handset on hanger.	Blue PA ON pushbutton goes off.
(8)	At FWD attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	ANNOUNCE pushbutton comes on.
(9)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers EXCEPT at FWD attendant station.	Speech heard, all speakers EXCEPT FWD attendants.
(10)	Place FWD attendant handset on hanger.	ANNOUNCE pushbutton goes off.
(11)	At mid attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	Mid and aft ANNOUNCE pushbuttons come on.
(12)	Press handset PTT switch while speaking into handset. All speakers should reproduce speech clearly, free of noise or distortion, EXCEPT speakers at aft attendant station and in aft lavatories.	Aft attendant and lavatory speakers muted; speech heard, all other speakers.
(13)	Place mid attendant handset on hanger.	Mid and aft ANNOUNCE pushbuttons go off.
(14)	At aft attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	Mid and aft ANNOUNCE pushbuttons come on.
(15)	Press handset PTT switch while speaking into handset. All speakers should reproduce speech clearly, free of noise or distortion, EXCEPT at aft attendant station and in aft lavatories.	Aft attendant and lavatory speakers muted; speech heard, all other speakers.
(16)	Place aft attendant handset on hanger.	Mid and aft ANNOUNCE pushbuttons go off.

WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893

**Table 207**

Operation		Desired Result
(1)	Verify left and right fuel shutoff lever switches OFF.	Amplifier gain at engines off condition.

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**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)**

**Table 207 (Continued)**

Operation		Desired Result
(2)	In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on blue.
(3)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, at following speaker locations.	Speech heard, all locations.
(a)	Each seat row, left and right.	
(b)	Lavatories.	
(c)	Galleys.	
(d)	Each attendant station.	
<b>NOTE:</b> Throughout test aft lav speakers will mute only when door is open and speaking from aft attendants station.		
(4)	Place left fuel shutoff lever switch to ON.	Amplifier gain at engines on condition.
(5)	Repeat step (3) and compare audio volume with step (3) condition.	Audio level higher than in engines off condition.
(6)	Place left fuel shutoff lever switch to OFF.	Amplifier gain at engines off condition.
(7)	Place pedestal handset on hanger.	Blue PA ON pushbutton goes off.
(8)	At FWD attendant station, remove handset from cradle and momentarily press PA pushbutton.	Green LED integral to handset PA pushbutton comes on.
<b>WJE 881, 883, 886, 887, 892, 893</b>		
(9)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers.	Speech heard, all speakers.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>		
(9)	Press handset PTT switch while speaking into handset.	Speech heard, all speakers EXCEPT attendants AUX channel speakers and FWD galley main channel speaker.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(10)	Continue speaking into FWD attendant handset; open left FWD lav door.	Speaker volume level decreases when lav door opened.
(11)	Place FWD attendant handset into cradle.	
<b>WJE 407, 408, 411, 880</b>		
<b>NOTE:</b> If mid attendant station is not installed, go to step (15).		
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(12)	At mid attendant station, remove handset from cradle and momentarily press PA pushbutton located on handset.	Green LED integral to handset PA pushbutton comes on.

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**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)**

**Table 207 (Continued)**

Operation		Desired Result
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>		
(13)	Press handset PTT switch while speaking into handset.	Mid attendant main channel speaker and attendants AUX channel speakers muted; speech heard, all other speakers
<b>WJE 881, 883, 886, 887, 892, 893</b>		
(13)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers.	Speech heard, all speakers.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(14)	Place mid attendant handset in cradle.	
(15)	At aft attendant station, remove handset from cradle and momentarily press PA pushbutton located on handset.	Green LED integral to handset PA pushbutton comes on.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>		
(16)	Press handset PTT switch while speaking into handset. All speakers should reproduce speech clearly, free of noise or distortion.	Aft attendant, aft lavatory and attendants AUX channel speakers muted; speech heard, all other speakers
<b>WJE 881, 883, 886, 887, 892, 893</b>		
(16)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers.	Speech heard, all speakers.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(17)	Continue speaking into aft attendant handset; open aft lav door.	Speaker mutes when lav door opened.
(18)	Verify speech heard in aft lav with aft lav door closed.	Verified.
(19)	Place aft attendant handset on cradle.	

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

**Table 208**

Operation		Desired Result
(1)	Verify left and right fuel shutoff lever switches OFF.	Engines off condition.
(2)	In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel.	PA ON pushbutton located on overhead switch panel comes on blue.
(3)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, at following speaker locations.	Speech heard, all locations.
	(a)	Each seat row, left and right.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

**Table 208 (Continued)**

Operation		Desired Result
	(b) Lavatories.	
	(c) Galleys.	
	(d) Each attendant station.	
<b>NOTE:</b> Throughout test aft lav speakers will mute only when door is open and speaking from aft attendants station.		
(4)	Place left fuel shutoff lever switch to ON.	Amplifier gain at engines on value.
(5)	Repeat step (3) and compare audio volume with step (3) condition.	Audio level higher than in engines off condition.
(6)	Place left fuel shutoff lever switch to OFF.	Amplifier gain at engines off value.
(7)	Place pedestal handset on hanger.	Blue PA ON pushbutton on overhead switch panel goes off.
(8)	At FWD attendant station, remove handset from cradle and momentarily press PA pushbutton located on handset.	Green LED integral to handset PA pushbutton comes on.
(9)	Press handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion, by all speakers EXCEPT attendants station AUX channel speakers and FWD galley main channel speaker.	Speech heard, all speakers EXCEPT attendants AUX channel speakers and FWD galley main channel speaker.
(10)	Continue speaking into FWD attendant handset; open FWD left lav door.	Speaker volume level decreases when lav door opened.
(11)	Place FWD attendant handset into cradle.	
(12)	At aft attendant station, remove handset from cradle and momentarily press PA pushbutton located on handset.	Green LED integral to handset PA pushbutton comes on.
(13)	Press handset PTT switch while speaking into handset. All speakers should reproduce speech clearly, free of noise or distortion, EXCEPT main speaker at aft attendant station, aft lavatory speaker and attendants AUX channel speakers.	Aft attendant, aft lavatory and attendants AUX channel speakers muted; speech heard all other speakers.
(14)	Verify speech heard in aft lav with aft lav door closed.	Verified.
(15)	Place aft attendant handset in cradle.	

**WJE ALL**

D. Priority Test

WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871, 872, 874, 884, 891

**NOTE:** Procedures test crew controls, priority logic of PA amplifier and PA Relay/Interlock panel, and associated wiring.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

**NOTE:** Procedures test crew controls, priority logic of PA amplifier and PA Electronic Switching Unit, and associated wiring.

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

**NOTE:** For remainder of tests, blue PA ON button on cockpit overhead switch panel will illuminate whenever channel 1 (cockpit, radio rack) or channel 2 (cabin) of the PA amplifier is keyed.

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

**Table 209**

Operation		Desired Result
(1)	In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on.
(2)	Press handset PTT switch while speaking into handset.	Speech heard, all speakers.
(3)	While speaking into pedestal handset:	
(a)	Remove FWD attendant handset from hanger and momentarily press attendant's ANNOUNCE pushbutton.	ANNOUNCE pushbutton does not come on.
(b)	Press attendant handset PTT switch while speaking into handset.	Speech from pedestal handset continues uninterrupted, all speakers.
(4)	Place FWD attendant handset on hanger.	
(5)	Repeat steps (3) and (4) for intermediate and aft attendant stations.	Same as for steps (3) and (4).
(6)	Place pedestal handset on hanger.	PA ON pushbutton goes off.
(7)	At FWD attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	ANNOUNCE pushbutton comes on.
(8)	Press handset PTT switch while speaking into handset.	Speech heard, all speakers EXCEPT attendants' speakers and FWD galley.
(9)	While speaking into FWD attendant handset:	
(a)	Remove pedestal handset from hanger and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on; attendants' ANNOUNCE pushbutton goes off.
(b)	Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers; speech from attendant handset NOT heard.
(c)	Place pedestal handset on hanger.	PA ON pushbutton goes off.
(d)	Momentarily press FWD attendant ANNOUNCE pushbutton. Continue speaking into handset.	FWD ANNOUNCE pushbutton comes on. Speech from FWD handset heard, all speakers EXCEPT attendants' speakers.
(e)	Remove intermediate attendant handset from hanger and momentarily press ANNOUNCE pushbutton on intermediate attendant panel.	Intermediate ANNOUNCE pushbutton does NOT come on.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

**Table 209 (Continued)**

Operation		Desired Result
	(f) Press intermediate attendant handset PTT switch while speaking into handset.	Speech from FWD attendant handset continues from all speakers EXCEPT attendants' speakers.
	(g) Replace intermediate attendant handset on hanger.	
	(h) Repeat (d) through (f) for aft attendant station.	Same as for (d) through (f).
	(i) Place FWD attendant handset on hanger.	FWD ANNOUNCE pushbutton goes off.
(10)	Again momentarily press ANNOUNCE on aft attendant panel and press PTT switch while speaking into handset.	Intermediate and aft ANNOUNCE pushbuttons come on. Speech from aft attendant handset heard, all speakers EXCEPT aft galley and lavatories speakers muted; all attendants' speakers silent.
(11)	While speaking into aft attendant handset:	
	(a) Remove FWD attendant handset from hanger and momentarily press FWD attendant ANNOUNCE pushbutton.	FWD attendant ANNOUNCE pushbutton comes on; intermediate and aft ANNOUNCE go off.
	(b) Press FWD handset PTT switch while speaking into handset.	Speech from FWD attendant handset heard, all speakers EXCEPT attendant's; speech from aft attendant handset NOT heard.
	(c) Place FWD attendant handset on hanger.	FWD ANNOUNCE goes off.
	(d) Again press ANNOUNCE pushbutton on aft attendant panel, and PTT switch on handset. Continue to speak into handset.	Intermediate and aft ANNOUNCE come on; speech from aft attendant handset heard, all speakers EXCEPT aft galley and lavatories speakers muted; all attendants' speakers silent.
	(e) Remove pedestal handset from hanger and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on; intermediate and aft ANNOUNCE go off.
	(f) Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers.
	(g) Place pedestal handset on hanger.	PA ON goes off.
	(h) Press ANNOUNCE pushbutton on aft attendant panel and PTT switch on handset. Continue speaking into handset.	Intermediate and aft ANNOUNCE come on; speech heard all speakers EXCEPT aft galley and lavatories speakers muted; all attendants' speakers silent.
	(i) Remove intermediate attendant handset from hanger and momentarily press intermediate ANNOUNCE pushbutton.	
	(j) Press intermediate attendant handset PTT switch while speaking into handset.	Speech from aft attendant handset continues to be heard; speech from intermediate handset also heard.
	(k) Place aft attendant handset on hanger.	Intermediate and aft ANNOUNCE remain on.
(12)	Continue to press PTT switch on intermediate attendant handset while speaking into handset.	Speech from intermediate attendant handset heard, all speakers; EXCEPT all attendants' speakers silent.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

**Table 209 (Continued)**

Operation		Desired Result
(13)	While speaking into intermediate attendant's handset:	
(a)	Remove pedestal handset from hanger and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton come on; intermediate and aft ANNOUNCE go off.
(b)	Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers; speech from intermediate handset NOT heard.
(c)	Place pedestal handset on hanger.	PA ON goes off.
(d)	Momentarily press intermediate ANNOUNCE pushbutton; continue speaking into intermediate attendant handset.	Intermediate and aft ANNOUNCE pushbuttons come on. Speech heard, all speakers EXCEPT aft galley and lavatories speakers muted; all attendants' speakers silent.
(e)	Remove FWD attendant handset from hanger and momentarily press ANNOUNCE pushbutton on panel.	FWD attendant ANNOUNCE pushbutton comes on; intermediate and aft ANNOUNCE go off.
(f)	Press FWD attendant handset PTT switch while speaking into handset.	Speech from FWD attendant handset heard, all speakers EXCEPT attendants'. Speech from intermediate attendant handset NOT heard.
(g)	Place FWD attendant handset on hanger.	FWD ANNOUNCE pushbutton goes off.
(h)	Momentarily press ANNOUNCE switch on intermediate attendant panel and continue speaking into intermediate handset.	Intermediate and aft ANNOUNCE pushbuttons come on; speech heard, all speakers EXCEPT all attendants' speakers silent.
(i)	Remove aft attendant handset from hanger and momentarily press aft ANNOUNCE pushbutton.	
(j)	Press aft attendant handset PTT switch while speaking into handset.	Speech from intermediate handset continues; speech from aft handset also heard.
(k)	Place intermediate and aft handsets on hangers.	Intermediate and aft ANNOUNCE pushbuttons go off.

WJE 405, 409, 410, 873, 874, 884

**Table 210**

Operation		Desired Result
(1)	In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on.
(2)	Press handset PTT switch while speaking into handset.	Speech heard, all speakers.
(3)	While speaking into pedestal handset:	
(a)	Remove FWD attendant handset from hanger and momentarily press attendant's ANNOUNCE pushbutton.	ANNOUNCE pushbutton does not come on.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 405, 409, 410, 873, 874, 884 (Continued)

**Table 210 (Continued)**

Operation		Desired Result
	(b) Press attendant handset PTT switch while speaking into handset.	Speech from pedestal handset continues uninterrupted, all speakers.
(4)	Place FWD attendant handset on hanger.	
(5)	Repeat steps (3) and (4) for mid and aft attendant stations.	Same as for steps (3) and (4).
(6)	Place pedestal handset on hanger.	PA ON pushbutton goes off.
(7)	At FWD attendant station, remove handset from hanger and momentarily press ANNOUNCE pushbutton.	ANNOUNCE pushbutton comes on.
(8)	Press handset PTT switch while speaking into handset.	Speech heard, all speakers EXCEPT FWD attendants'.
(9)	While speaking into FWD attendant handset:	
	(a) Remove pedestal handset from hanger and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on; attendants' ANNOUNCE pushbutton goes off.
	(b) Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers; speech from attendant handset NOT heard.
	(c) Place pedestal handset on hanger.	PA ON pushbutton goes off.
	(d) Momentarily press FWD attendant ANNOUNCE pushbutton. Continue speaking into handset.	FWD ANNOUNCE pushbutton comes on. Speech from FWD handset heard, all speakers EXCEPT FWD attendants'.
	(e) Remove mid attendant handset from hanger and momentarily press ANNOUNCE pushbutton on mid attendant panel.	Mid ANNOUNCE pushbutton does NOT come on.
	(f) Press mid attendant handset PTT switch while speaking into handset.	Speech from FWD attendant handset continues from all speakers EXCEPT attendants' speakers.
	(g) Replace mid attendant handset on hanger.	
	(h) Repeat (d) through (f) for aft attendant station.	Same as for (d) through (f).
	(i) Place FWD attendant handset on hanger.	FWD ANNOUNCE pushbutton goes off.
(10)	Again momentarily press ANNOUNCE on aft attendant panel and press PTT switch while speaking into handset.	Mid and aft ANNOUNCE pushbuttons come on. Speech from aft attendant handset heard, all speakers; aft attendants' and lavatories speakers muted.
(11)	While speaking into aft attendant handset:	
	(a) Remove FWD attendant handset from hanger and momentarily press FWD attendant ANNOUNCE pushbutton.	FWD attendant ANNOUNCE pushbutton comes on; mid and aft ANNOUNCE go off.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 405, 409, 410, 873, 874, 884 (Continued)

**Table 210 (Continued)**

Operation		Desired Result
	(b) Press FWD handset PTT switch while speaking into handset.	Speech from FWD attendant handset heard, all speakers EXCEPT FWD attendants'; speech from aft attendant handset NOT heard.
	(c) Place FWD attendant handset on hanger.	FWD ANNOUNCE goes off.
	(d) Again press ANNOUNCE pushbutton on aft attendant panel, and PTT switch on handset. Continue to speak into handset.	Mid and aft ANNOUNCE come on; speech from aft attendant handset heard, all speakers. Aft attendant and lavatories speakers muted.
	(e) Remove pedestal handset from hanger and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton comes on; mid and aft ANNOUNCE go off.
	(f) Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers.
	(g) Place pedestal handset on hanger.	PA ON goes off.
	(h) Press ANNOUNCE pushbutton on aft attendant panel and PTT switch on handset. Continue speaking into handset.	Mid and aft ANNOUNCE come on; speech heard all speakers; aft attendant and lavatory speakers muted.
	(i) Remove mid attendant handset from hanger and momentarily press mid ANNOUNCE pushbutton.	
	(j) Press mid attendant handset PTT switch while speaking into handset.	Speech from aft attendant handset continues to be heard; speech from mid handset also heard.
	(k) Place aft attendant handset on hanger.	Mid and aft ANNOUNCE remain on.
(12)	Continue to press PTT switch on mid attendant handset while speaking into handset.	Speech from mid attendant handset heard, all speakers; mid attendant and lavatory speakers muted.
(13)	While speaking into mid attendant's handset:	
	(a) Remove pedestal handset from hanger and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton come on; mid and aft ANNOUNCE go off.
	(b) Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers; speech from mid handset NOT heard.
	(c) Place pedestal handset on hanger.	PA ON goes off.
	(d) Momentarily press mid ANNOUNCE pushbutton; continue speaking into mid attendant handset.	Mid and aft ANNOUNCE pushbuttons come on. Speech heard, all speakers; mid attendant speaker muted.
	(e) Remove FWD attendant handset from hanger and momentarily press ANNOUNCE pushbutton on panel.	FWD attendant ANNOUNCE pushbutton comes on; mid and aft ANNOUNCE go off.
	(f) Press FWD attendant handset PTT switch while speaking into handset.	Speech from FWD attendant handset heard, all speakers EXCEPT FWD attendants'. Speech from mid attendant handset NOT heard.
	(g) Place FWD attendant handset on hanger.	FWD ANNOUNCE pushbutton goes off.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 405, 409, 410, 873, 874, 884 (Continued)**

**Table 210 (Continued)**

Operation		Desired Result
(h)	Momentarily press ANNOUNCE switch on mid attendant panel and continue speaking into mid handset.	Mid and aft ANNOUNCE pushbuttons come on; speech heard, all speakers EXCEPT MID attendants'.
(i)	Remove aft attendant handset from hanger and momentarily press aft ANNOUNCE pushbutton.	
(j)	Press aft attendant handset PTT switch while speaking into handset.	Speech from mid handset continues; speech from aft handset also heard.
(k)	Place mid and aft handsets on hangers.	Mid and aft ANNOUNCE pushbuttons go off.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

**Table 211**

Operation		Desired Result
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(1)	Remove aft attendant handset from cradle and momentarily press PA pushbutton located on handset. Depress PTT switch and speak into handset.	Green LED integral to PA pushbutton should come on; speech from attendant's handset heard over speakers.
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>		
(2)	Continue to speak into aft attendant's handset; remove mid attendant's handset from cradle then depress and release PA pushbutton located on handset.	Green LED integral to PA pushbutton on mid attendant's handset should come on.
(3)	Press mid attendant's handset PTT switch while speaking into handset:	Speech from both aft and mid cabin attendant's stations heard over all speakers.
(4)	Replace handset on cradle at aft cabin attendant's station.	
(5)	While speaking into mid attendant's handset remove FWD attendant's handset from cradle and momentarily press PA pushbutton located on handset.	Green LED integral to PA pushbutton on FWD attendant's handset should come on; LED on mid attendant's handset should go off.
(6)	Press FWD attendant handset PTT switch while speaking into handset.	Speech from FWD attendant handset heard, all aircraft speakers. Speech from mid attendant handset NOT heard.
(7)	Replace aft attendant handset on cradle.	
(8)	While speaking into FWD attendant handset, remove pedestal handset from cradle and momentarily press PA pushbutton on overhead panel.	PA ON pushbutton remains blue; LED integral to PA pushbutton on FWD attendant's handset should go off.
(9)	Press pedestal handset PTT switch while speaking into handset.	Speech from pedestal handset heard, all speakers; speech from FWD attendant handset NOT heard.

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**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893 (Continued)**

**Table 211 (Continued)**

Operation		Desired Result
(10)	Place pedestal handset on cradle. Place FWD handset on cradle.	

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E. Flight Compartment PA Test

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

NOTE: Test performed to check microphone inputs, PA priority logic, audio control panels, jack panels, cockpit speakers and associated wiring.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

NOTE: Test performed to check oxygen mask microphone inputs, boom microphone inputs, PA priority logic, audio control panels, jack panels, cockpit speakers and associated aircraft wiring.

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

**Table 212**

Operation		Desired Result
(1)	On audio control panels at captain's, first officer's, observer's, and radio rack stations.	Controls set for passenger address through audio integrating system.
	(a) Place PA volume levers to mid-range position.	
	(b) Place all other volume levers to off position.	
(2)	On captain's and first officer's cockpit speakers, rotate VOL controls to mid-range.	
<u>NOTE:</u> During tests, readjustment of audio panel and speaker VOL controls may be necessary to obtain optimum audio volume without feedback into microphones. Both pilots' speakers are muted by any passenger address PTT from flight compartment.		
(3)	Connect two boom mic/headset assemblies into the oxygen mask and boom microphone jacks at following stations:	
	(a) Captain	Test assemblies plugged in.
	(b) First Officer	
	(c) Observer	
(4)	Plug headset into radio rack headset jack.	Headset plugged in.
<u>NOTE:</u> Be sure that during the subsequent tests, when speaking into one boom microphone the other microphone is covered and repositioned a reasonable distance away so that there are not two inputs into the PA system from two microphones at the same time.		
(5)	Actuate Captain's OXY MASK MIKE switch, located on left console.	Switch actuated.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

**Table 212 (Continued)**

Operation		Desired Result
(6)	Cover Captain's boom mic test assembly and speak into Captain's boom test mic which simulates oxygen mask microphone. Speech reproduction should be heard at following:	
(a)	Earpiece of Captain's mask mic assembly	Speech heard
(b)	Earpiece of Captain's boom mic assembly	Speech heard
(c)	Earpiece of First Officer's mask mic assembly	Speech heard
(d)	Earpiece of First Officer's boom mic assembly	Speech heard
(e)	Earpiece of Observer's mask mic assembly	Speech heard
(f)	Earpiece of Observer's boom mic assembly	Speech heard
(g)	Captain's cockpit speaker	Speech heard
(h)	First Officer's cockpit speaker	Speech heard
(i)	All cabin PA speakers	Speech heard
(j)	Radio rack headset	Speech heard
(7)	Cover Captain's boom test mic assembly which simulates oxygen mask mic, then speak into Captain's boom test mic. Speech reproduction should be heard at following:	
(a)	Earpiece of Captain's mask mic assembly	Speech heard
(b)	Earpiece of Captain's boom mic assembly	Speech heard
(c)	Earpiece of First Officer's mask mic assembly	Speech heard
(d)	Earpiece of First Officer's boom mic assembly	Speech heard
(e)	Earpiece of Observer's mask mic assembly	Speech heard
(f)	Earpiece of Observer's boom mic assembly	Speech heard
(g)	Captain's cockpit speaker	Speech heard
(h)	First Officer's cockpit speaker	Speech heard
(i)	All cabin PA speakers	Speech heard
(j)	Radio rack headset	Speech heard
(8)	Release Captain's OXY MASK MIKE switch.	Switch released.
(9)	Actuate First Officer's OXY MASK MIKE switch located on right console.	Switch actuated.

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

**Table 212 (Continued)**

Operation		Desired Result
(10)	Cover First Officer's boom mic test assembly and speak into First Officer's boom test mic which simulates oxygen mask mic. Speech reproduction should be heard at following:	
	(a) Earpiece of Captain's mask mic assembly	Speech heard
	(b) Earpiece of Captain's boom mic assembly	Speech heard
	(c) Earpiece of First Officer's mask mic assembly	Speech heard
	(d) Earpiece of First Officer's boom mic assembly	Speech heard
	(e) Earpiece of Observer's mask mic assembly	Speech heard
	(f) Earpiece of Observer's boom mic assembly	Speech heard
	(g) Captain's cockpit speaker	Speech heard
	(h) First Officer's cockpit speaker	Speech heard
	(i) All cabin PA speakers	Speech heard
	(j) Radio rack headset	Speech heard
(11)	Cover First Officer's Boom Test Mic Assembly which simulates Oxygen Mask Mic and then speak into First Officer's Boom Test Mic. Speech reproduction should be heard at following:	
	(a) Earpiece of Captain's mask mic assembly	Speech heard
	(b) Earpiece of Captain's boom mic assembly	Speech heard
	(c) Earpiece of First Officer's mask mic assembly	Speech heard
	(d) Earpiece of First Officer's boom mic assembly	Speech heard
	(e) Earpiece of Observer's mask mic assembly	Speech heard
	(f) Earpiece of Observer's boom mic assembly	Speech heard
	(g) Captain's cockpit speaker	Speech heard
	(h) First Officer's cockpit speaker	Speech heard
	(i) All cabin PA speakers	Speech heard
	(j) Radio rack headset	Speech heard
(12)	While speaking into First Officer's boom test microphone, actuate Captain's OXY MASK MIKE switch and speak into Captain's boom test mic.	Switch actuated.

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

**Table 212 (Continued)**

Operation		Desired Result
(13)	Speech from Captain's mic should be heard and speech from First Officer's mic should not be heard.	Speech heard from Captain's mic and not heard from First Officer's mic.
(14)	Release Captain's and First Officer's OXY MASK MIKE switches.	Switches released.
(15)	Remove handset from hanger at Fwd Cabin Attendant's station and press and release ANNOUNCE button.	Handset removed and button depressed and released.
(16)	Depress PTT button on handset and speak into mouthpiece of handset.	PTT button depressed.
(17)	Speech reproduction should be heard at following:	
(a)	Earpiece of Captain's mask mic assembly	Speech heard
(b)	Earpiece of Captain's boom mic assembly	Speech heard
(c)	Earpiece of First Officer's mask mic assembly	Speech heard
(d)	Earpiece of First Officer's boom mic assembly	Speech heard
(e)	Earpiece of Observer's mask mic assembly	Speech heard
(f)	Earpiece of Observer's boom mic assembly	Speech heard
(g)	Captain's cockpit speaker	Speech heard
(h)	First Officer's cockpit speaker	Speech heard
(i)	All cabin P.A. speakers EXCEPT at cabin attendants' stations	Speech heard
(j)	Radio rack headset	Speech heard
(18)	Rotate VOL control on Captain's cockpit speaker in clockwise (CW) and counterclockwise (CCW) directions.	Control rotated.
(19)	Speaker output volume should increase when control is rotated CW and decrease when control is rotated CCW.	Output increases CW and decreases CCW.
(20)	Rotate VOL control on First Officer's cockpit speaker in clockwise and counterclockwise directions.	Control rotated.
(21)	Speaker output volume should increase when control is rotated CW and decrease when control is rotated CCW.	Output increases CW and decreases CCW.
(22)	While speaking into handset at Fwd Attendant station, actuate First Officer's OXY MASK MIKE switch and speak into First Officer's boom test microphone.	Switch actuated.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

**Table 212 (Continued)**

Operation		Desired Result
(23)	Speech from First Officer's mic should be heard over all aircraft speakers and speech from Fwd Attendant station should not be heard.	Speech heard from First Officer's microphone and not heard from Fwd Attendant station.
(24)	Release First Officer's OXY MASK MIKE switch.	Switch released.
(25)	Replace handset on hanger at Fwd Attendant's station.	Handset replaced.
(26)	Remove handset from hanger at mid Cabin Attendant's station, and press and release ANNOUNCE button.	Handset removed and button depressed and released.
(27)	Depress PTT button on handset and speak into mouthpiece of handset.	PTT button depressed.
(28)	Speech reproduction should be heard at following:	
(a)	Earpiece of Captain's mask mic assembly	Speech heard
(b)	Earpiece of Captain's boom mic assembly	Speech heard
(c)	Earpiece of First Officer's mask mic assembly	Speech heard
(d)	Earpiece of First Officer's boom mic assembly	Speech heard
(e)	Earpiece of Observer's mask mic assembly	Speech heard
(f)	Earpiece of Observer's boom mic assembly	Speech heard
(g)	Captain's cockpit speaker	Speech heard
(h)	First Officer's cockpit speaker	Speech heard
(i)	All cabin speakers EXCEPT at cabin attendants' stations	Speech heard
(j)	Radio rack headset	Speech heard
(29)	Replace handset on hanger at intermediate Cabin Attendant's station.	Handset replaced.
(30)	Remove handset from hanger at Aft Cabin Attendant's station, and press and release ANNOUNCE button.	Handset removed and button depressed and released.
(31)	Depress PTT button on handset and speak into mouthpiece of handset.	PTT button depressed.
(32)	Speech reproduction should be heard at following:	
(a)	Earpiece of Captain's mask mic assembly	Speech heard
(b)	Earpiece of Captain's boom mic assembly	Speech heard
(c)	Earpiece of First Officer's mask mic assembly	Speech heard

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

**Table 212 (Continued)**

Operation		Desired Result
	(d) Earpiece of First Officer's boom mic assembly	Speech heard
	(e) Earpiece of Observer's mask mic assembly	Speech heard
	(f) Earpiece of Observer's boom mic assembly	Speech heard
	(g) Captain's cockpit speaker	Speech heard
	(h) First Officer's cockpit speaker	Speech heard
	(i) All cabin speakers EXCEPT cabin attendant's stations	Speech heard
	(j) Radio rack headset	Speech heard
(33)	Replace handset on hanger at Aft Cabin Attendant's station.	Handset replaced.
(34)	Rotate volume control on Captain's cockpit speaker to OFF position.	Speaker OFF.
(35)	Rotate volume control on First Officer's cockpit speaker to OFF position.	Speaker OFF.
(36)	Place PA volume control levers on all audio control panels in OFF (Aft) position:	PA levers OFF.
	(a) Captains	
	(b) First Officer's	
	(c) Observer's	
	(d) Radio rack	
(37)	Disconnect boom mic/headset assemblies from oxygen mask and boom mic jacks at following stations as required:	Test assemblies disconnected.
	(a) Captain	
	(b) First Officer	
	(c) Observer	
(38)	Disconnect headset from Avionics Compartment headset jack.	Headset disconnected.

**WJE 405, 409, 410, 873, 874, 884**

**Table 213**

Operation		Desired Result
(1)	On audio control panels at captain's, first officer's and observer's stations:	Controls set for passenger address through audio integrating system.
	(a) Adjust PA volume control to mid-range.	

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WJE 405, 409, 410, 873, 874, 884 (Continued)

**Table 213 (Continued)**

Operation		Desired Result
	(b) Adjust all other volume controls to off position.	
	(c) Press PA microphone selector pushbuttons	
(2)	On captain's and first officer's cockpit speakers, rotate VOL controls to mid-range.	
<b>NOTE:</b> During tests, readjustment of audio panel and speaker volume controls may be necessary to obtain optimum audio volume without feedback into microphones.		
(3)	Using hand microphone at captain's station, press PTT switch and speak into microphone. Release PTT switch.	Speech of normal volume heard from all PA speakers. Muted speech heard from pilot's speakers.
(4)	On captain's jack panel, place MASK-BOOM switch to MASK position.	
(5)	On captain's control wheel, press and hold PTT switch and speak into captain's oxygen mask microphone. Release PTT switch.	Same as for step (3).
(6)	On captain's audio panel, hold INT-RADIO switch in RADIO position and lightly tap side of captain's mask microphone. Release INT-RADIO switch.	Same as for step (3).
(7)	On captain's jack panel, place MASK-BOOM switch to BOOM position. Hold NORMAL MASK PA switch to MASK PA position and lightly tap side of captain's mask microphone. Release NORMAL-MASK PA switch.	Same as for step (3).
(8)	On captain's control wheel, press and hold PTT switch and speak into captain's boom microphone. Release PTT switch.	Same as for step (3).
(9)	On captain's audio panel, hold INT-RADIO switch in RADIO position and speak into captain's boom microphone. Release INT-RADIO switch.	Same as for step (3).
(10)	Repeat steps (3) through (9) at first officer's station, using corresponding first officer's microphones and controls.	Same as for step (3).
(11)	Using observer's hand microphone, press and hold PTT switch and speak into microphone. Release PTT switch.	Same as for step (3).
(12)	On observer's audio panel, hold INT-RADIO switch in RADIO position lightly tap side of observer's mask microphone. Release INT-RADIO switch.	Same as for step (5).
(13)	At FWD cabin attendant's station, remove handset from hanger; press and release ANNOUNCE pushbutton.	Attendant's ANNOUNCE pushbutton comes on.
(14)	Press PTT switch on attendant's handset and speak into handset.	Speech heard from both cockpit speakers, headsets and all PA speakers except FWD attendants' speakers.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 405, 409, 410, 873, 874, 884 (Continued)**

**Table 213 (Continued)**

Operation		Desired Result
(15)	While speaking into FWD attendant's handset, press and hold any microphone PTT in flight compartment and speak into microphone. Release pilot's and attendant's PTT switches.	Speech from flight compartment microphone heard from all PA speakers and cockpit speakers. Speech from attendant's handset NOT heard. Cockpit speakers muted. Attendant's ANNOUNCE pushbutton remains on.
(16)	Return FWD attendant's handset to hanger.	Attendant's ANNOUNCE pushbutton goes off.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

**Table 214**

Operation		Desired Result
(1)	On audio control panels located at captain's outboard console, first officer's outboard console, E/E compartment and observer's station:	All volume controls OFF.
	(a) Adjust PA volume control to mid-range.	
	(b) Adjust all volume controls to OFF position.	
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-880</b>		
	(c) Press PA mic select button.	
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>		
(2)	On captain's and first officer's cockpit speakers, adjust VOL controls to mid-range.	
<p><b>NOTE:</b> During tests, readjustment of audio panel and speaker volume controls may be necessary to obtain optimum audio volume without feedback into microphones. Both pilots' speakers are muted by any passenger address PTT from flight compartment.</p>		
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-880</b>		
(3)	Using captain's microphone, press PTT switch and speak into microphone while holding PTT switch.	Speech at normal volume heard from all aircraft speakers.
(4)	Release PTT switch.	
<b>WJE 881, 883, 886, 887, 892, 893</b>		
(3)	Using hand microphone at captain's microphone jack panel, hold NORM/PA switch in PA MASK position, then press PTT switch and speak into microphone.	Speech at normal volume heard from all aircraft speakers.
(4)	Release switches.	
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>		
(5)	Repeat steps (3) and (4) at first officer's, observer's stations and radio rack.	Same as for steps (3) and (4).

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**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893 (Continued)**

**Table 214 (Continued)**

Operation		Desired Result
(6)	At FWD cabin attendant's station, remove handset from cradle; press and release PA pushbutton located on handset.	Green LED integral to PA pushbutton comes on.
(7)	Press PTT switch on attendant's handset and speak into handset.	Speech heard over all PA and flight compartment speakers.
(8)	Continue speaking into FWD attendant's handset. Rotate VOL control on Captain's overhead speaker in clockwise and counterclockwise directions.	Speaker output volume should increase when control rotated CW and decrease when rotated CCW.
(9)	Repeat step (7) for First Officer.	Same as for step (7).
(10)	While speaking into handset at FWD attendant's station, press PTT switch on first officer's mic and speak. Release PTT switch.	Speech heard from First Officer's mic at all PA speakers and not heard from FWD attendant's handset.
(11)	Replace handset on cradle at FWD attendant's station.	

**F. Tape Reproducer Test**

**NOTE:** Test performed to test boarding music input and priority logic of the PA system and the associated aircraft wiring

**Table 215**

Operation		Desired Result
(1)	In avionics compartment, at FWD right radio rack shelf 2, place track selection switch on front panel of tape reproducer to AUTO position.	Switch to AUTO.
(2)	On announcement control panel, rotate MUSIC level control clockwise (CW) then counterclockwise (CCW).	Volume level increase with CW rotation; volume level decrease with CCW rotation; tape reproducer output heard over all cabin speakers.
(3)	Verify that audio output identifies various tracks, beginning at any track.	Verified.
<b>NOTE:</b> Approximately six minutes required per track.		
(4)	Remove handset from cradle; press and release PA pushbutton and handset PTT switch then speak into handset mouthpiece.	Green LED integral to PA pushbutton comes on. Speech from handset heard over all cabin speakers; tape announcements NOT heard.
(5)	Replace handset on cradle.	Tape announcements heard over all cabin speakers once again.
(6)	Rotate MUSIC level control to OFF position.	MUSIC level control to OFF; end Tape Reproducer Test.

**WJE ALL**

**G. Call Test**

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

**NOTE:** Test performed to check PA chime circuits, call switches and annunciators, pilot call bell, mechanic call horn and associated wiring.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 405, 407-411, 415, 417-419, 421, 423, 863-866, 869, 871-874, 880, 881, 883, 884, 886, 887, 892, 893**

**NOTE:** Test performed to check PA chime, call switches and annunciators, pilot call channel of central aural warning system (CAWS), mechanic call horn and associated wiring.

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

**NOTE:** Test performed to check PA chime, call switches and annunciators, pilot call chime of central aural warning system (CAWS), mechanic call horn and associated wiring.

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

**Table 216**

Operation		Desired Result
(1)	On overhead switch panel, press and release ATTENDANT CALL pushbutton.	High/low (Bing/Bong) chime tone heard, all attendants speakers; pink annunciator lights come on at FWD, intermediate, and aft attendants stations.
(2)	On FWD attendants' panel, press and release RESET pushbutton.	All pink lights go off.
(3)	On FWD attendants' panel:	
	(a) Press and release ATT pushbutton.	Same as for step (1).
	(b) Press and release RESET pushbutton.	Same as for step (2).
	(c) Press and release PILOT pushbutton.	In flight compartment: pilot call bell heard; blue ATTND CALLING/RESET switch comes on (overhead switch panel).
(4)	Press and release ATTND CALLING/RESET switch.	Switch light goes off.
(5)	Repeat steps (1) through (4) for intermediate attendants' station.	Same as for steps (1) through (4).
(6)	Repeat steps (1) through (4) for aft attendants' station.	Same as for steps (1) through (4).
(7)	On overhead switch panel, press and release MECH CALL pushbutton.	Mechanic call horn in nose wheelwell is heard.
(8)	On external power panel, press and release PILOTS CALL pushbutton.	Pilot call bell heard in flight compartment.
(9)	In aft left lavatory, pull ATTENDANT CALL switch.	Call switch comes on; high chime tone heard, all attendants' speakers; amber annunciator lights come on at FWD, intermediate and aft attendants' stations and cabin ceiling outside lavatory.
(10)	In aft left lavatory, push ATTENDANT CALL switch to reset.	All amber lights go off.
(11)	In aft right lavatory, repeat steps (9) and (10).	Same as for steps (9) and (10).
(12)	In FWD left lavatory, repeat steps (9) and (10).	Same as for steps (9) and (10).
(13)	Above passenger seat, press and release ATT CALL pushbutton on passenger utility panel.	Switch comes on; high chime tone heard, all attendants' speakers; blue annunciator lights come on at FWD, intermediate and aft attendants' stations.
(14)	Again press and release ATT CALL pushbutton.	Switch light and all blue lights go off.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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

**Table 216 (Continued)**

Operation		Desired Result			
(15)	Repeat steps (13) and (14) at all passenger utility panels.		Same as for steps (13) and (14).		
(16)	On overhead switch panel:				
	(a)	Place NO SMOK switch ON.	Low chime tone heard, all speakers.		
	(b)	Place NO SMOK switch OFF.	Low chime tone heard, all speakers.		
	(c)	Place NO SMOK switch to AUTO with landing gear lever down.	Low chime tone heard, all speakers.		
	(d)	Place SEAT BELTS switch ON.	Low chime tone heard, all speakers.		
	(e)	Place SEAT BELTS switch OFF.	Low chime tone heard, all speakers.		
(17)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(18)	At Station 160 relay panel in electrical/electronics compartment, connect terminal X2 of Cabin Low Pressure Warning relay, R2-261, to ground.				
(19)	Close the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
			High/low (Bing-Bong) chime heard at all attendants' speakers.		
(20)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(21)	Disconnect terminal X2 of relay R2-261 from ground.				
(22)	End of call test.				

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WJE 405, 409, 410, 873, 874, 884

**Table 217**

Operation		Desired Result
(1)	On overhead switch panel, press and release ATTENDANT CALL pushbutton	High chime tone heard, all cabin speakers; pink annunciator lights come on at FWD, MID, and AFT attendants' stations.
(2)	On FWD attendants' panel, press and release RESET pushbutton.	All pink lights go off.
(3)	On FWD attendants' panel:	
	(a) Press and release ATT pushbutton.	Same as for step (1).
	(b) Press and release RESET pushbutton.	Same as for step (2).
	(c) Press and release PILOT pushbutton.	In flight compartment: pilot call chime tone heard (CAWS speakers); blue ATTND CALLING/RESET switch comes on (overhead switch panel).
(4)	Press and release ATTND CALLING/RESET switch.	Switch light goes off.
(5)	Repeat steps (1) through (4) for mid attendant's station.	Same as for steps (1) through (4).
(6)	Repeat steps (1) through (4) for aft attendant's station.	Same as for steps (1) through (4).
(7)	On overhead switch panel, press and release MECH CALL pushbutton.	Mechanic call horn in nose wheelwell is heard.
(8)	On external power panel, press and release PILOT CALL pushbutton.	Pilot call chime tone heard in flight compartment.
(9)	In FWD lavatory,	
	(a) Pull ATTENDANT CALL switch.	Call switch comes on; high chime tone heard, all PA speakers; amber annunciator lights come on at FWD, MID and AFT attendant's stations and cabin ceiling outside lavatory.
	(b) Push ATTENDANT CALL switch to reset.	All amber lights go off.
(10)	Repeat step (9) in aft left lavatory.	Same as for step (9).
(11)	Repeat step (9) for aft right lavatory.	Same as for step (9).
(12)	Above passenger seat, press and release ATT CALL pushbutton on passenger utility panel.	Switch comes on; high chime tone heard, all PA speakers; blue annunciator lights come on at FWD, MID and AFT attendants' stations.
(13)	Again press and release ATT CALL pushbutton.	Switch light and all blue lights go off.
(14)	Repeat steps (12) and (13) at all passenger utility panels.	Same as for steps (12) and (13).
(15)	On overhead switch panel:	
	(a) Place NO SMOK switch ON.	Chime tone heard, all speakers.
	(b) Place NO SMOK switch OFF.	
	(c) Place SEAT BELTS switch ON.	Chime tone heard, all speakers.
	(d) Place SEAT BELTS switch OFF.	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 405, 409, 410, 873, 874, 884 (Continued)**

**Table 217 (Continued)**

	Operation	Desired Result
(16)	End of call test.	

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

**Table 218**

	Operation	Desired Result
(1)	On overhead switch panel, press and release ATTENDANT CALL pushbutton.	Chime tone heard, all PA speakers; pink annunciator lights come on at FWD and AFT attendants stations.
(2)	On FWD attendant's panel, lift handset from cradle then return handset to cradle.	All pink lights go off.
(3)	On FWD attendant's panel:	
	(a) Press and release attendant call pushbutton located on handset.	Green LED integral to call pushbutton comes on. Chime tone heard, all PA speakers; pink annunciator lights come on at FWD and AFT attendant's stations.
	(b) Return handset to cradle pushbutton.	All pink lights go off.
(4)	Repeat step (3) for aft attendant's stations.	Same as for step (3).
(5)	On FWD attendant's handset, press and release PILOT CALL pushbutton.	Green LED integral to PILOT CALL pushbutton comes on. Pilot call chime tone heard in flight compartment; cockpit ATTND CALLING/RESET pushbutton comes on.
(6)	Press and release ATTND CALLING/RESET switch.	Switch light goes off.
(7)	Repeat steps (5) and (6) for aft attendant's stations.	Same as for steps (5) and (6).
(8)	On external power panel, press and release PILOT CALL pushbutton.	Pilot call chime tone heard in flight compartment.
(9)	On overhead switch panel, press and release MECH CALL pushbutton.	Mechanic call horn in nose wheelwell is heard.
(10)	In FWD lavatory:	
	(a) Press ATTENDANT CALL switch.	Call switch comes on; chime tone heard, all PA speakers; amber annunciator lights come on at FWD and aft attendant's stations and cabin ceiling outside lavatory.
	(b) Press ATTENDANT CALL switch to reset.	All amber lights go off.
(11)	Repeat step (10) in aft left lavatory.	Same as for step (10).
(12)	Repeat step (10) in aft right lavatory.	Same as for step (10).
(13)	Above passenger seat, press and release ATT CALL pushbutton on passenger utility panel.	Switch comes on; chime tone heard, all speakers; blue annunciator lights come on at FWD and AFT attendant's stations.
(14)	Again press and release ATT CALL pushbutton.	Switch light and all blue lights go off.
(15)	Repeat steps (13) and (14) at all passenger utility panels.	Same as for steps (13) and (14).

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

**Table 218 (Continued)**

Operation		Desired Result			
(16)	On overhead switch panel place NO SMOKING switch to ON.	Chime tone heard, all aircraft speakers.			
(17)	Place NO SMOKING switch to AUTO position; place landing gear lever to DOWN position.	Chime tone heard, all aircraft speakers.			
(18)	On overhead switch panel place FASTEN SEAT BELTS switch to ON.	Chime tone heard, all aircraft speakers.			
(19)	On aft EPC equipment panel, connect terminal X2 of slats extended relay (R2-325) to ground.	Test set-up.			
<b>NOTE:</b> Make sure that slats are in extend mode.					
(20)	Place FASTEN SEAT BELTS to AUTO; remove terminal X2 of slats extended relay from ground.	Chime tone heard, all aircraft speakers.			
(21)	Place FASTEN SEAT BELTS and NO SMOKING switches to OFF.	Test set-up.			
(22)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-366	PASSENGER WARNING SIGNS	Upper EPC	LIGHTS - LEFT AC BUS	K/23
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
	B1-187	LANDING GEAR WARNING	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/26
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(23)	On avionics compartment relay panel, connect terminal X2 of cabin low pressure warning relay to ground.	Chime tone heard at FWD and AFT attendant's speakers.			
(24)	Close the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
			High/low (Bing/Bong) chime tone heard at FWD, MID, and AFT attendant's speakers.		
(25)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23

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**WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872 (Continued)**

**Table 218 (Continued)**

Operation			Desired Result		
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(26)	Disconnect terminal X2 from ground.				
(27)	Close the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-366	PASSENGER WARNING SIGNS	Upper EPC	LIGHTS - LEFT AC BUS	K/23
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
	B1-187	LANDING GEAR WARNING	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/26
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(28)	End of call test.				

**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893**

**Table 219**

Operation		Desired Result
<b>WJE 401-404, 406, 412, 414, 875-879</b>		
(1)	On overhead switch panel, press and release ATTENDANT CALL pushbutton.	High/low (Bing/Bong) chime tone heard at FWD, MID and AFT attendants speakers. Pink annunciator lights come on at FWD, MID, and AFT attendant's stations.
<b>WJE 881, 883, 886, 887, 892, 893</b>		
(1)	On overhead switch panel, press and release ATTENDANT CALL pushbutton.	Chime tone heard at FWD, MID, and AFT attendant's speakers; pink annunciator lights come on at FWD, MID, and AFT attendants stations.
<b>WJE 407, 408, 411, 880</b>		
(1)	On overhead switch panel, press and release ATTENDANT CALL pushbutton.	High/low (Bing/Bong) chime tone heard, all PA speakers; pink annunciator lights come on at FWD, MID (if installed), and AFT attendants stations.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(2)	On FWD attendant's panel, lift handset from cradle then return handset to cradle.	All pink lights go off.
(3)	On FWD attendant's panel:	

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WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)

**Table 219 (Continued)**

Operation		Desired Result
<b>WJE 881, 883, 886, 887, 892, 893</b>		
	(a) Press and release attendant call pushbutton located on handset.	Green LED integral to call pushbutton comes on. Chime tone heard at FWD, MID, and AFT attendant's speakers; pink annunciator lights come on at FWD, MID, and AFT attendant's stations.
<b>WJE 401-404, 406, 412, 414, 875-879</b>		
	(a) Press and release attendant call pushbutton located on handset.	Green LED integral to call pushbutton comes on. High/Low (Bing/Bong) chime tone heard at FWD, MID and AFT attendants speakers. Pink annunciator lights come on at FWD, MID, and AFT attendant's stations.
<b>WJE 407, 408, 411, 880</b>		
	(a) Press and release attendant call pushbutton located on handset.	Green LED integral to call pushbutton comes on. High/Low chime tone heard at FWD, MID, and AFT attendant's speakers; pink annunciator lights come on at FWD, MID (if installed), and AFT attendant's stations.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
	(b) Return handset to cradle.	All pink lights go off.
<b>WJE 401-404, 406, 412, 414, 875-879, 881, 883, 886, 887, 892, 893</b>		
(4)	Repeat step (3) for mid and aft attendant's stations.	Same as for step (3).
<b>WJE 407, 408, 411, 880</b>		
(4)	Repeat step (3) for mid (if installed) and aft attendant's stations.	Same as for step (3).
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(5)	On FWD attendant's handset, press and release PILOT CALL pushbutton.	Green LED integral to PILOT CALL pushbutton comes on. Pilot call chime tone heard in flight compartment; cockpit ATTND CALLING/RESET pushbutton comes on.
(6)	Press and release ATTND CALLING/RESET switch.	Switch light goes off.
<b>WJE 401-404, 406, 412, 414, 875-879, 881, 883, 886, 887, 892, 893</b>		
(7)	Repeat steps (5) and (6) for mid and aft attendant's stations.	Same as for steps (5) and (6).
<b>WJE 407, 408, 411, 880</b>		
(7)	Repeat steps (5) and (6) for mid (if installed) and aft attendant's stations.	Same as for steps (5) and (6).
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(8)	On external power panel, press and release PILOT CALL pushbutton.	Pilot call chime tone heard in flight compartment.

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**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)**

**Table 219 (Continued)**

Operation		Desired Result
(9)	On overhead switch panel, press and release MECH CALL pushbutton.	Mechanic call horn in nose wheelwell is heard.
(10)	In FWD lavatory:	
<b>WJE 881, 883, 886, 887, 892, 893</b>		
(a)	Press ATTENDANT CALL switch.	Call switch comes on; Tone heard at FWD, MID and AFT attendant's speakers; amber annunciator lights come on at FWD, MID and AFT attendant's stations and cabin ceiling outside lavatory.
<b>WJE 401-404, 406, 412, 414, 875-879</b>		
(a)	Press ATTENDANT CALL switch.	Call switch comes on; high chime tone heard at FWD, MID and AFT attendants speakers. Amber annunciator lights come on at FWD, MID and AFT attendant's stations.
<b>WJE 407, 408, 411, 880</b>		
(a)	Press ATTENDANT CALL switch.	Call switch comes on; high chime tone heard at FWD, mid and aft attendant's speakers; amber annunciator lights come on at FWD, MID (if installed) and AFT attendant's stations.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(b)	Press ATTENDANT CALL switch to reset.	All amber lights go off.
(11)	Repeat step (10) in aft left lavatory.	Same as for step (10).
(12)	Repeat step (10) in aft right lavatory.	Same as for step (10).
<b>WJE 401-404, 406, 412, 414, 875-879, 881, 883, 886, 887, 892, 893</b>		
(13)	Above passenger seat, press and release ATT CALL pushbutton on passenger utility panel.	Call switch comes on; high chime tone heard at all cabin speakers. Blue annunciator lights come on at FWD, MID and AFT attendant's stations.
<b>WJE 407, 408, 411, 880</b>		
(13)	Above passenger seat, press and release ATT CALL pushbutton on passenger utility panel.	Switch comes on; chime tone heard at FWD, MID and AFT attendant's speakers; blue annunciator lights come on at FWD, MID (if installed) and AFT attendant's stations.
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>		
(14)	Again press and release ATT CALL pushbutton.	Switch light and all blue lights go off.
(15)	Repeat steps (13) and (14) at all passenger utility panels.	Same as for steps (13) and (14).
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>		
(16)	On overhead switch panel, place NO SMOKING switch to ON.	Low chime tone heard, all cabin speakers.
(17)	Place NO SMOKING switch to AUTO position; place landing gear lever to DOWN position.	Low chime tone heard, all cabin speakers.

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**WJE 401-404, 406-408, 411, 412, 414, 875-880 (Continued)**

**Table 219 (Continued)**

Operation		Desired Result			
(18)	On overhead switch panel, place FASTEN SEAT BELTS switch to ON.	Low chime tone heard, all cabin speakers.			
<b>WJE 881, 883, 886, 887, 892, 893</b>					
(16)	On overhead switch panel place NO SMOKING switch to ON.	Tone heard, all aircraft speakers.			
(17)	Place NO SMOKING switch to AUTO position; place landing gear lever to DOWN position.	Tone heard, all aircraft speakers.			
(18)	On overhead switch panel place FASTEN SEAT BELTS switch to ON.	Tone heard, all aircraft speakers.			
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
(19)	On aft EPC equipment panel, connect terminal X2 of slats extended relay (R2-325) to ground.	Test set-up.			
NOTE: Make sure that slats are in extend mode.					
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>					
(20)	Place FASTEN SEAT BELTS to AUTO; remove terminal X2 of slats extended relay from ground.	Low chime tone heard, all cabin speakers.			
<b>WJE 881, 883, 886, 887, 892, 893</b>					
(20)	Place FASTEN SEAT BELTS to AUTO; remove terminal X2 of slats extended relay from ground.	Tone heard, all aircraft speakers.			
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
(21)	Place FASTEN SEAT BELTS and NO SMOKING switches to OFF.	Test set-up.			
(22)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
	B1-366	PASSENGER WARNING SIGNS	Upper EPC	LIGHTS - LEFT AC BUS	K/23
<b>WJE 401-404, 406-408, 411, 412, 414, 881, 883</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	LEFT DC POWER	P/23
<b>WJE 875, 876, 878, 879</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
	B1-187	LANDING GEAR WARNING	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/26
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21

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WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)

**Table 219 (Continued)**

Operation		Desired Result			
<b>WJE 881, 883, 886, 887, 892, 893</b>					
(23)	On avionics compartment relay panel, connect terminal X2 of CABIN LOW PRESSURE relay to ground.				
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>					
(23)	On E/E compartment relay panel, connect terminal X2 of CABIN LOW PRESSURE relay to ground.				
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
(24)	Place FASTEN SEAT BELTS to AUTO; NO SMOKING switch to OFF.				
(25)	Close the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
<b>WJE 401-404, 406-408, 411, 412, 414, 881, 883</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	LEFT DC POWER	P/23
<b>WJE 875, 876, 878, 879</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>					
				High/Low (Bing/Bong) chime tone heard at at FWD, MID and AFT attendants speakers.	
<b>WJE 881, 883, 886, 887, 892, 893</b>					
				Tone heard at FWD, MID, and AFT attendant's speakers.	
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
(26)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
<b>WJE 401-404, 406-408, 411, 412, 414, 881, 883</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	LEFT DC POWER	P/23
<b>WJE 875, 876, 878, 879</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23

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WJE 875, 876, 878, 879 (Continued)

**Table 219 (Continued)**

Operation			Desired Result		
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(27)	Place FASTEN SEAT BELTS switch to OFF. NO SMOKING switch to AUTO				
(28)	Close the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
<b>WJE 401-404, 406-408, 411, 412, 414, 881, 883</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	LEFT DC POWER	P/23
<b>WJE 875, 876, 878, 879</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
<b>WJE 401-404, 406-408, 411, 412, 414, 875-880</b>					
			High/Low (Bing/Bong) chime tone heard at all FWD, MID and AFT attendants speakers.		
<b>WJE 881, 883, 886, 887, 892, 893</b>					
			Tone heard at FWD, MID and AFT attendant's speakers.		
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
(29)	Open the circuit breakers that follow:				
	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL
<b>WJE 401-404, 406-408, 411, 412, 414, 881, 883</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	LEFT DC POWER	P/23
<b>WJE 875, 876, 878, 879</b>					
	B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
	B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21
(30)	Disconnect terminal X2 from ground.				
(31)	Close the circuit breakers that follow:				

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WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893 (Continued)

**Table 219 (Continued)**

Operation		Desired Result			
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	
B1-366	PASSENGER WARNING SIGNS	Upper EPC	LIGHTS - LEFT AC BUS	K/23	
<b>WJE 401-404, 406-408, 411, 412, 414, 881, 883</b>					
B1-560	CABIN PRESSURE CHIME	Lower EPC	LEFT DC POWER	P/23	
<b>WJE 875, 876, 878, 879</b>					
B1-560	CABIN PRESSURE CHIME	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/23	
<b>WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893</b>					
B1-187	LANDING GEAR WARNING	Lower EPC	MISCELLANEOUS LEFT DC BUS	P/26	
B1-364	CABIN LOW PRESSURE WARNING	Lower EPC	DC AIR CONDITIONING & MISCELLANEOUS	W/21	
(32)	End of call test.				

**WJE ALL**

H. Sound Pressure Level Measurement

NOTE: The following measurements are to be performed after all preceding passenger address maintenance practices have been completed. Refer specifically to verification of PA amplifier outputs. (Paragraph 3.A.)

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

NOTE: On aircraft with external gain control switch installed; make sure that the switch is in the "MED" position.

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- (1) Verify sound level meter is calibrated.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (2) Verify both fuel shutoff switches are in OFF position.

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- (3) Place selector switch on sound level meter to BATT position. Meter should indicate in BATT range. Return switch to MEASURE position.
- (4) On random noise generator, place OUTPUT switch to SIG position; place PWR/PTT switch to ON position.
- (5) Select test voltmeter scale to measure 25 millivolts a.c.
- (6) Using 150-ohm shunt adapter cable, connect test voltmeter to random noise generator SIGNAL terminals.
- (7) Adjust SIGNAL ADJUST potentiometer on random noise generator to obtain 15(±2) millivolts as indicated on test voltmeter.

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**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891 (Continued)**

- (8) Place PWR/PTT switch on random noise generator to OFF.
- (9) Disconnect test voltmeter and 150-ohm shunt adapter cable from random noise generator.
- (10) Connect handset jack adapter cable to SIGNAL terminals of random noise generator.

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- (11) Connect PJ051B plug of handset adapter cable to handset jack. (Figure 203)

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (12) Connect audio oscillator to handset adapter cable.

**WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- (13) On random noise generator, verify OUTPUT switch in SIG position, and place PWR/PTT switch to ON position.

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- (14) Fit test adapter to sound level meter and verify distance between meter microphone and speaker panel is  $5/8$  ( $\pm 1/16$ ) inch (15.9 ( $\pm 1.6$ ) mm).
- (15) On sound level meter, place OFF-SLOW-FAST selector to SLOW position.
- (16) Gain access to convenient PA speaker that is driven by main output of PA amplifier (Figure 202). Using suitable clip-leads, connect test voltmeter across amplifier output, at primary tabs of speaker transformer.

**WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-877, 880, 881, 883, 884, 886, 887, 891-893 PRE MD80-23-091**

- (17) Verify test meter reads 3.5 ( $\pm 0.5$ ) volts a.c. Adjust output of random noise generator if necessary.

NOTE: This voltage must be maintained constant throughout this test.

**WJE 878, 879; WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-877, 880, 881, 883, 884, 886, 887, 891-893 POST MD80-23-091**

- (18) On aircraft retrofitted with Telephonics high impedance, transformerless speakers, verify test meter reads 1.5 ( $\pm 0.3$ ) VAC. Adjust output of random noise generator if necessary.

NOTE: This voltage must be maintained constant throughout this test.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (19) Adjust SIGNAL ADJUST potentiometer of audio oscillator to obtain 1.5 ( $\pm 0.5$ ) volts a.c. as indicated on test meter.

NOTE: This voltage must be maintained constant throughout this test.

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- (20) Perform functional test of all speakers connected to PA amplifier.

**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891**

NOTE: For speaker group symbols, Figure 202. For transformer taps and amplifier connections, PASSENGER ADDRESS AND ENTERTAINMENT - TROUBLE SHOOTING, PAGEBLOCK 23-30-00/101, Figure 102, 23-30-00-990-810.

**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893**

NOTE: For speaker group symbols, circuit card taps and amplifier connections Figure 202).

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- (a) Hold sound level meter adapter against each speaker panel and move across panel to obtain maximum meter reading. Make a note of reading for each speaker.

NOTE: Take readings after meter needle has stabilized and is no longer fluctuating. Change meter scales as required.

**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891**

- (b) Compute output for each of following speaker groups. Make a note of outputs.

**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891 PRE MD80-23-091**

**Table 220 TABLE I**

SPEAKER GROUP	SYMBOL	GROUP RANGE (db)
Left and Right Utility Panels	A	89
Left and Right Utility Panels	B	92
Left and Right Utility Panels	C	95
Left and Right Utility Panels	D	98
Lavatories - Aft	E	95
Lavatories - FWD	F	92
Attendant's Area - FWD	G	94
Galley - Aft	H	95
Attendant's Area - Aft	I	101
Galley - FWD	J	101
<u>NOTE:</u> All tolerances +4 -2 dB, transformer type speakers		

**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891 POST MD80-23-091**

**Table 221 TABLE I**

SPEAKER GROUP	SYMBOL	GROUP RANGE (db)
Left and Right Utility Panels	A	89
Left and Right Utility Panels	B	92
Left and Right Utility Panels	C	95
Left and Right Utility Panels	D	98
Lavatories - Aft	E	95
Lavatories - FWD	F	92
Attendant's Area - FWD	G	94
Aft Service Door (Galley)	H	94
Attendant's Area - Aft	I	98
Galley - FWD	J	98
Aft Service Door (Drop Ceiling)	K	98
Aft Drop Ceiling	L	98

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WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891 POST MD80-23-091 (Continued)

**Table 221 TABLE I (Continued)**

SPEAKER GROUP	SYMBOL	GROUP RANGE (db)
Aft Galley Drop Ceiling	M	98
Galley Aft	L	98
<u>NOTE:</u> All tolerances +4 -2 dB, for transformerless speakers.		

**Table 222 Table I**

SPEAKER GROUP	SYMBOL	TAP SETTING	GROUP RANGE (db)
Left and Right Utility Panels	A	1/4W	89
Left and Right Utility Panels	B	1/2W	92
Left and Right Utility Panels	C	1/W	95
Left and Right Utility Panels	D	2W	98
Lavatories - Aft	E	1W	95
Lavatories - Fwd	F	1/2W	92
Attendant's Area - Fwd	G	1W	94
Aft Service Door (Galley)	H	1W	94
Attendant's Area - Aft	I	2W	98
Galley - Fwd	J	2W	98
Aft Service Door (Drop Ceiling)	K	2W	98
Aft Drop Ceiling	L	2W	98
Aft Galley Drop Ceiling	M	2W	98
Galley - Aft	N	2W	98
<u>NOTE:</u> All tolerances +4 -2 dB; transformerless speakers. Attendant stations FWD, mid and aft have speakers on AUX output of PA amp.			

WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891 PRE MD80-23-091

**Table 223 Table I**

SPEAKER GROUP	SYMBOL	TAP SETTING	GROUP RANGE (db)
Left and Right Utility Panels	A	1/4W	89
Left and Right Utility Panels	B	1/2W	92
Left and Right Utility Panels	C	1W	95
Left and Right Utility Panels	D	2W	98
Lavatories - Aft	E	1W	95
Lavatories - FWD	F	1/2W	92

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891 PRE MD80-23-091 (Continued)

**Table 223 Table I (Continued)**

SPEAKER GROUP	SYMBOL	TAP SETTING	GROUP RANGE (db)
Attendant's Area - FWD	G	1W	94
Attendant's Area - Aft	I	2W	98
Galley - FWD	J	2W	98

**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893**

- (c) Measure output of one speaker in each group listed (Figure 202).

NOTE: Test all replacement speakers.

**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891**

- (d) Verify that output of each speaker within each group is within tolerances listed in Paragraph 3.H.(20)(b) and Figure 202).

**WJE 401-404, 406-408, 411, 412, 414, 875-881, 883, 886, 887, 892, 893**

- (e) Verify that output of each speaker within each group is within tolerances listed Figure 202).

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

- (f) On aircraft with the external gain control switch installed, perform the following:
- 1) Select the center position (MED) on the external gain control switch in the radio rack.
  - 2) Measure and record the sound pressure level at any Symbol A speaker for a level of 89 (±3) dB.
  - 3) Measure the sound pressure level at any other Symbol A speaker for a level of 89 (±3) dB.
  - 4) Select the left position (LOW) on the external gain control switch in the radio rack.
  - 5) Measure the sound pressure level at the same two Symbol A speakers for a level of 3 (±1) dB lower than the level recorded in Paragraph 3.H.(20)(f)2).
  - 6) Select the right position (HIGH) on the external gain control switch in the radio rack.
  - 7) Measure the sound pressure level at the same two Symbol A speakers for a level of 3 (±1) dB higher than the level recorded in Paragraph 3.H.(20)(f)2).
  - 8) Select the center position (MED) on the external gain control switch in the radio rack.

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (g) Check speakers testing out of tolerance as follows:
- 1) Verify correct circuit card taps are connected.
  - 2) If output measures low, exchange low speaker with nearest acceptable speaker and re-measure.
  - 3) If low reading follows speaker, replace faulty unit.
  - 4) If low reading remains at same speaker panel, replace panel.

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**WJE 405, 409, 410, 415-427, 429, 861-866, 868, 869, 871-874, 884, 891**

- (h) Check speakers having output outside +4 -2 db tolerance as follows:
- 1) Verify correct transformer taps are connected.
  - 2) If output measures low, exchange low transformer/speaker with nearest acceptable transformer/speaker and re-measure.
  - 3) If low reading follows transformer/speaker, replace faulty unit.
  - 4) If low reading remains at same speaker panel, replace panel.

**WJE ALL**

I. Supplement to Functional Test

NOTE: These tests are performed to verify that P.A. output levels are satisfactory from various flight crew input stations. Steps (3) and (4) test the P.A. system without the microphones. Steps (5) and (6) are end-to-end system test procedures from microphone to speaker output. Configuration Tables 1 through 3 contain recommended outputs for the P.A. system.

(1) Test equipment:

**Table 224**

Name and Number	Manufacturer
Voltmeter	
Sound level meter, type 2232 or equivalent	Bruel & Kjaer,
Test jig assembly for sound level meter	Figure 205
Random noise generator, model 543-1	Pacific Electro Dynamics,
Adapters for the random noise generator:	
Pedestal	PJ-051B
Boom microphone	PJ Type XLR-4 Deutsch 7 Pin
Hand microphone	PJ Type XLR-4 Bayonet 7 Pin

- (2) Test set up.
- (a) Adjust random noise generator AUDIO OUTPUT potentiometer to 100 dB SPL  $\pm$ 1dB using sound level meter.
  - (b) Adjust random noise generator SIGNAL ADJUST to output 100 mV RMS  $\pm$ 1 mV using voltmeter.
  - (c) Place RESET switch on sound level meter to AUTO position.
  - (d) Place FAST/SLOW switch on sound level meter to SLOW position.
  - (e) Place dB(A) switch on sound level meter to "70-130 dB(A)" position.
  - (f) Place test jig on sound level meter.
  - (g) Make sure that fuel levers are in OFF position.

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(h) If installed, make sure that the 3-position PA switch located in E/E compartment is in "MED" position.

(3) Hand microphone inputs.

NOTE: The following tests use the random noise generator electrical output. These tests eliminate the microphone or handset from the system.

- (a) Unplug hand microphone from captain's station jack.
- (b) Plug in applicable hand microphone adapter and connect wires to PTT and SIGNAL outputs of random noise generator.
- (c) Place OUTPUT switch on random noise generator to SIG position.
- (d) Place PWR/PTT switch on random noise generator to ON position.
- (e) Test sound level of a cabin speaker with sound level meter and make a note of the dB value.

ROW 3 \_\_\_\_\_ dB SPL

- (f) Repeat for first officer's hand microphone jack.

ROW 3 \_\_\_\_\_ dB SPL

(4) Boom microphone inputs.

- (a) Unplug boom microphone from captain's jack panel.
- (b) Plug in applicable boom microphone adapter and connect wires to PTT and SIGNAL outputs of the random noise generator.
- (c) Place OUTPUT switch on random noise generator to SIG position.
- (d) Place PWR/PTT switch on random noise generator to ON position.
- (e) Test sound level of a cabin speaker with sound level meter and record dB value.

ROW 3 \_\_\_\_\_ dB SPL

- (f) Repeat for first officer's boom microphone jack panel.

ROW 3 \_\_\_\_\_ dB SPL

(5) Pedestal handset.

NOTE: The following tests use the random noise generator acoustic output. These tests perform an end-to-end system test from the microphone or handset through to the speakers.

- (a) Place OUTPUT switch on random noise generator to SPKR position.
- (b) Place PWR/PTT switch on random noise generator to ON position.
- (c) Press and release PA pushbutton located on overhead switch panel.
- (d) Couple random noise generator speaker directly onto pedestal handset mouthpiece.
- (e) Press and hold down handset push-to-talk switch.
- (f) Test sound level of a cabin speaker with sound level meter and record dB value.

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ROW 3 \_\_\_\_\_ dB SPL

- (6) Hand microphone.
- (a) Select PA on captain's audio control panel.
  - (b) Place OUTPUT switch on random noise generator to SPKR position.
  - (c) Place PWR/PTT switch on random noise generator to ON position.
  - (d) Couple random noise generator speaker directly onto captain's hand microphone.
  - (e) Press and hold down hand microphone push-to-talk switch.
  - (f) Test sound level of a cabin speaker with sound level meter and record dB value.

ROW 3 \_\_\_\_\_ dB SPL

- (g) Repeat for first officer's hand microphone.

ROW 3 \_\_\_\_\_ dB SPL

- (7) Following are configuration tables which contain recommended P.A. System outputs. Match tables to equipment installed in the aircraft.

- No P.A. pre-amplifier.
- Electronic Switching Unit (ESU) without Mod. 2
- 3-position P.A. switch in "MED" position (1.5K resistor).
- Pedestal handset microphone gain control turned full CW (low).
- P.A. Amplifier: Collins Model 346D-2B or P.E.D. 255-8 adjusted per DAC drawing 7930732-511. (Vendor recommended setting)

NOTE: 7930732-511 created for fuselage 1810 & subs with above mentioned P.A. amplifiers.

**Table 225 Table 1**

STEPS	MICROPHONE	STATION	SPEAKER OUTPUT	TOLERANCE
(3) Electrical Input 100 mV ± 1 mV	Hand Mic	Captain	95 dB	* +5, -3 dB
		F/O	95 dB	* +5, -3 dB
(4)	Boom Mic	Captain	95 dB	* +5, -3 dB
		F/O	95 dB	* +5, -3 dB
(5) Acoustic Input 100 dB ± 1 dB	Handset	Pedestal	101 dB	+ 10 dB, -3 dB
(6)	Hand Mic	Captain F/O	82 dB	** +5, -3 dB
		F/O	82 dB	** +5, -3 dB
* All 4 outputs should be the same value (within 2 dB)				
** Both outputs within 2 dB				

- 240 OHM IN-LINE RESISTORS.
- P.A. pre-amplifier.
- Electronic Switching Unit (ESU) with Mod. 2.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

- Pedestal handset microphone gain control turned full CW (low).
- P.A. Amplifier: Collins Model 346D-2 or P.E.D. 255-8 adjusted per DAC drawing 7930732-507. (Vendor recommended setting)

**Table 226 Table 2**

STEPS	MICROPHONE	STATION	SPEAKER OUTPUT	TOLERANCE
(3) Electrical Input 100 mV ± 1 mV	Hand Mic	Captain	103 dB	* +5, -3 dB
		F/O	103 dB	* +5, -3 dB
(4)	Boom Mic	Captain	103 dB	* +5, -3 dB
		F/O	103 dB	* +5, -3 dB
(5) Acoustic Input 100 dB ± 1 dB	Handset	Pedestal	106 dB	+ 10 dB, -3 dB
(6)	Hand Mic	Captain F/O	100 dB	** +5, -3 dB
		F/O	100 dB	** +5, -3 dB
* All 4 outputs should be the same value (within 2 dB)				
** Both outputs within 2 dB				

- P.A. pre-amplifier.

NOTE: Applicable to Pre PASICS Aircraft (prior to fuselage 1500).

**Table 227 Table 3**

STEPS	MICROPHONE	STATION	SPEAKER OUTPUT	TOLERANCE
(3) Electrical Input 100 mV ± 1 mV	Hand Mic	Captain	100 dB	* +5, -5 dB
		F/O	100 dB	* +5, -5 dB
(4)	Boom Mic	Captain	100 dB	* +5, -5 dB
		F/O	100 dB	* +5, -5 dB
(5) Acoustic Input 100 dB ± 1 dB	Handset	Pedestal	100 dB	+ 10 dB, -3 dB
(6)	Hand Mic	Captain	90 dB	** + 10, - 10 dB
		F/O	90 dB	** + 10, - 10 dB
* All 4 outputs should be the same value (within 2 dB)				
** Both outputs within 2 dB				

**J. Test Completion**

- (1) Remove test equipment.
- (2) Return aircraft to required configuration.

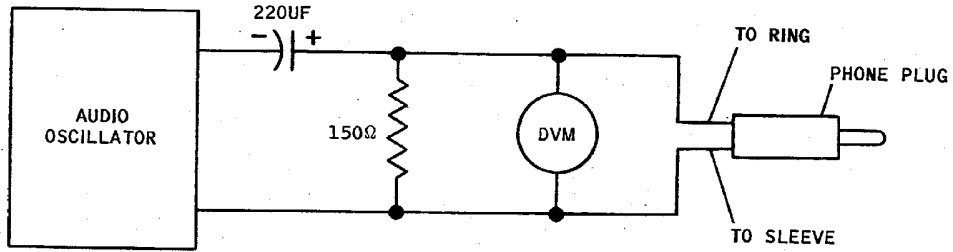
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

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BBB2-23-83

Passenger Address System -- Test Setup  
Figure 201/23-30-00-990-801

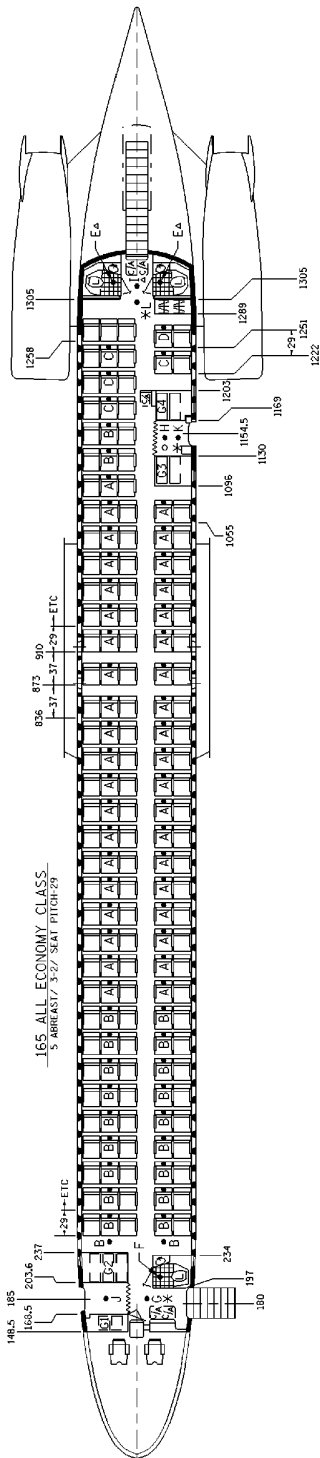
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WJE ALL

TP-80MM-WJE

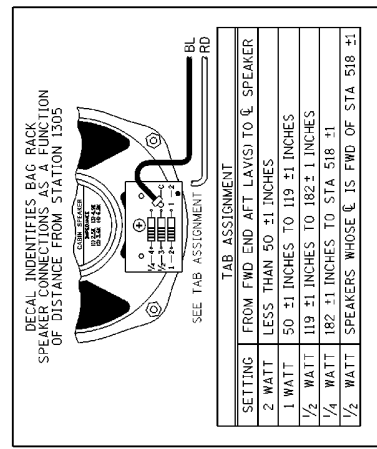
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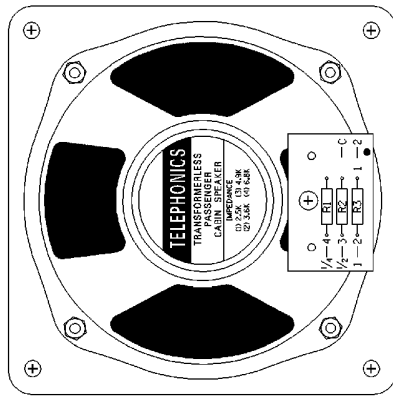
# MD-80 AIRCRAFT MAINTENANCE MANUAL



LOCATION DESIGNATION	SPEAKER QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	39	1/4W	89dB
LAVATORIES- AFT	22	1/2W	92dB
LAVATORIES- FWD	4	1W	95dB
ATTENDANT'S AREA- FWD	1	2W	98dB
ATTENDANT'S AREA- AFT	2	1W	95dB
GALLEY- FWD	1	1/2W	92dB
GALLEY- AFT	1	1W	94dB
AFT SERVICE DOOR	1	2W	98dB
AFT SERVICE DOOR DROP	1	2W	98dB
AFT SERVICE DOOR CEILING	1	2W	98dB
GALLEY- AFT	1	1W	95dB



SETTING	FROM FWD END AFT LAVS) TO	SPEAKER
2 WATT	LESS THAN 50 ±1 INCHES	
1/2 WATT	50 ±1 INCHES TO 119 ±1 INCHES	
1/4 WATT	119 ±1 INCHES TO 182 ±1 INCHES	
1/2 WATT	182 ±1 INCHES TO STA 518 ±1	
1/4 WATT	SPEAKERS WHOSE C IS FWD OF STA 518 ±1	



BBB2-23-560A

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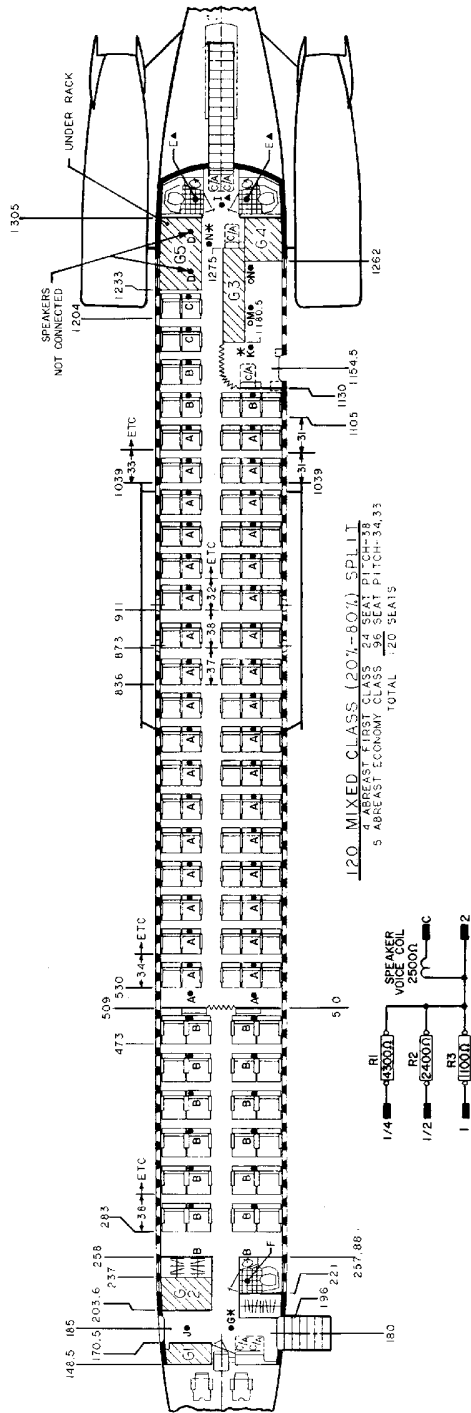
CAG(IIGDS)

Passenger Address Speakers Chart  
Figure 202/23-30-00-990-804 (Sheet 1 of 10)

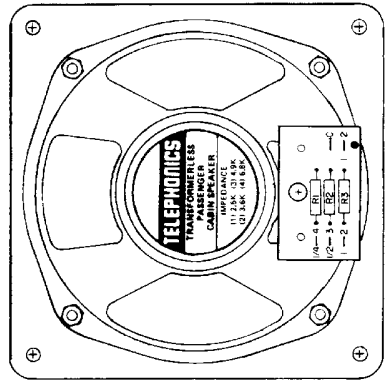
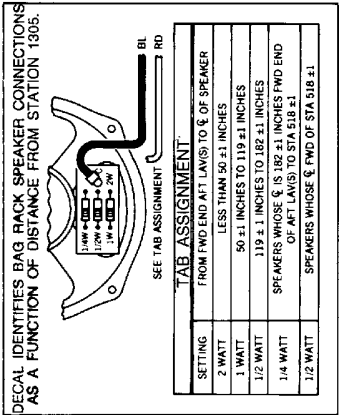
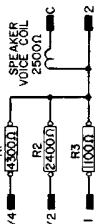
EFFECTIVITY  
WJE 406, 875-879

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



120 MIXED CLASS (207-807) SPLIT  
 4 ABREAST FIRST CLASS 24 SEAT PITCH-38  
 5 ABREAST ECONOMY CLASS 96 SEAT PITCH-34.33  
 TOTAL 120 SEATS



SPEAKER MUTING  
 ○ BY MID ATTENDANT  
 ▲ BY AFT ATTENDANT

LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT AND RIGHT UTILITY PANELS	A	36	1/4W	69
"	B	17	1/2W	92
"	C	2	1W	95
"	D	2	2W	96
LAVATORIES - AFT	E	2	1W	96
LAVATORY - FWD	F	1	1/2W	92
ATTENDANT'S AREA - FWD	G	1	1W	94
ATTENDANT'S AREA - AFT	I	1	2W	98
GALLEY - FWD	J	1	2W	98
AFT SVCE DOOR DROP CEILING	K	1	2W	98
AFT GALLEY	M	1	1W	95
AFT GALLEY	N	2	2W	98

DECAL IDENTIFIES BAG BACK SPEAKER CONNECTIONS AS A FUNCTION OF DISTANCE FROM STATION 1805.

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT. **MDC PROPRIETARY** BBB2-23-571

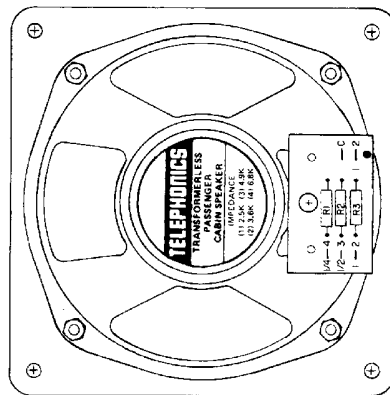
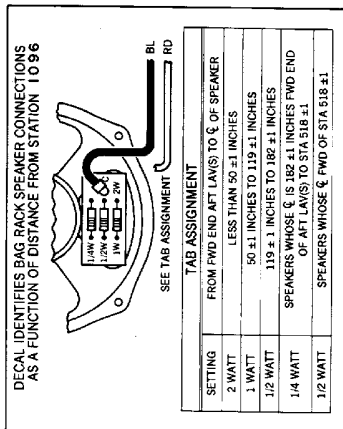
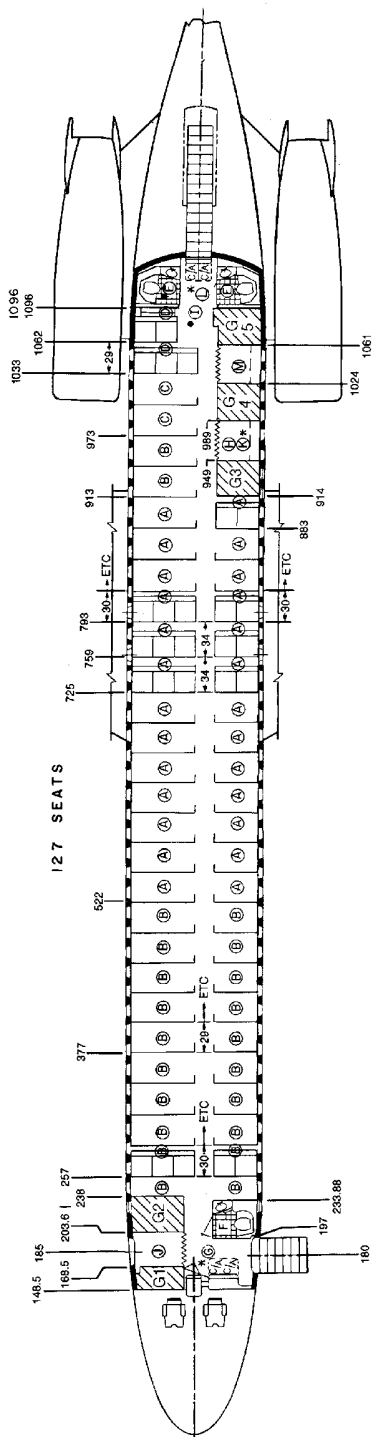
Passenger Address Speakers Chart  
 Figure 202/23-30-00-990-804 (Sheet 2 of 10)

EFFECTIVITY  
 WJE 401-404, 412, 414

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SPEAKER 23-31-05

LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING
LEFT AND RIGHT UTILITY PANELS	A	26	1/4W
"	B	22	1/2W
"	C	2	1W
"	D	2	2W
LAVATORIES-AFT	E	2	1W
LAVATORY-FWD	F	2	1/2W
ATTENDANT'S AREA-FWD	G	1	1W
AFT SERVICE DOOR	H	1	1W
ATTENDANT'S AREA-AFT	I	1	2W
GALLEY-FWD	J	1	2W
AFT SERVICE DOOR	K	1	2W
AFT PROP. CEILING	L	1	2W
GALLERY-AFT 64/65	M	1	2W

- \* AUX CHANNEL
- \* SPEAKER MUTING BY AFT ATTENDANT

**Passenger Address Speakers Chart**  
Figure 202/23-30-00-990-804 (Sheet 3 of 10)

EFFECTIVITY  
WJE 407, 408, 411, 880

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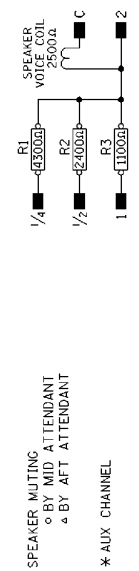
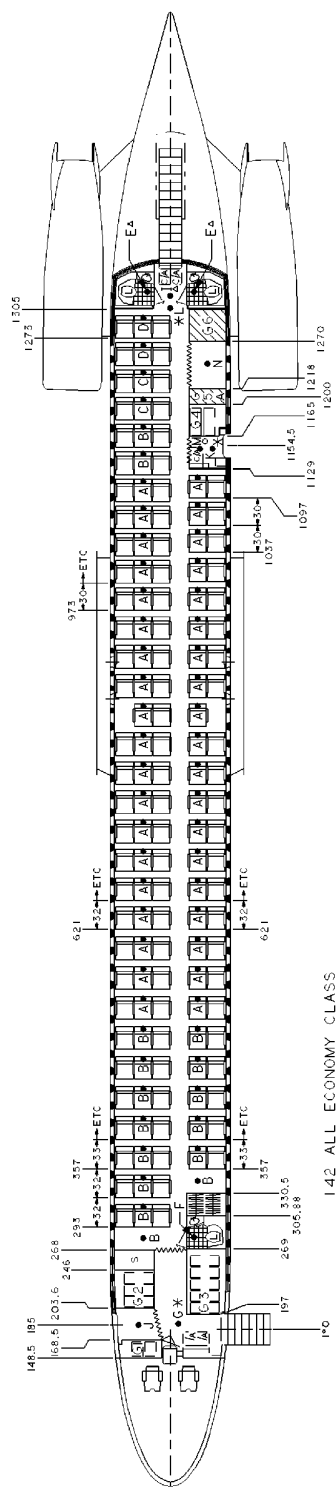
Config 1  
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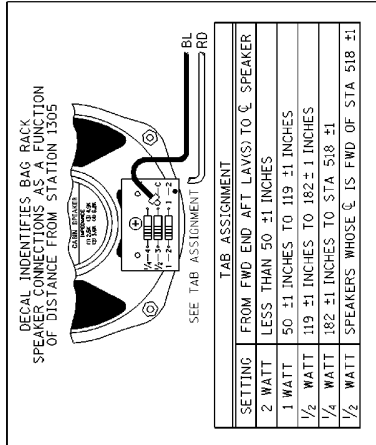
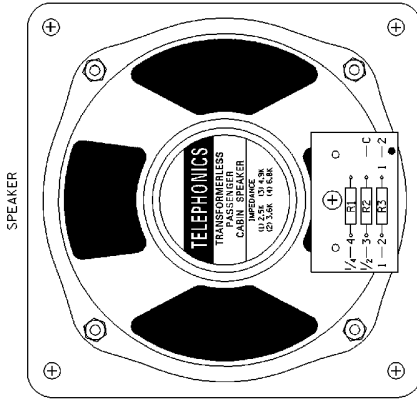
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BBB2-23-465

# MD-80 AIRCRAFT MAINTENANCE MANUAL



LOCATION DESIGNATION	SPEAKER QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	38	1/4W	89dB
•	16	1/2W	92dB
•	2	1W	95dB
•	2	2W	98dB
LAVATORIES- AFT	E	1W	95dB
LAVATORIES- FWD	F	1/2W	92dB
ATTENDANT'S AREA- FWD	G	1W	94dB
ATTENDANT'S AREA- AFT	I	2W	98dB
GALLEY- FWD	J	2W	98dB
GALLEY- AFT	K	2W	98dB
AFT SERVICE DOOR	L	2W	98dB
DROP CEILING	M	1W	95dB
CEILING	N	2W	98dB



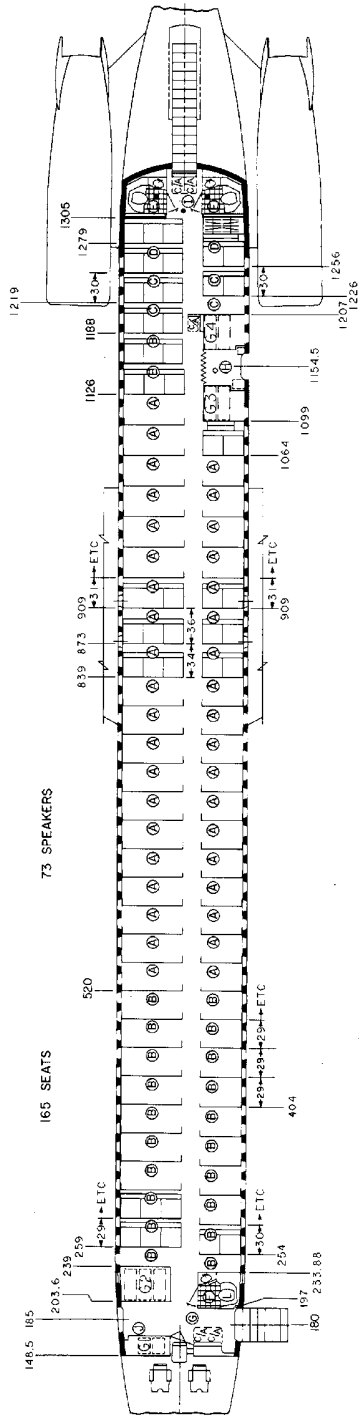
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CAG(I/GDS)

Passenger Address Speakers Chart  
Figure 202/23-30-00-990-804 (Sheet 4 of 10)

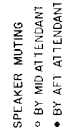
EFFECTIVITY  
WJE 407, 408, 411

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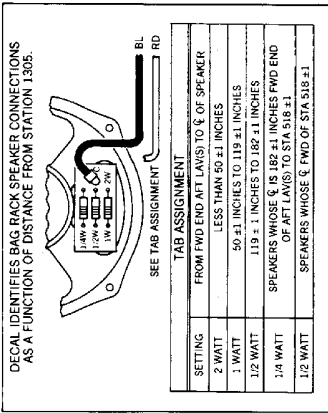
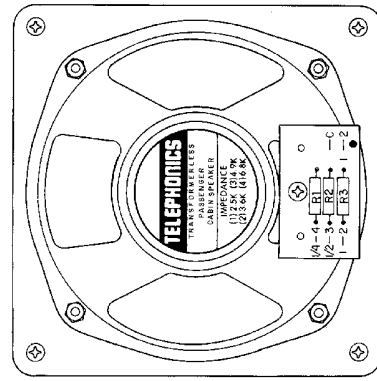
# MD-80 AIRCRAFT MAINTENANCE MANUAL



\* AUX CHANNEL



SPEAKER 23-31-05



LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	JB
LEFT AND RIGHT UTILITY PANELS	A	38	1/4W	89
"	B	22	1/2W	92
"	C	4	1W	95
"	D	2	2W	98
LAVATORIES - AFT	E	2	1W	95
LAVATORY - FWD	F	1	1W	95
ATTENDANT'S AREA - FWD	XG	1	1W	94
AFT SERVICE DOOR	9H	1	1W	96
ATTENDANT'S AREA - AFT	I	1	2W	96
GALLEY - FWD	J	1	2W	98

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
88B2-23-397

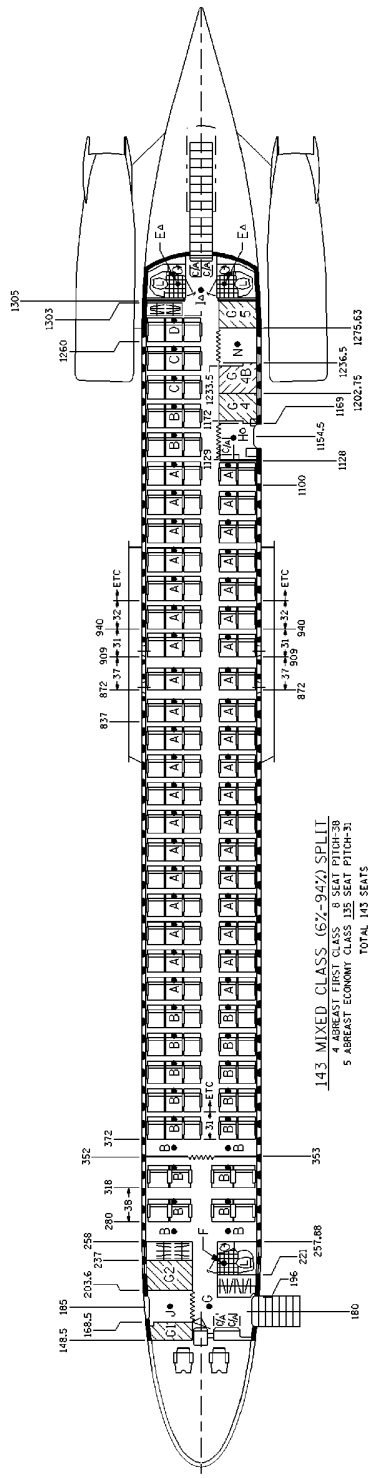
Passenger Address Speakers Chart  
Figure 202/23-30-00-990-804 (Sheet 5 of 10)

EFFECTIVITY  
WJE 892, 893

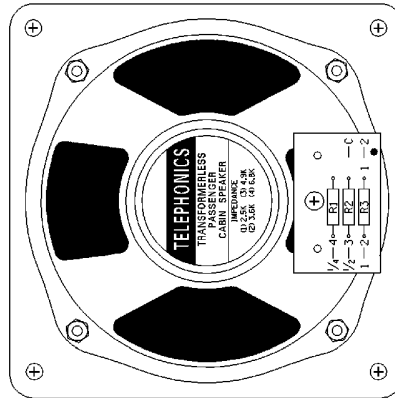
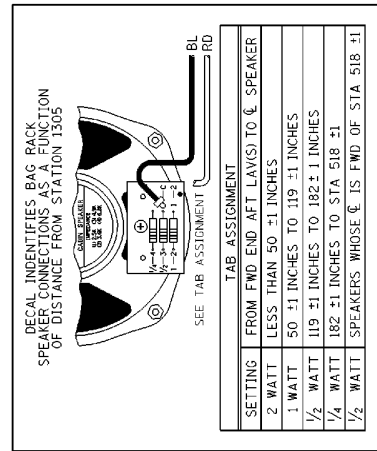
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LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING	dB
LEFT & RIGHT UTILITY PANELS	A	38	1/4W	89dB
•	B	20	1/2W	92dB
•	C	2	1W	95dB
•	D	1	2W	98dB
LAVATORIES- AFT	E	2	1W	98dB
LAVATORIES- FWD	F	1	1/2W	95dB
ATTENDANT AREA- FWD	G	1	1W	92dB
ATTENDANT AREA- AFT	H	1	1W	95dB
ATTENDANT AREA- AFT	I	1	2W	98dB
GALLEY- FWD	J	1	2W	98dB
GALLEY- AFT	N	1	2W	98dB



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MDC PROPRIETARY

CAG(IIGDS)

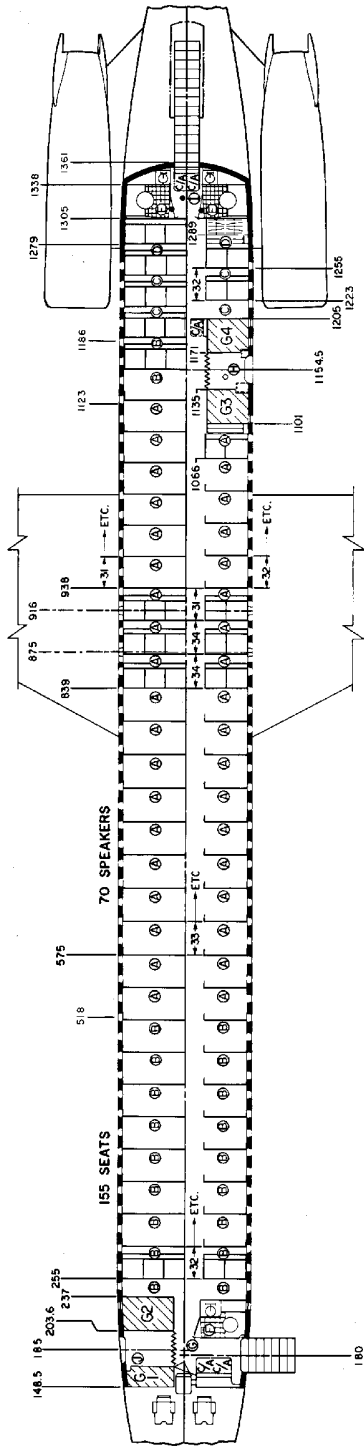
Passenger Address Speakers Chart  
 Figure 202/23-30-00-990-804 (Sheet 6 of 10)

EFFECTIVITY  
 WJE 886, 887

TP-80MM-WJE

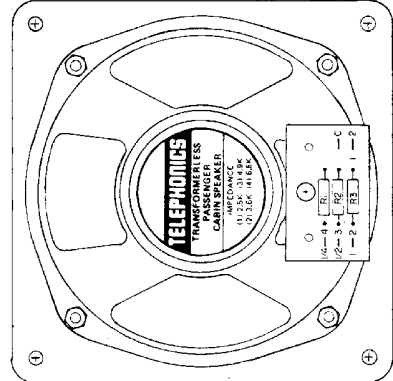
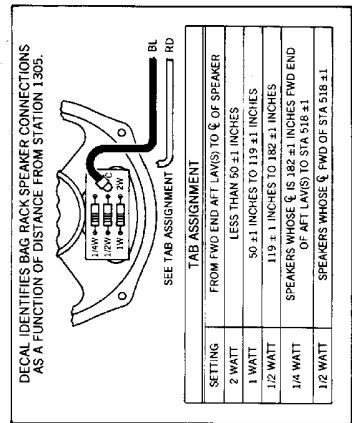


# MD-80 AIRCRAFT MAINTENANCE MANUAL



SPEAKER LEVELS INCREASED WITH FUEL LEVERS ON

- SPEAKER MUTED BY MID ATTENDANT
- SPEAKERS MUTED BY AFT ATTENDANT



LOCATION DESIGNATION	SPEAKER	QUANTITY	TAP SETTING
LEFT AND RIGHT UTILITY PANELS	A	37	1/4W
"	B	20	1/2W
"	C	4	1W
"	D	2	2W
LAVATOIRES - AFT	E	2	1W
LAVATORY - FWD	F	1	1/2W
ATTENDANT'S AREA - FWD	G	1	1W
AFT SERVICE DOOR	H	1	1W
ATTENDANT'S AREA - AFT	I	1	2W
GALLEY - FWD	J	1	2W

MDC PROPRIETARY

BBB2-23-327

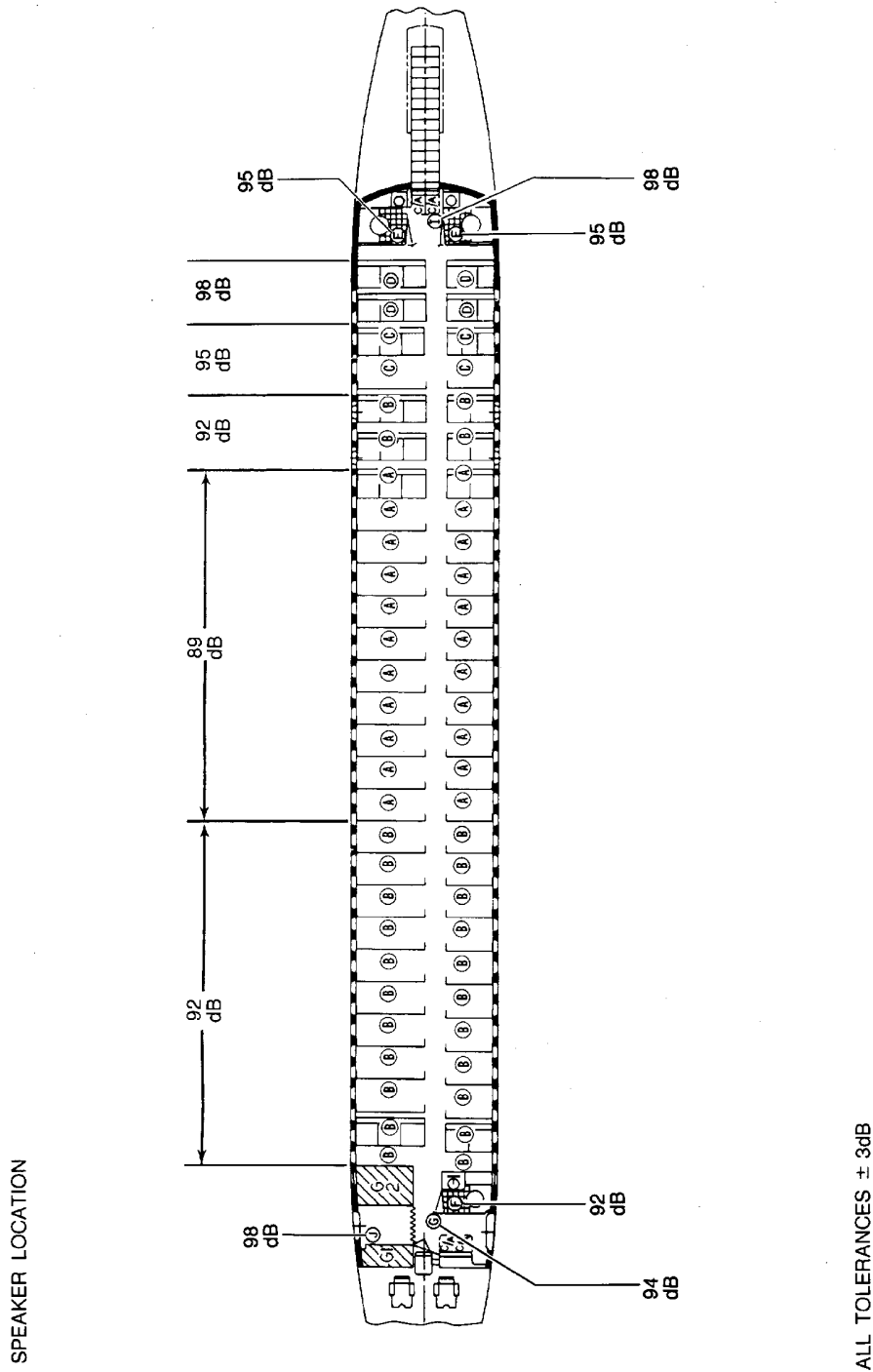
Passenger Address Speakers Chart  
Figure 202/23-30-00-990-804 (Sheet 7 of 10)

EFFECTIVITY  
WJE 881, 883

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BBB2-23-499



**Passenger Address Speakers Chart**  
Figure 202/23-30-00-990-804 (Sheet 8 of 10)

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

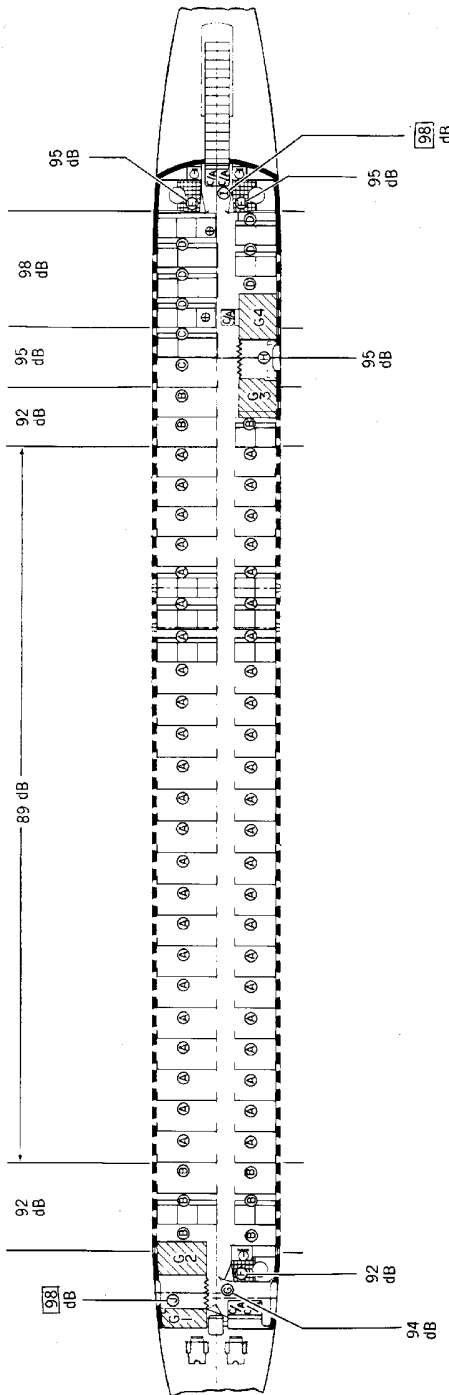
TP-80MM-WJE

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BBB2-23-338



ALL TOLERANCES +4, -2dB

**Passenger Address Speakers Chart**  
Figure 202/23-30-00-990-804 (Sheet 9 of 10)

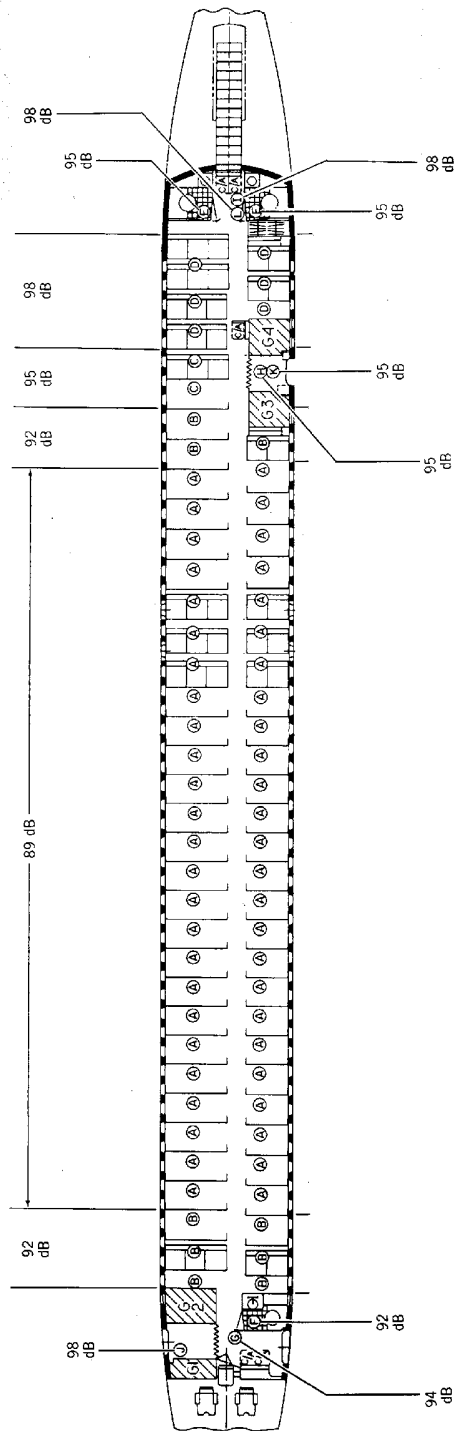
EFFECTIVITY  
WJE 405, 409, 410, 873, 874, 884

TP-80MM-WJE

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BBB2-23-340

ALL TOLERANCES +.4, -.2dB

**Passenger Address Speakers Chart**  
Figure 202/23-30-00-990-804 (Sheet 10 of 10)

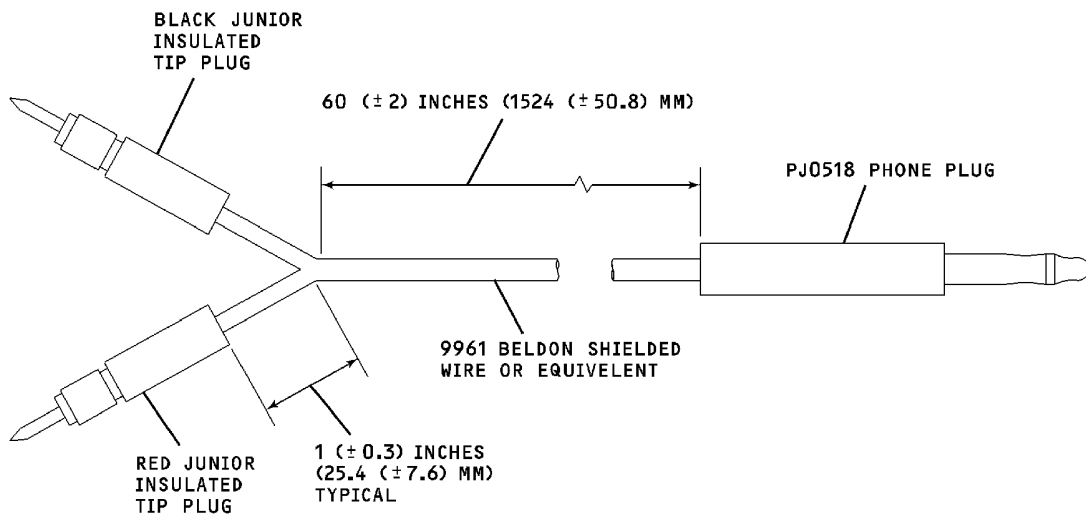
EFFECTIVITY  
WJE 416, 420, 422, 424-427, 429, 861, 862, 868, 891

TP-80MM-WJE

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CAG(IGDS)

BBB2-23-441

**Adapter Cable Assembly**  
**Figure 203/23-30-00-990-805**

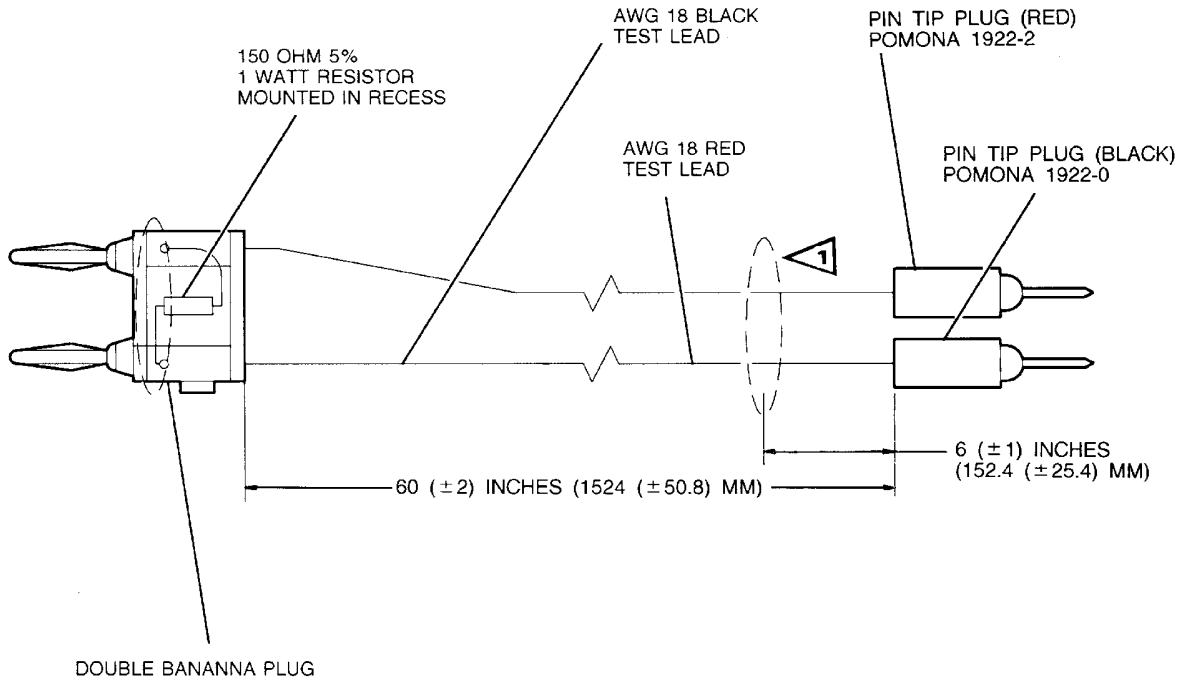
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

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**1** COVER WITH CLEAR IRVOLITE TUBING

CAG (IGDS)

BBB2-23-442

**Shunt Plug Assembly  
 Figure 204/23-30-00-990-806**

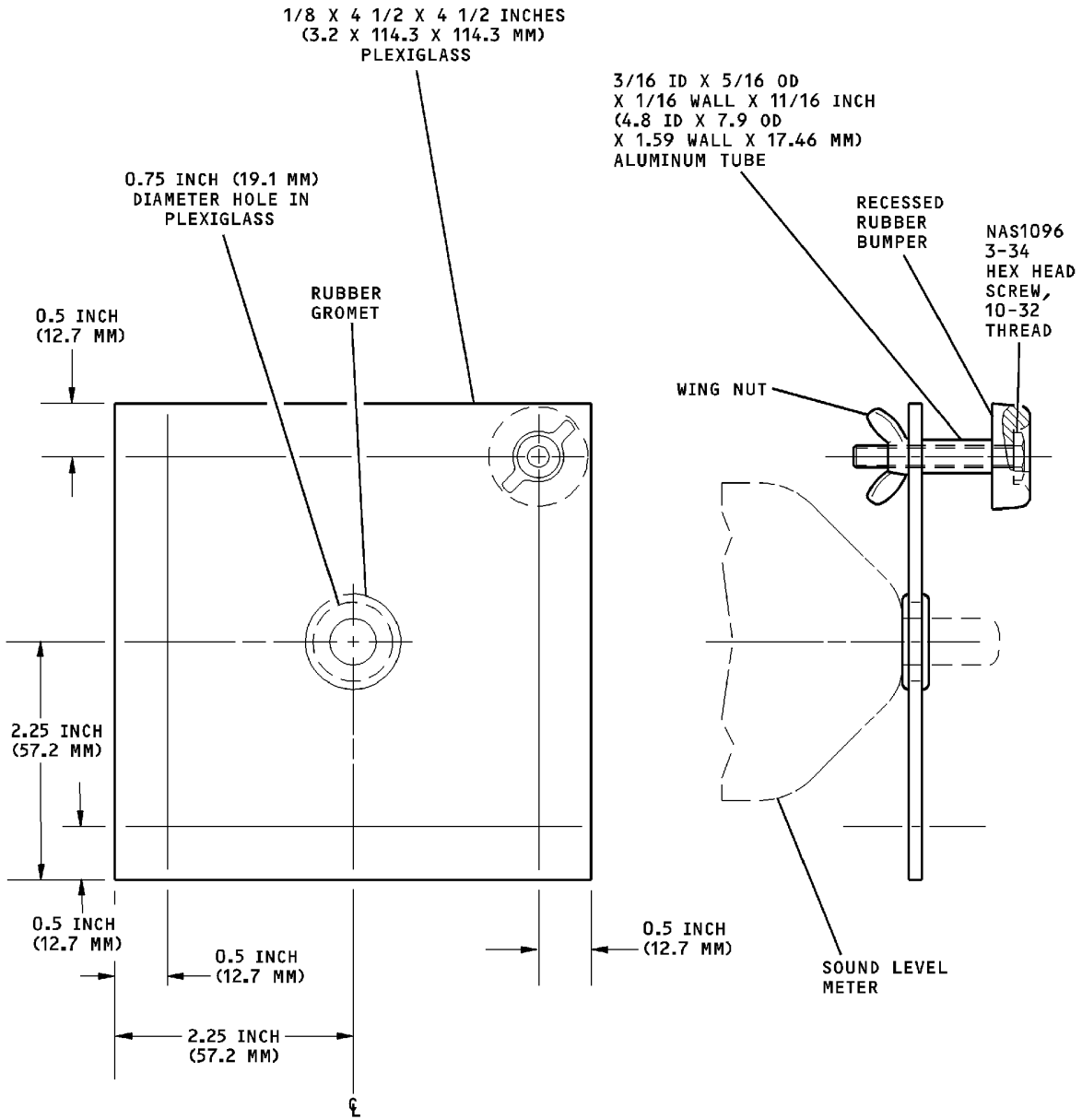
EFFECTIVITY  
 WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861,  
 862, 868, 873, 874, 884, 891

TP-80MM-WJE

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**NOTE:** DIMENSIONAL TOLERANCES  
UNLESS NOTED OTHERWISE:  
.X ± 0.030 (±0.762 MM)  
.XX ± 0.015 (±0.361 MM)

**NOTE:** SMOOTH ALL ROUGH EDGES AND  
SHARP CORNERS

CAG(IGDS)

BBB2-23-443

**Test Jig Assembly  
Figure 205/23-30-00-990-807**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

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**PASSENGER ADDRESS AND ENTERTAINMENT- ADJUSTMENT/TEST**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 23-30-00-710-801**

**2. Operational Check of the Passenger Address Priority System**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

<u>Reference</u>	<u>Title</u>
23-30-00 P/B 201 Config 1	PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES
24-40-00	EXTERNAL POWER

**B. Prepare for the Passenger Address Priority System Operational Check**

SUBTASK 23-30-00-861-001

(1) Make sure electrical power is available. (EXTERNAL POWER, SUBJECT 24-40-00)

**C. Passenger Address Priority System Operational Check**

SUBTASK 23-30-00-710-004

(1) Do the operational check. (PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1)

**D. Job Close-up**

SUBTASK 23-30-00-862-001

(1) Remove aircraft electrical power. (EXTERNAL POWER, SUBJECT 24-40-00)

SUBTASK 23-30-00-942-001

(2) Remove all the tools and equipment from the work area. Make sure the area is clean.

————— **END OF TASK** —————

**TASK 23-30-00-720-801**

**3. Functional Check of the Passenger Address System**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

<u>Reference</u>	<u>Title</u>
23-30-00 P/B 201 Config 1	PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES

**B. Passenger Address System Functional Check**

SUBTASK 23-30-00-720-001

(1) Do a functional check. (PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1)

————— **END OF TASK** —————

EFFECTIVITY WJE ALL
------------------------

**23-30-00**

TP-80MM-WJE



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER ADDRESS AMPLIFIER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation for the passenger address amplifier. The amplifier is located in the electrical/electronics compartment and is installed in the for-ward right radio rack.

### 2. Removal/Installation Passenger Address Amplifier

- A. Remove Amplifier

**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 DC BUS**

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### **WJE ALL**

- (2) Unscrew holddown nut at front end of PA amplifier mounting rack and swing nut down.  
 (3) Using handle on amplifier's front panel, gently pull amplifier straight out of rack.  
 (4) If amplifier is being replaced, carefully package defective unit into container that originally contained new unit and identify as being defective.

- B. Install Amplifier

**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 DC BUS**

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### **WJE ALL**

- (2) Make certain that mount and electrical connectors are free from chips, debris, and damage.  
 (3) Gently slide amplifier onto mounting rack, carefully aligning guide pins.  
 (4) When positive guide pin alignment is assured, carefully push amplifier straight into rack applying pressure until electrical connectors are firmly engaged.  
 (5) Raise holddown nut and mate with amplifier's holddown lug.  
 (6) Tighten holddown nut and verify that amplifier is held firmly in rack.

EFFECTIVITY  
WJE ALL

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- (7) Remove the safety tags and close these circuit breakers:

**OVERHEAD EMERGENCY DC BUS**

**Row   Col   Number   Name**

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A      8      B10-118      PASSENGER ADDRESS

**WJE 410**

A      9      B10-118      PASSENGER ADDRESS

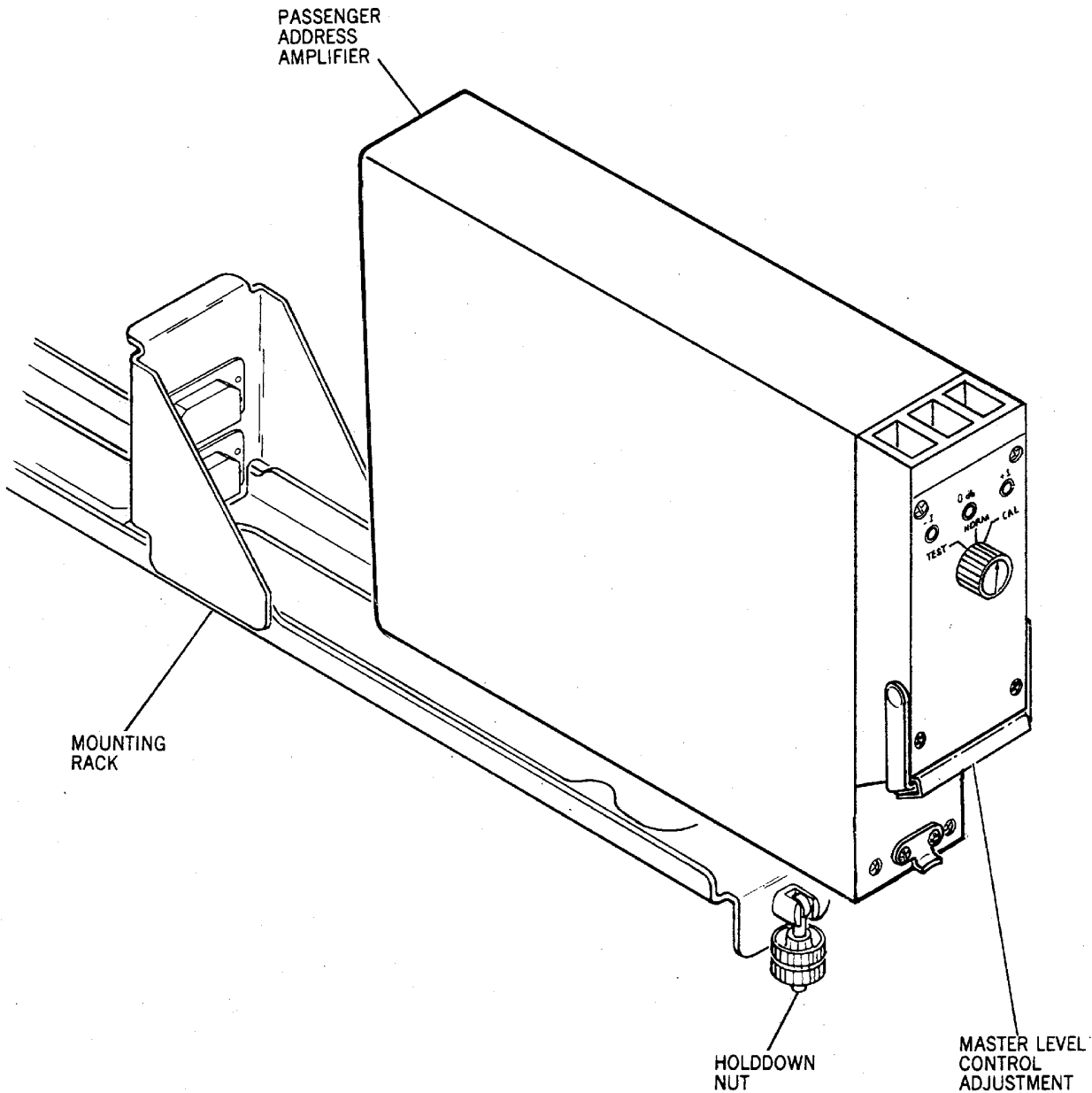
**WJE ALL**

EFFECTIVITY  
WJE ALL

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**23-30-01**

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LOCATION:  
ELECTRICAL/ELECTRONICS COMPARTMENT  
FORWARD RIGHT RADIO RACK

BBB2-23-17

**Passenger Address Amplifier -- Removal/Installation**  
Figure 201/23-30-01-990-801

EFFECTIVITY  
WJE ALL

**23-30-01**

TP-80MM-WJE

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### 3. Adjustment/Test Passenger Address Amplifier

#### A. Test Amplifier

- (1) At passenger address amplifier front panel, rotate and hold TEST/NORM/CAL switch to CAL position. Observe that "0 db" and "-1" indicator lights come on and "+1" light remains off.
- (2) Release switch to NORM position; indicator lights should go off.
- (3) Lift handset from its hanger at flight compartment pedestal and press PA ON button on overhead switch panel.
- (4) Press and hold handset push-to-talk button and speak into the handset at normal tone; speech should be heard at all cabin, cabin attendant, and lavatory speakers. The volume level should be high enough to be audible without engines running and be free from distortion.

Press and hold handset push-to-talk button and speak into the handset at normal tone; speech should be heard at all cabin, cabin attendant, and lavatory speakers.

The volume level should be high enough to be audible without engines running and be free from distortion.

NOTE: To check all functions of amplifier, refer to PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1.

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### P/A RELAY AND INTERLOCK PANEL - MAINTENANCE PRACTICES

#### 1. General

- A. The passenger address relay and interlock panel is located on the forward right radio rack in the electrical/electronics compartment. If a replacement unit is to be installed, a system test should be performed following installation.

#### 2. Removal/Installation Passenger Address Relay and Interlock Panel

- A. Remove 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:

##### **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

##### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 405, 409, 873, 874, 884</b>			
F	22	B10-117	PASSENGER ADDRESS

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

Remove Unit

- (2) Disconnect electrical connector.  
 (3) Remove screws from attaching angles and remove panel.

- B. Install 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:

##### **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

##### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 405, 409, 873, 874, 884</b>			
F	22	B10-117	PASSENGER ADDRESS

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- (2) Position panel on rack and secure with mounting screws.  
 Install Unit  
 (3) Position unit on rack and secure with mounting screws.  
 (4) Connect electrical connector.

**EFFECTIVITY**

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

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- (5) 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>
A	8	B10-118	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 405, 409, 873, 874, 884</b>			
F	22	B10-117	PASSENGER ADDRESS

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

### 3. Adjustment/Test Passenger Address Relay and Interlock Panel

#### A. Test Panel

- (1) On overhead panel, depress PA pushbutton switch.
- (2) On aft pedestal, remove handset from hanger and press push-to-talk switch. All speakers audio free of noise and distortion.
- (3) Place pedestal handset on hanger. Handset should revert to interphone.
- (4) At Fwd Cabin Attendant's station, remove handset from hanger and press PA switch.
- (5) Depress push-to-talk switch and speak into handset.
- (6) Forward entrance area speaker should mute and remaining speakers should be free of noise or distortion.
- (7) Replace handset on hanger. Handset should revert to interphone.
- (8) At Aft Cabin Attendant's station, remove handset from hanger and press PA switch.
- (9) Depress push-to-talk switch and speak into handset.
- (10) All speakers should be free of noise or distortion.
- (11) Replace handset on hanger. Handset should revert to interphone.
- (12) Return airplane to required configuration.

### 4. Adjustment/Test Passenger Address Relay and Interlock Panel

#### A. Test Panel

- (1) On overhead panel, depress PA pushbutton switch.
- (2) On aft pedestal, remove handset from hanger and press push-to-talk switch. All speakers audio free of noise and distortion.
- (3) Place pedestal handset on hanger. Handset should revert to interphone.
- (4) At Fwd Cabin Attendant's station, remove handset from hanger and press PA switch.
- (5) Depress push-to-talk switch and speak into handset.
- (6) Forward entrance area should mute and speech should be reproduced clearly, without noise or distribution in remaining cabin PA speakers.
- (7) Replace handset on hanger. Handset should revert to interphone.
- (8) At aft cabin attendant's station, remove handset from hanger and press and release PA switch.
- (9) Depress push-to-talk switch and speak into handset.
- (10) All speakers should be free of noise or distortion.
- (11) Replace handset on hanger. Handset should revert to interphone.

#### EFFECTIVITY

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

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- (12) Return aircraft to required configuration.

**EFFECTIVITY**

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862,  
868, 873, 874, 884, 891**

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## ELECTRONIC SWITCHING UNIT - MAINTENANCE PRACTICES

### 1. General

- A. The electronic switching unit is located on the forward right radio rack in the electrical/electronics compartment. If a replacement unit is to be installed, a system test should be performed following installation.

### 2. Removal/Installation Electronic Switching Unit

- A. Remove 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:

#### **OVERHEAD EMERGENCY DC BUS**

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

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### **WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### **UPPER EPC, LEFT RADIO AC BUS**

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

WJE 410, 877, 880, 886, 887, 892, 893

F	22	B10-117	PASSENGER ADDRESS
---	----	---------	-------------------

#### **UPPER EPC, RIGHT RADIO DC BUS**

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

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

G	8	B10-65	SERVICE INTERPHONE
---	---	--------	--------------------

- (2) Disconnect electrical connector.  
 (3) Remove screws from attaching angles and remove unit.

- B. Install 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) Make sure that these circuit breakers are open and have safety tags:

#### **OVERHEAD EMERGENCY DC BUS**

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

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### **WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### EFFECTIVITY

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893
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WJE 410 (Continued)

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 877, 880, 886, 887, 892, 893			
F	22	B10-117	PASSENGER ADDRESS

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893			
G	8	B10-65	SERVICE INTERPHONE

- (2) Position unit on rack and secure with mounting screws.
- (3) Connect electrical connector.
- (4) 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 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893			
A	8	B10-118	PASSENGER ADDRESS
WJE 410			
A	9	B10-118	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 410, 877, 880, 886, 887, 892, 893			
F	22	B10-117	PASSENGER ADDRESS

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893			
G	8	B10-65	SERVICE INTERPHONE

### 3. Adjustment/Test Electronic Switching Unit

#### A. Test Unit

- (1) In flight compartment, remove handset from hanger on pedestal. Momentarily press PA pushbutton on overhead panel. PA ON pushbutton should illuminate blue.
- (2) Push handset PTT switch while speaking into handset. Speech should be reproduced clearly, without noise or distortion in all cabin PA speakers.
- (3) Place pedestal handset on hanger. Handset should revert to interphone.
- (4) At fwd cabin attendant's station, remove handset from hanger and press and release PA pushbutton. PA LED should be illuminated.
- (5) Depress push-to-talk switch and speak into handset.
- (6) Forward entrance area should mute and speech should be reproduced clearly, without noise or distribution in remaining cabin PA speakers.

#### EFFECTIVITY

<p>WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</p>
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- (7) Replace handset on hanger. Handset should revert to interphone.
- (8) At aft cabin attendant's station, remove handset from hanger and press and release PA pushbutton. PA LED should be illuminated.
- (9) Depress push-to-talk switch and speak into handset.
- (10) Speech should be reproduced clearly, without noise or distortion in all cabin PA speakers.
- (11) Replace handset on hanger. Handset should revert to interphone.
- (12) Return airplane to required configuration.

**EFFECTIVITY**

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419,  
421, 423, 863-866, 869, 871, 872, 875-881, 883, 886,  
887, 892, 893**

**TP-80MM-WJE**

**23-30-02**

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PASSENGER ADDRESS SPEAKER - MAINTENANCE PRACTICES

### 1. General

- A. Two cabin speakers are installed at each seat row. Also, speakers are installed in the forward and aft lavatories, cabin attendant's ceiling, and forward galley.
- B. The cabin speakers are mounted on individual, hinged panels in the underside of the overhead stowage racks, left and right.
- C. Hinged attachments support the outboard side of each speaker panel. The attachments are fitted into an outboard slide track which extends along the length of the stowage rack.
- D. The inboard edge of the speaker panel is fitted in a channel and held in place when the outboard hinged edge is secured.

### 2. Removal/Installation Cabin Speakers

- A. Remove Cabin 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:

#### **OVERHEAD EMERGENCY DC BUS**

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

**WJE 401-405, 409, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

#### **UPPER EPC, LEFT RADIO AC BUS**

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

**WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

F	19	B10-120	PASSENGER MUSIC
---	----	---------	-----------------

**WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893**

F	22	B10-117	PASSENGER ADDRESS
---	----	---------	-------------------

#### **UPPER EPC, LEFT RADIO DC BUS**

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

**WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

G	19	B10-121	PASSENGER MUSIC
---	----	---------	-----------------

- (2) Open speaker panel fasteners and lower panel to full open position.
- (3) Remove speaker from panel by removing four hex nuts and washers from mounting studs. Once speaker is removed replace nuts and washers back onto studs to avoid misplacement.

- B. Install Cabin Speaker

#### EFFECTIVITY

<b>WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>
--

# 23-30-03

## 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:

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-405, 409, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	8	B10-118	PASSENGER ADDRESS
<b>WJE 410</b>			
A	9	B10-118	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
F	19	B10-120	PASSENGER MUSIC
<b>WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
G	19	B10-121	PASSENGER MUSIC

- (2) Install speaker on panel.
- (3) Connect electrical wiring to speaker. Refer to tab assignment placard located near speaker on speaker panel to ensure proper connection.
- (4) Close speaker panel, hold in place and secure outboard fasteners.
- (5) 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>
<b>WJE 401-405, 409, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	8	B10-118	PASSENGER ADDRESS
<b>WJE 410</b>			
A	9	B10-118	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
F	19	B10-120	PASSENGER MUSIC
<b>WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

#### EFFECTIVITY

**WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

# 23-30-03

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

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

WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893			
---	--	--	--

G	19	B10-121	PASSENGER MUSIC
---	----	---------	-----------------

#### C. Test Cabin Speaker

- (1) In flight compartment, remove handset from hanger on pedestal; momentarily press PA pushbutton on overhead panel. PA ON pushbutton should illuminate blue.
- (2) Press handset PTT switch while talking into the handset; speech should be reproduced clearly, without noise or distortion in cabin PA speaker being replaced.
- (3) Return handset to hanger

#### EFFECTIVITY

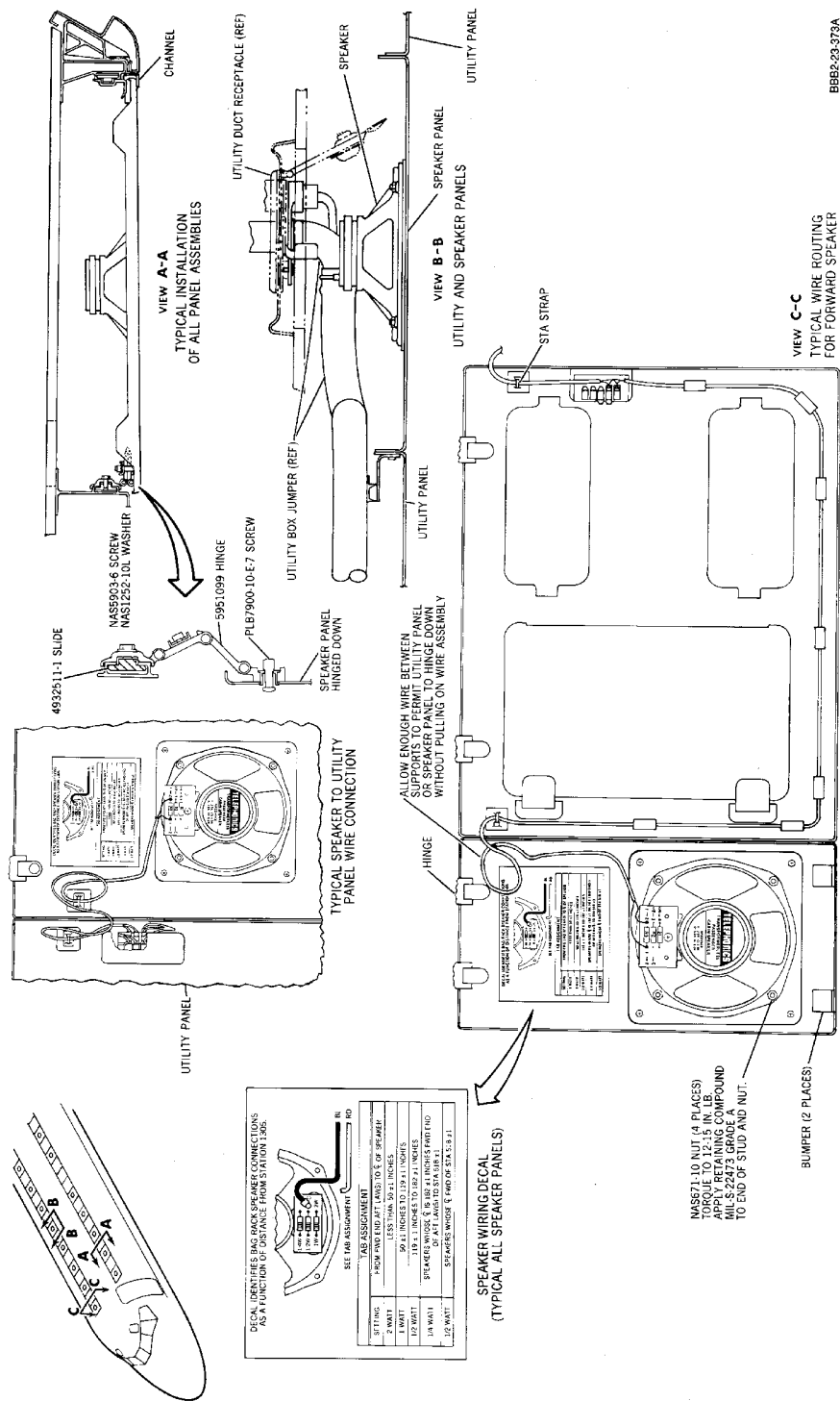
WJE 401-405, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893

# 23-30-03

TP-80MM-WJE

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



**Passenger Address Speaker -- Removal/Installation (Typical)**  
**Figure 201/23-30-03-990-801**

EFFECTIVITY  
WJE 401-405, 409, 410, 412, 414-427, 429, 861-866,  
868, 869, 871-881, 883, 884, 886, 887, 891-893

TP-80MM-WJE

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER ADDRESS MICROPHONE PREAMPLIFIER - MAINTENANCE PRACTICES

**1. General**

- A. This maintenance practice provides removal/installation for the passenger address microphone preamplifier. The preamplifier is located in the electrical/electronics compartment and is installed in the aft right radio rack.

**2. Removal/Installation Passenger Address Microphone Preamplifier**

- A. Remove Preamplifier

**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 DC BUS**

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE ALL**

- (2) Disconnect electrical connector from preamplifier.  
 (3) While supporting preamplifier, remove mounting screws from preamplifier mounting bracket.  
 (4) If preamplifier is being replaced, carefully package defective unit into container that originally contained new unit and identify as being defective.

- B. Install Preamplifier

**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 DC BUS**

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

**WJE ALL**

- (2) While supporting preamplifier, align four mounting holes and install mounting screws.  
 (3) Reconnect electrical connector to preamplifier.

EFFECTIVITY
WJE ALL

**23-30-04**

TP-80MM-WJE

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

- (4) Remove the safety tags and close these circuit breakers:

**OVERHEAD EMERGENCY DC BUS**

**Row   Col   Number   Name**

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A      8      B10-118      PASSENGER ADDRESS

**WJE 410**

A      9      B10-118      PASSENGER ADDRESS

**WJE ALL**

EFFECTIVITY  
WJE ALL

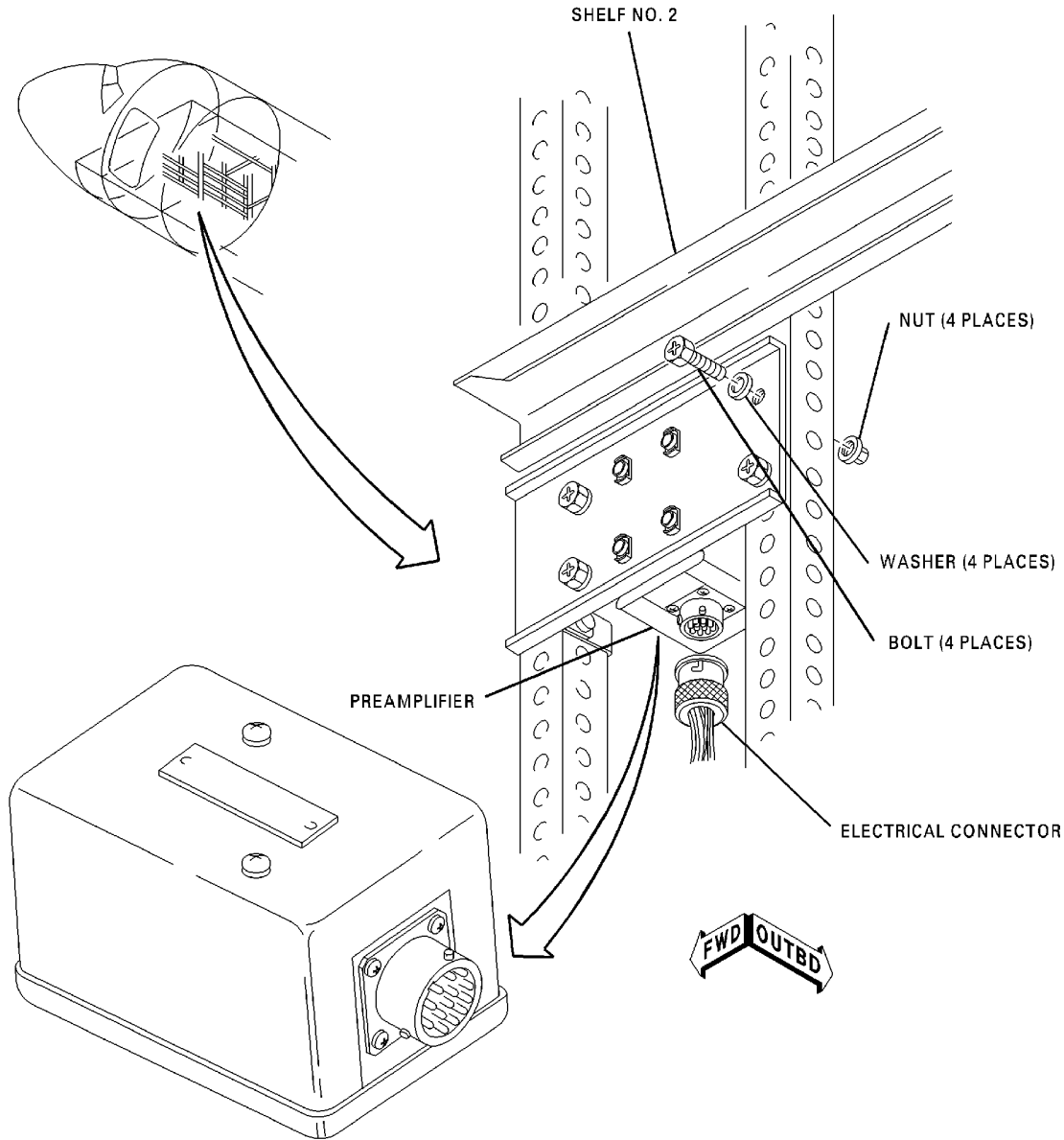
TP-80MM-WJE

**23-30-04**

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-23-205A

**Passenger Address Microphone Preamplifier -- Removal/Installation**  
**Figure 201/23-30-04-990-801**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 23-30-04

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Adjustment/Test Passenger Address Microphone Preamplifier

#### A. Test Preamplifier

- (1) At passenger address amplifier front panel, rotate TEST/NORM/CAL switch to NORM position.
- (2) Lift handset from its hanger at flight compartment pedestal and press PA ON button on overhead switch panel.
- (3) Press and hold handset push-to-talk button and speak into the handset at normal tone; speech should be heard at all cabin, cabin attendant, and lavatory speakers. The volume level should be high enough to be audible without engines running and be free from distortion.

NOTE: To check all functions of preamplifier, refer to PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1.

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**23-30-04**

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Feb 01/2015

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ELECTRONIC CHIME - MAINTENANCE PRACTICES

### 1. General

- A. These Maintenance Practices provide Removal/Installation and test procedures for the electronic chime.
- B. The electronic chime has an output level adjustment which may be adjusted for increased gain.
- C. The chime is located on the equipment panel of the forward right radio rack in the E/E compartment.

### 2. Removal/Installation Electronic Chime

#### A. Remove Chime

**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:

**LOWER EPC, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

- (2) Remove cover from equipment panel.
- (3) Disconnect electrical connector.
- (4) Remove screws from chime and remove chime.

#### B. Install Chime

**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:

**LOWER EPC, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

- (2) Position chime on support and secure with mounting screws.
- (3) Connect electrical connector.
- (4) Replace equipment panel cover.
- (5) 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	37	B1-8	CALL SYSTEM

### 3. Adjustment/Test Electronic Chime

#### A. Chime Test

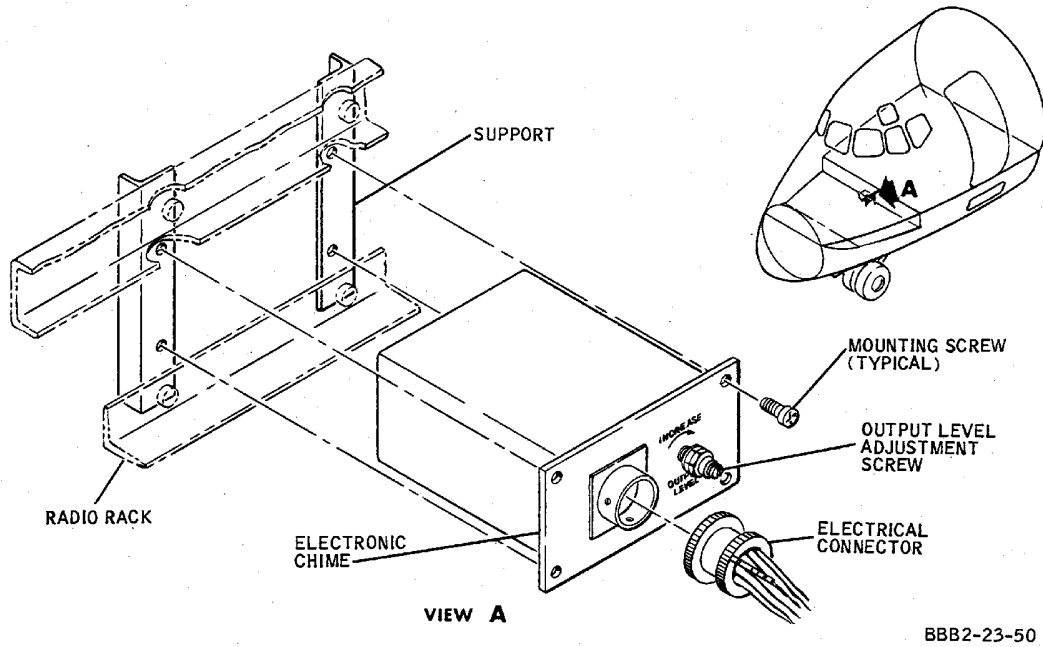
- (1) Press ATTENDANT CALL button on overhead switch panel and various locations throughout passenger compartment. Electronic chime tone should sound in all cBbin and lavatory speakers.
- (2) Tone should be audible throughout passenger compartment with engines running and doors closed.
- (3) If adjustment is required, adjust output level on front of chime until tone is audible.

EFFECTIVITY

WJE 405-411, 873, 874, 880, 881, 883, 884, 886, 887, 892, 893

**23-30-05**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



**Electronic Chime -- Removal/Installation**  
**Figure 201/23-30-05-990-801**

EFFECTIVITY  
WJE 405-411, 873, 874, 880, 881, 883, 884, 886, 887,  
892, 893

TP-80MM-WJE

## 23-30-05

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER MUSIC/RECORDED ANNOUNCEMENTS - DESCRIPTION AND OPERATION

#### 1. General

##### **WJE 401-404, 406-408, 411, 875-880**

- A. The recorded announcement system provides prerecorded messages and music for play through the passenger address system. The system consists of a 4 magazine tape reproducer and a remote announcement control panel. Typical recorded announcement programming consists of arrival and departure messages and required service information and music. An emergency announcement is also provided should a cabin pressure failure occur. Emergency announcement cannot be selected at announcement control panel.

##### **WJE 410**

- B. The passenger music system system provides prerecorded music for play through the passenger address system. The system consists of a tape reproducer and a remote volume control.

##### **WJE 401-404, 406-408, 410, 411, 875-880**

#### 2. Description and Operation

- A. Description

##### **WJE 401-404, 406-408, 411, 875-880**

- (1) The tape reproducer is located on the forward right radio rack in the electrical/electronic compartment. The magazines are accessible through an access door in the front of the reproducer and can be changed at the operator's option without removing the reproducer. Manual selection and initiation of tape play is enabled by a remote announcement control panel at the forward cabin attendant station.

##### **WJE 410**

- (2) The tape reproducer is located on the forward right radio rack in the electrical/electronic compartment. The tapes are accessible through an access door on the right hand side of the reproducer and can be changed at the operator's option. The boarding music reproducer consists of two identical tape transports, which are controlled by a microcomputer. Each tape transport drive is also electronically controlled. A pair of Philips-type cassette tapes are loaded in the boarding music reproducer. These two tapes are 4-channel tapes and played in one direction only. One of the tape pair contains the first half of four monaural programs, and the other the second half. Therefore, the boarding music reproducer contains four music channels and these channels are continuous, since the boarding music reproducer plays the first and second tapes alternately without any interruption between them.

##### **WJE 401-404, 406-408, 411, 875-880**

- (3) The announcement control panel provides the means to select and initiate or cancel operation of the recorded tapes. The panel is located at the forward cabin attendant station. Controls consist of pushbuttons to select both the magazine and its tape track for play, an announce (ANN), button to initiate operation, a CANCEL button, and WAIT lights to indicate tape programming status. An announcement directory, located on the face of the panel, indicates type of message or music recording on the tapes.

##### **WJE 401-404, 406-408, 410, 411, 875-880**

- B. Operation

EFFECTIVITY  
WJE 401-404, 406-408, 410, 411, 875-880

**23-32-00**

TP-80MM-WJE

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 401-404, 406-408, 411, 875-880

- (1) Operation of the tape reproducer is controlled at the announcement control panel. Selection of the recorded announcement to be played (other than background music) is accomplished by pressing first, one of three magazine select pushbuttons, A, B or C, then one of eight tape track select pushbuttons. Play is then initiated by pressing the ANN pushbutton. The WAIT light opposite the magazine select pushbutton will light and remain on until the track play is completed and the tape track recycles to the start position. If the CANCEL pushbutton is pressed at any time during play, the message or recording will stop. The WAIT light will remain on until the tape recycles. Any magazine not showing a WAIT light can be selected for play even if a WAIT light is displayed on another magazine. If A, B, or C magazine tapes are not selected, background music is automatically played from the fourth magazine.
- (2) An emergency announcement will automatically occur and the oxygen masks be released whenever cabin pressure fails or the PASS OXY MASK switch on the aft bulkhead (R.H.) of the flight compartment is set to EJECT. This announcement overrides any other recorded announcement or music in play at the time. It will continue to play until reset by removing all power from the airplane, opening all passenger oxygen release circuit breakers, or opening the recorded announce circuit breakers. The emergency announcement is overridden in the PA priority logic by PA announcements from the pilots or cabin attendants.

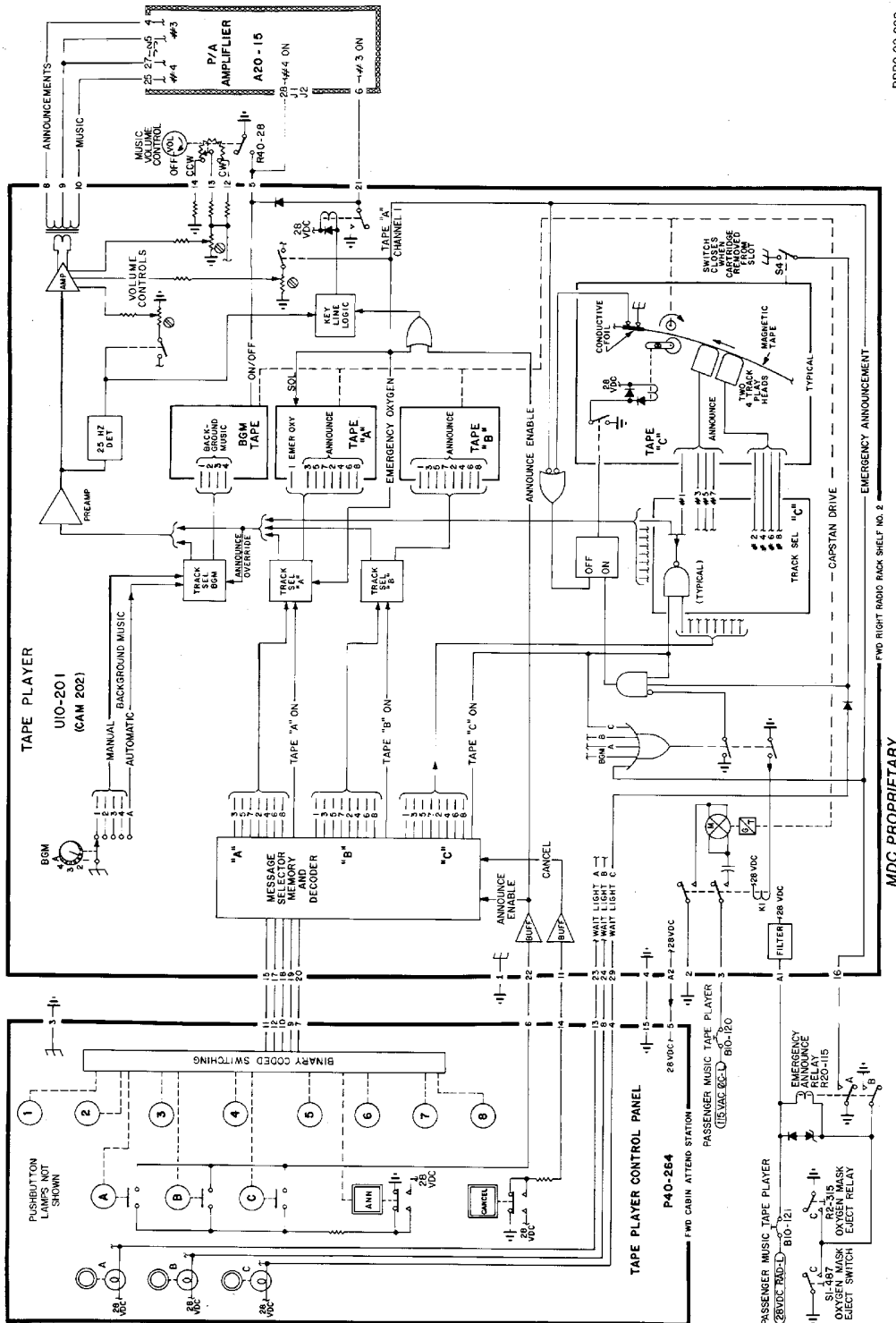
### WJE 410

- (3) The mode/channel select switch on the reproducer front panel is used to select one of the channels as the boarding music output. The same switch, when in the AUTO position, causes the boarding music reproducer to automatically select these channels one after another in an endless sequence from channel 1, 2, 3, 4, back to 1 and so on. Switching from one channel to the next occurs when the selected channel completes its playback cycle (one playback of first and second program halves). That is, in the AUTO mode, the four tracks on the tape pair are used as one continuous track.  
  
In addition to the mode/channel select switch, the front panel of the boarding music reproducer has an audio transducer with a two-port jack for connection of a pneumatic headset, with which the music on the currently selected channel can be monitored. Initiation of tape play is enabled by a remote volume control at the forward cabin attendant station.

### WJE 401-404, 406-408, 410, 411, 875-880

- (4) RSV-1 display, is the address of the announcement to be played back following the previously described "NEXT" position. It may have been keyed-into this position or promoted (moved-up) from RVS-2.

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-23-298

FWD RIGHT RADIO RACK SHELF NO. 2

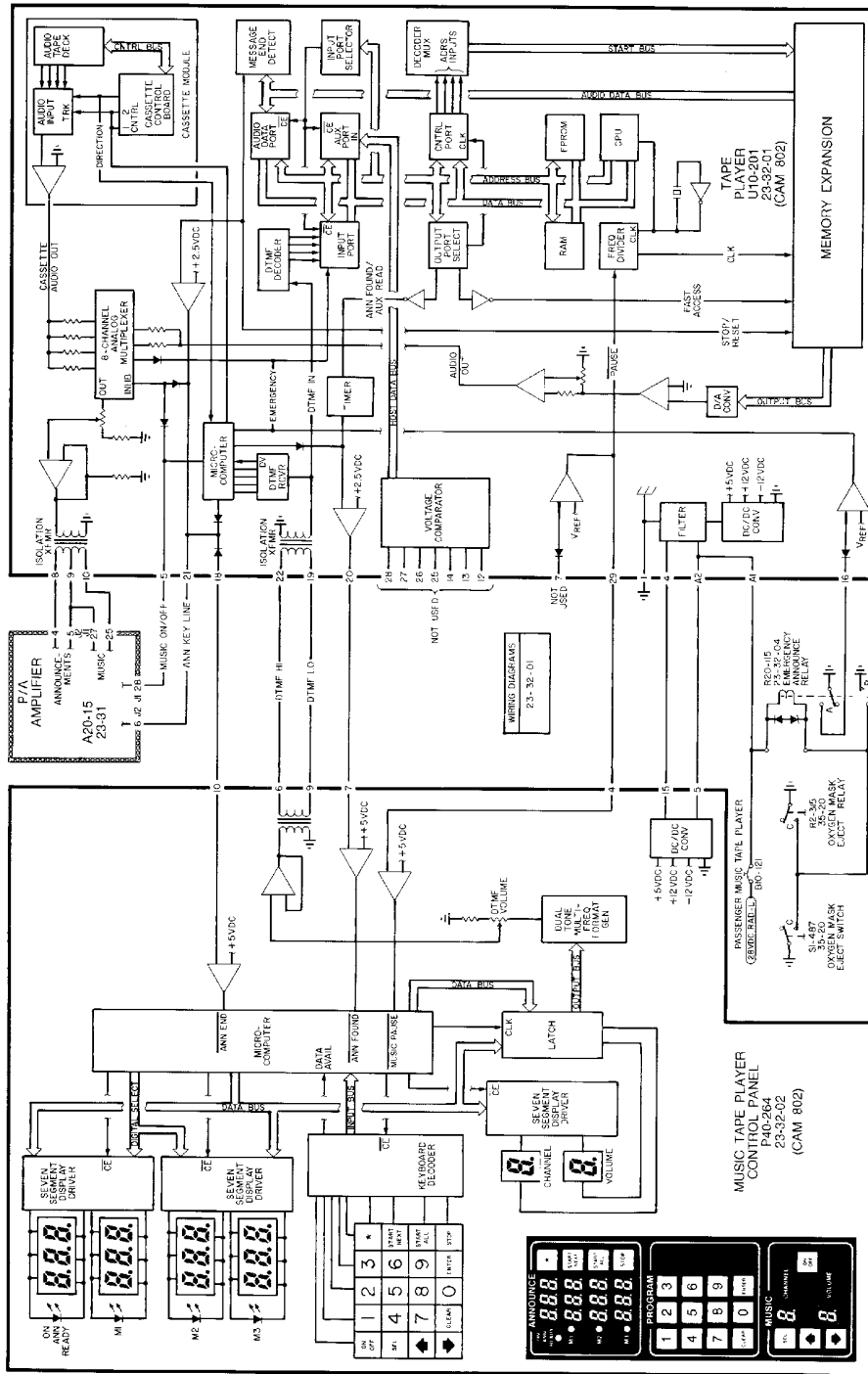
MDC PROPRIETARY

Background Music and Recorded Announcement Schematic  
Figure 1/23-32-00-990-801 (Sheet 1 of 2)

EFFECTIVITY  
WJE 406

23-32-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Background Music and Recorded Announcement Schematic  
Figure 1/23-32-00-990-801 (Sheet 2 of 2)

BBB2-23-577

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

EFFECTIVITY  
WJE 401-404, 875-879

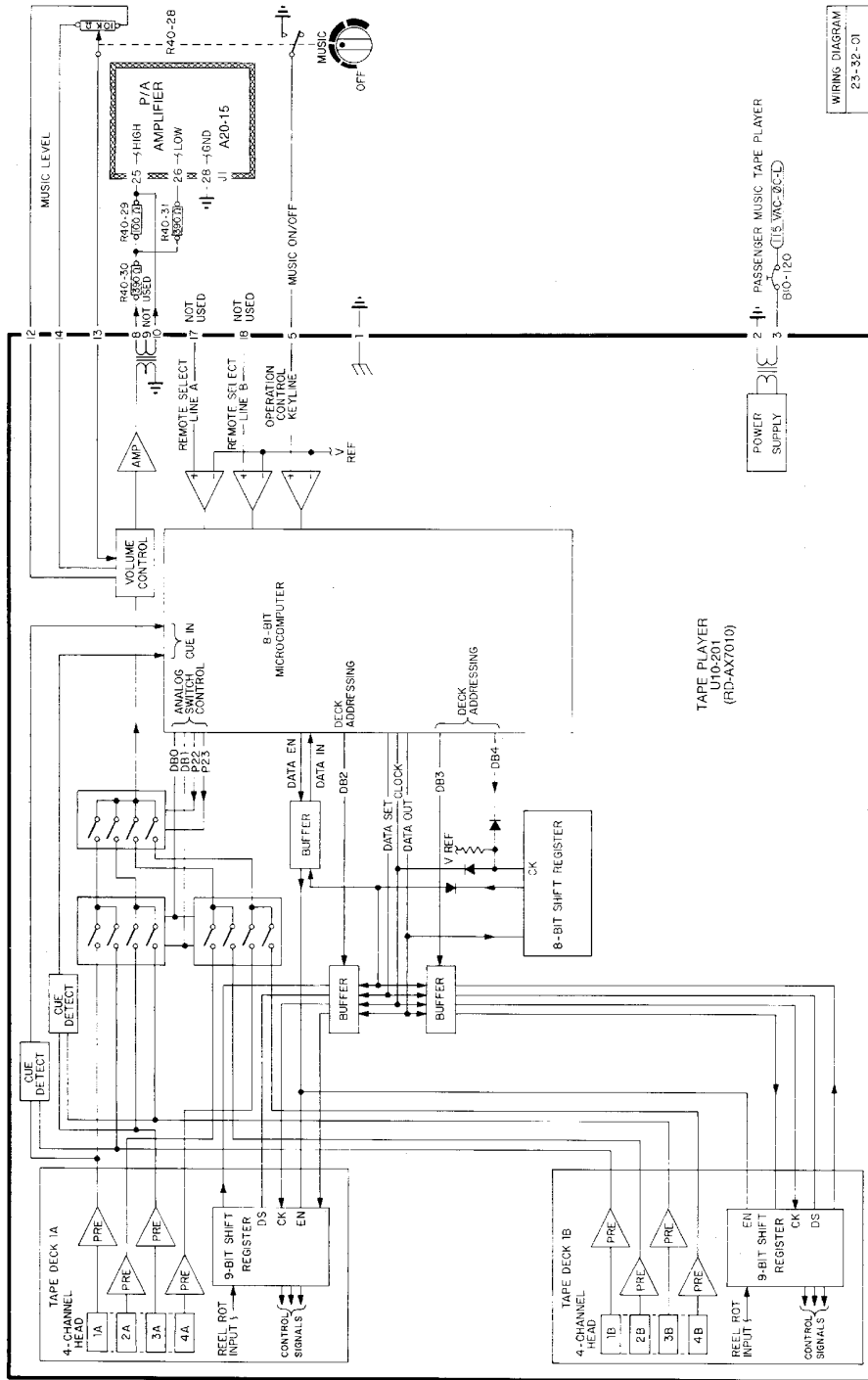
**23-32-00**

TP-80MM-WJE

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



WIRING DIAGRAM  
23-32-01

BBB2-23-410A

FORWARD RIGHT RADIO RACK-SHELF 2  
MDC PROPRIETARY

**Passenger Entertainment (Tape Player)**  
**Figure 2/23-32-00-990-804**

EFFECTIVITY  
WJE 410

**23-32-00**

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER MUSIC/RECORDED ANNOUNCEMENTS - MAINTENANCE PRACTICES

#### 1. General

##### WJE 875, 876, 878, 879

- A. Maintenance Practices provides a test for the recorded announcement system. The public address system must be operational for the test as recorded announcements are played through the public address system amplifier and speakers.

##### WJE 401-404, 406-408, 411, 877, 880

- B. These maintenance practices provide a test for the recorded announcement system. The passenger address system must be operational for the test as recorded announcements are played through that system.

##### WJE 410

- C. These maintenance practices provide a test for the boarding music system. The passenger address system must be operational for the test as the boarding music is played through that system.

##### WJE 875, 876, 878, 879

#### 2. Adjustment/Test

Step	Operation	Desired Result																				
A.	PRELIMINARY TEST SETUP (This test sets up the system to perform the necessary functional tests).																					
	(1) Open these circuit breakers and install safety tags.																					
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">REF DES</th> <th style="text-align: left;">CIRCUIT BREAKER</th> <th style="text-align: left;">LOCATION</th> <th style="text-align: left;">PANEL AREA</th> <th style="text-align: left;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-120</td> <td>PASSENGER MUSIC</td> <td>UPPER EPC</td> <td>LEFT RADIO AC BUS</td> <td>F/19</td> </tr> <tr> <td>B10-121</td> <td>PASSENGER MUSIC</td> <td>UPPER EPC</td> <td>LEFT RADIO DC BUS</td> <td>G/19</td> </tr> <tr> <td>B10-118</td> <td>PASSENGER ADDRESS</td> <td>OVERHEAD</td> <td>EMERGENCY DC BUS</td> <td>A/8</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-120	PASSENGER MUSIC	UPPER EPC	LEFT RADIO AC BUS	F/19	B10-121	PASSENGER MUSIC	UPPER EPC	LEFT RADIO DC BUS	G/19	B10-118	PASSENGER ADDRESS	OVERHEAD	EMERGENCY DC BUS	A/8	
REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL																		
B10-120	PASSENGER MUSIC	UPPER EPC	LEFT RADIO AC BUS	F/19																		
B10-121	PASSENGER MUSIC	UPPER EPC	LEFT RADIO DC BUS	G/19																		
B10-118	PASSENGER ADDRESS	OVERHEAD	EMERGENCY DC BUS	A/8																		
	(2) Install Boarding Music Tape into Tape Reproducer.	Tape Installed																				
	(3) Install Tape Reproducer in Radio Rack.	Tape Reproducer installed.																				
	(4) Remove the safety tags and close these circuit breakers:																					
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">REF DES</th> <th style="text-align: left;">CIRCUIT BREAKER</th> <th style="text-align: left;">LOCATION</th> <th style="text-align: left;">PANEL AREA</th> <th style="text-align: left;">ROW/COL</th> </tr> </thead> <tbody> <tr> <td>B10-120</td> <td>PASSENGER MUSIC</td> <td>UPPER EPC</td> <td>LEFT RADIO AC BUS</td> <td>F/19</td> </tr> <tr> <td>B10-121</td> <td>PASSENGER MUSIC</td> <td>UPPER EPC</td> <td>LEFT RADIO DC BUS</td> <td>G/19</td> </tr> <tr> <td>B10-118</td> <td>PASSENGER ADDRESS</td> <td>OVERHEAD</td> <td>EMERGENCY DC BUS</td> <td>A/8</td> </tr> </tbody> </table>	REF DES	CIRCUIT BREAKER	LOCATION	PANEL AREA	ROW/COL	B10-120	PASSENGER MUSIC	UPPER EPC	LEFT RADIO AC BUS	F/19	B10-121	PASSENGER MUSIC	UPPER EPC	LEFT RADIO DC BUS	G/19	B10-118	PASSENGER ADDRESS	OVERHEAD	EMERGENCY DC BUS	A/8	
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B10-121	PASSENGER MUSIC	UPPER EPC	LEFT RADIO DC BUS	G/19																		
B10-118	PASSENGER ADDRESS	OVERHEAD	EMERGENCY DC BUS	A/8																		
B	BOARDING MUSIC TEST (This test is performed to insure that wiring between Attendant Control Panel, Prerecorded Announcement Machine, and P.A. Amp is correct).																					

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 875, 876, 878, 879 (Continued)**

(Continued)

Step	Operation	Desired Result
(1)	Press On-Off button in music area of Attendant Control Panel (ACP) (located at forward Attendant Station).	"3" illuminates next to "Volume" label. Boarding Music is heard on cabin speakers.
(2)	Verify that volume increases and decreases as up and down arrows are used. Up will always increase volume level. Adjust for comfortable listening level.	Audio Level increases and decreases appropriately and adjusted.
(3)	Remove Handset from Forward Attendant's Station and push P.A. Button on face of handset. Verify that P.A. button light is illuminated, and that audio tracks or boarding music are no longer heard on cabin speakers.	Handset removed, P.A. button pushed and illuminated. Audio no longer heard.
(4)	While holding Handset push- to-talk switch speak into handset microphone. Verify that speech is heard on cabin speakers.	Speech heard on cabin speakers.
(5)	Replace handset to it's cradle and verify that audio tracks or boarding music resumes playing.	Handset replaced audio resumes.
(6)	Turn Off boarding music.	Boarding Music Stops.
C.	PRERECORDED ANNOUNCEMENT TEST (This test is performed to insure that wiring between Attendant Control Panel, Prerecorded Announcement Machine (PRAM), and channel 3 of P.A. Amp is correct.	
(1)	Press "Enter" button on Attendant Control Panel until M1 light is illuminated. Then press 227 "Enter".	227 is illuminated next to M1 under announce section.
(2)	Press "START NEXT" button on ACP to advance "227" to "On Answer Ready".	"227" moves from M1 and an audio message is heard over P.A. System which indicates PRAM has tested correctly.
<b>NOTE:</b> The audio message will indicate if Prerecorded Announce Machine has passed or failed it's BITE self test.		
D.	DECOMPRESSION ANNOUNCEMENT TEST (This test is performed to insure that wiring between Decompression Relay and PRAM is correct. This section also tests Priority override of the P.A. System).	
(1)	Remove wire RZ422J24 from Mod Block S30-113 (STA 110) pin 32, and apply ground to wire. This will simulate Decompression for this system. Verify that decompression announcement (announcement or test tone) is heard throughout cabin.	Decompression announcement or test tone heard throughout cabin.
<b>NOTE:</b> Decompression Announcement may repeat several times. Additionally, decompression announcement may have to be recycled by removing and reapplying ground wire in order to complete following P.A. priority tests.		
(2)	Remove handset from forward attendant station, press P.A. button on handset, depress and hold push-to-talk switch while speaking into handset. Verify that Decompression Announcement stops and that handset audio is heard throughout cabin.	Decompression Announcement stops, handset audio heard.
(3)	Return handset to cradle. Verify that Decompression Announcement resumes.	Decompression Announcement Resumes.
(4)	Remove Aft Pedestal Handset from its hanger, press P.A. button in overhead switch panel, and speak into handset while holding down push-to talk switch.	Decompression Announcement stops, handset audio heard throughout cabin.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 875, 876, 878, 879 (Continued)

(Continued)

Step	Operation	Desired Result
(5)	Return Handset to its cradle. Handset in Cradle, Verify that Decompression Announcement Resumes.	Decompression Announcement Resumes.
(6)	Return wire RZ422J24 to Mod Block S30-113, pin 32.	Wire returned.
(7)	Return aircraft to required configuration.	

WJE 401-404, 406-408, 411, 877, 880

### 3. Adjustment/Test

#### A. Test

- (1) On forward attendant panel, rotate MUSIC/OFF control clockwise and then counter-clockwise. Check for increasing and decreasing volume range. Set control for a comfortable level of background music (A, B, and C WAIT lights should not be lighted).
- (2) On the announcement control panel, located near the forward attendant panel, press magazine select pushbutton "A", any track select pushbutton numbered one through eight, and the ANN (announce) pushbutton. WAIT light opposite pushbutton "A" and selected track pushbutton light should come on and recorded announcement be heard over passenger address system.

NOTE: Emergency announcement is normally recorded on track 1 of tape magazine A. It cannot be selected or cancelled at the announcement control panel.

- (3) Press CANCEL pushbutton. Announcement should cease and both WAIT and track pushbutton lights remain on until track has recycled to start.

NOTE: If announcement tape track is permitted to run to completion, track will automatically recycle to start, at which time WAIT and track pushbutton lights go out.

- (4) Repeat Paragraph 3.A.(2) and Paragraph 3.A.(3) for magazines B and C.

#### B. Test Emergency Announce

NOTE: The emergency announcement is activated manually by placing the PASS OXY MASK switch in EJECT position, or automatically by the passenger oxygen release circuit. To prevent oxygen masks from deploying during test, mask release circuits must be isolated by opening circuit breakers.

**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, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	32	B1-868	PASSENGER OXYGEN CONTROL

#### **LOWER EPC, MISCELLANEOUS RIGHT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	32	B1-869	PASSENGER OXYGEN CONTROL ALTERNATE

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

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### UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	34	B1-870	PASSENGER OXYGEN RELEASE

### UPPER EPC, R AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	34	B1-871	ALTERNATE PASSENGER OXYGEN RELEASE

- (2) Place PASS OXY MASK switch on aft bulkhead of flight compartment to EJECT position. Emergency announcement should be heard. (Background music ceases.)
- (3) Prior to conclusion of emergency announcement:
  - (a) Remove handset from its hanger at forward attendant's station.
  - (b) Press ANNOUNCE pushbutton.
  - (c) Press handset PTT button and speak into handset. Audio from forward attendant's station heard over all PA speakers. Background music or emergency announcement not heard.
- (4) Replace handset on its hanger at forward attendant's station. Emergency announcement audio should now be heard.
- (5) Return PASS OXY MASK switch to NORM position. Background music heard on all cabin speakers.
- (6) Remove the safety tags and close these circuit breakers:

### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	32	B1-868	PASSENGER OXYGEN CONTROL

### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	32	B1-869	PASSENGER OXYGEN CONTROL ALTERNATE

### UPPER EPC, L AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	34	B1-870	PASSENGER OXYGEN RELEASE

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

### UPPER EPC, R AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	34	B1-871	ALTERNATE PASSENGER OXYGEN RELEASE

- (7) Return aircraft to required configuration.

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### 4. Adjustment/Test

#### A. Tape Reproducer Test

NOTE: Test performed to test boarding music input and priority logic of the PA system and the associated aircraft wiring.

**Table 201**

Step	Operation	Desired Result
(1)	In avionics compartment, at forward right radio rack shelf 2, place track selection switch on front panel of tape reproducer to AUTO position.	Switch to AUTO.
(2)	At forward cabin attendant's station, rotate MUSIC level control clockwise then counterclockwise.	Volume level increase with clockwise rotation; volume level decrease with counter clockwise rotation; tape reproducer output heard over all cabin speakers.
(3)	Remove handset from cradle; press and release PA pushbutton and handset PTT switch then speak into handset mouthpiece.	Green LED integral to PA pushbutton illuminates. Speech from handset heard over all cabin speakers; tape announcements not heard.
(4)	Replace handset on cradle.	Tape announcements heard over all cabin speakers once again.
(5)	Rotate MUSIC level control to OFF position.	MUSIC level control to OFF; end Tape Reproducer Test.

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## ANNOUNCEMENT CONTROL PANEL - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and test procedures for the announcement control panel. The panel is mounted in the annunciator console assembly at the forward attendant's station.

### 2. Removal/Installation Announcement Control Panel

- A. Remove 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	19	B10-120	PASSENGER MUSIC

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (2) Disconnect electrical receptacle on lower side of panel.  
 (3) Remove and retain attaching hardware and lower panel from mounting area.

- B. Install 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	19	B10-120	PASSENGER MUSIC

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (2) Position panel over mounting area and secure with attaching hardware.  
 (3) Connect electrical connector to panel at lower side of panel.  
 (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	19	B10-120	PASSENGER MUSIC

**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (5) Test panel (PAGEBLOCK 23-32-00/201).

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### ANNOUNCEMENT TAPE REPRODUCER - MAINTENANCE PRACTICES

#### 1. General

- A. These maintenance practices provide removal/installation for the tape reproducer. The reproducer is placarded for visual identification. It is installed in the electrical/electronic compartment, on shelf two of the forward right radio rack. Access is through the external door below the radio compartment.

#### 2. Removal/Installation - Tape Reproducer

- A. Remove Tape Reproducer

**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	19	B10-120	PASSENGER MUSIC

##### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (2) Unscrew hold-down nuts at lower front panel of unit and swing nuts down to clear unit travel.  
 (3) Pull out on unit until electrical connectors are disengaged and slide unit straight out of mount.

- B. Install Tape Reproducer

**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	19	B10-120	PASSENGER MUSIC

##### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (2) Check electrical connectors of reproducer and mount for bent pins and foreign objects.  
 (3) Carefully place reproducer on mount and slowly slide unit into mount until electrical connectors are mated; push on face panel until connectors are completely engaged.  
 (4) Raise hold-down nuts, mate with unit hold-down lugs and tighten securely.  
 (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	19	B10-120	PASSENGER MUSIC



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**UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

(6) Test reproducer (PAGEBLOCK 23-32-00/201).

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER ENTERTAINMENT SYSTEM (PES) - DESCRIPTION AND OPERATION

#### 1. General

- A. The passenger entertainment multiplex system provides a selection of stereo and monaural audio programs and passenger address announcements for each passenger seat for use with headsets. A passenger control unit located at each seat provides the capabilities for selecting programmed entertainment. The system also provides selection and volume control of boarding music that is heard through the passenger address system. A self-test feature, controlled by a MUX TEST switch on the upper EPC, provides the means to test the system and isolate faulty LRUs.

#### 2. Description and Operation

##### A. Description

- (1) The Passenger Entertainment System (PES) consists of a 12 channel tape reproducer, main multiplexer, 1 seat electronics box (demultiplexer) per passenger seat assembly and 1 passenger control unit per passenger seat. The PES distributes the tape audio to all seat locations providing a selection of stereo/monaural programs. If the main multiplexer or tape reproducer is off, audio from the PA system continues to be available over the PA speakers only. When PA announcements are made, the PA audio overrides all other audio programs in the PES.
- (2) The PES is provided with a built-in test mode. In this mode, normal audio is replaced in all channels by a test signal to check the functional state of the equipment.
- (3) Audio signals from the multi-channel tape reproducer are connected via one pair of twisted wires per channel to the main multiplexer. The signals are then converted into a multiplexed audio signal and transmitted through a special shielded wire cable to the seat electronics box. The main multiplexer is also capable of receiving other audio input signals (i.e. PA) and converting these signals into a multiplexed audio signal.
- (4) The seat electronics box, or demultiplexer units, are located at each seat group (1, 2 or 3 seats) within the passenger cabin. Each demultiplexer is capable of receiving the multiplexed audio signal from the main multiplexer, convert the signal back to its original audio form and supply the audio signals to each of its assigned seats as commanded by the channel selection switches on the passenger control unit. The last seat furthest from the main multiplexer is equipped with an appropriate termination plug with a resistive termination equal to the characteristic impedance of the shielded cable.

##### B. Operation

- (1) Up to 12 channels of analog audio are fed from the tape reproducer to the main multiplexer where the audio signals are sampled and digitally encoded. The digital data is sent serially to each seat electronics box, one per seat assembly, via cables located in the seat track. A passenger control unit located in each seat arm, contains a passenger operated channel selector switch which commands the seat electronics box to decode the selected audio channels. Left and right channels of reconstructed audio are fed through a passenger operated volume control in the passenger control unit for use with headsets.

#### WJE 873, 874

- (2) An ON/OFF SEAT MUSIC switch on the forward attendant's panel and a MUX TEST switch on the upper EPC are provided. The MUX TEST switch activates a self test that checks system operation from the main multiplexer to each transducer. A green LED on each passenger control unit will light if the system is operating properly to that point. The MUX test does not check the tape reproducer or its associated wiring.

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 401-404, 886, 887

- (3) An ON/OFF SEAT MUSIC switch on the forward attendant's panel and a MUX TEST switch on the upper EPC are provided. The MUX TEST switch activates a self test that checks system operation from the main multiplexer to each transducer. An LED display on each passenger control unit will indicate if the system is operating properly to that point. The MUX test does not check the tape reproducer or its associated wiring.

### WJE 873, 874, 886, 887

- (4) During passenger address interface with the passenger entertainment system, one of four selectable audio channels is fed from the tape reproducer to the PA amplifier. The four channels are channels nine through twelve and may also be selected at the passenger seats. A four channel BOARDING MUSIC SELECT switch is mounted concentrically with a boarding music ON/OFF-VOLUME control on the forward attendant's panel. All PA announcements override the boarding music.

### WJE 401-404, 873, 874, 886, 887

#### 3. Passenger Entertainment System Components

##### A. Description

- (1) Main Multiplexer - The main multiplexer is designed to perform the following functions:
  - (a) Accept 12 separate input channels of audio program material, each channel on a twisted pair of wires from a music tape reproducer.
  - (b) Accept one input channel and its key input from the aircraft PA system.
  - (c) Upon receipt of a PA key input, the main multiplexer inhibits the transmission of the normal audio programs, inserts the PA audio into all multiplexer channels, and transmits to the seat electronics box.
  - (d) Sequentially convert each of the 14 analog inputs into a multiplexed signal and transmit this signal over two columns of shielded twisted pair cables with an impedance of 100 ohms.
  - (e) Internally generate a test signal and, upon command from an external switch (ground input), transfer its input lines from the tape reproducer to the internal BITE signal. Multiplex the test signal on all 12 channels and transmit the digital data over the shielded twisted pair cables to the seat electronics box.
  - (f) Provide a means of programming all audio channels as stereo or monaural without interface wiring or connection changes. Stereo channels shall be sequentially numbered starting with an odd number which identifies the first channel of a stereo pair, with the second channel being the next higher number.
- (2) Seat Electronics Box
  - (a) The seat electronics box receives the multiplexed audio signals from the main multiplexer, restores the signals to their original analog form, and provides program selection capability for each individual passenger in the seat group where it is located. The appearance of a BITE signal on the line from the main multiplexer shall cause the seat demultiplexer unit to initiate an automatic self-test of its internal electronics.
  - (b) The seat demultiplexer receives switch position information from each of its passenger control unit selector switches and extracts the desired channels from the multiplexed information sent to it by the main multiplexer. The selected signal is converted from digital to analog form. The demultiplexer correctly selects and demultiplexes any combinations of stereo/monaural channel mix from the main multiplexer without requiring any changes in the unit or its associated seat controls.

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### (3) Tape Reproducer

- (a) The tape reproducer's function is to be a source of pre-recorded programs for the passengers through the passenger entertainment audio distribution system. The tape reproducer consists of six identical tape transports which are controlled by a microcomputer. Each tape transport drive is also electronically controlled. Three pairs of cassette tapes, for a total of six pre-recorded cassette tapes, are loaded into the tape reproducer. The tapes are four channel tapes and are played in one direction only. One of a tape pair contains the first half of four mono or two stereo programs, and the other the second half. Therefore, the tape reproducer provides a total of twelve audio output channels. These output channels are continuous since the tape reproducer plays the first and second tapes of each pair alternately without any interruption between them. The tape reproducer itself has no external controls, and its operation is controlled from the forward attendant's station.
- (b) The cassette tape loading positions on the tape reproducer are identified 1A and 1B, 2A and 2B, and 3A and 3B. Positions 1A and 1B are for the tape pair containing channels 1 to 4 programs, 2A and 2B for channels 5 to 8, and 3A and 3B for channels 9 to 12, with A for the first half and B for the second half. In addition to positively identifying the six cassette tapes to correspond to the correct loading positions, it is also important to identify the side which faces outward when loaded in the unit. If the tapes are installed incorrectly, the start and stop cue signals cannot be detected and the audio will be reproduced in a reverse direction.

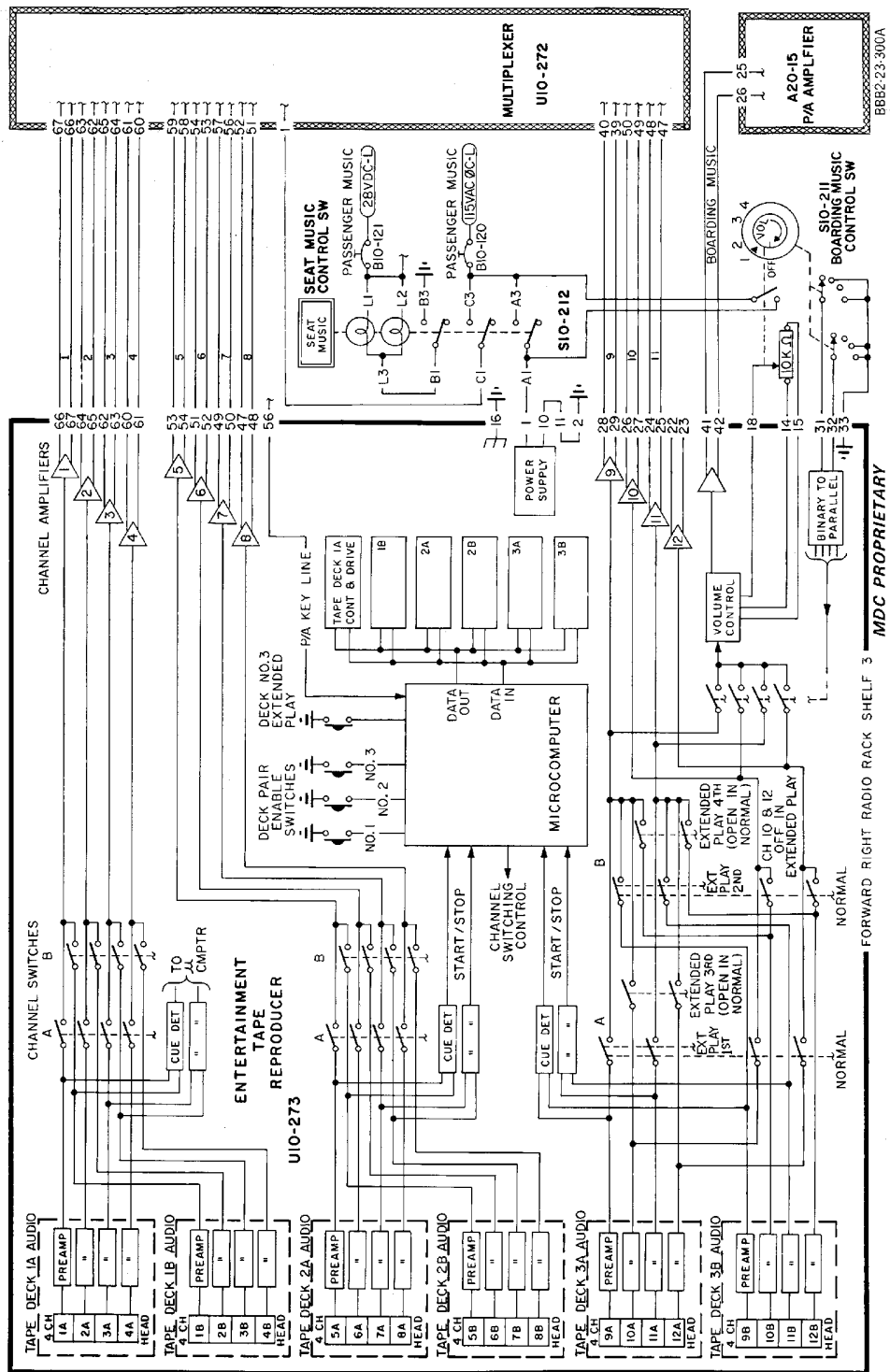
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**Passenger Entertainment Tape Reproducer  
Figure 1/23-33-00-990-802 (Sheet 1 of 3)**

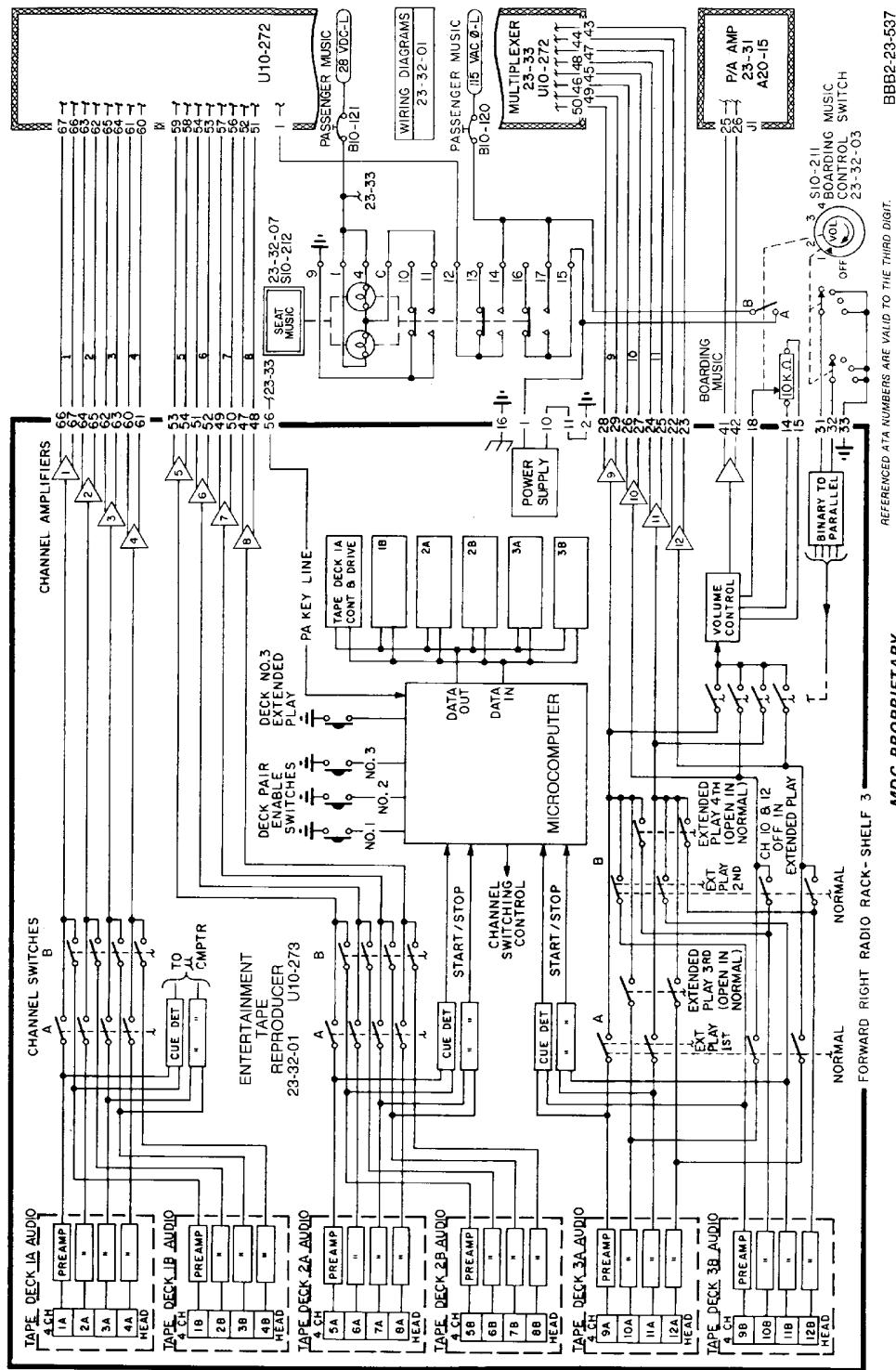
EFFECTIVITY  
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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

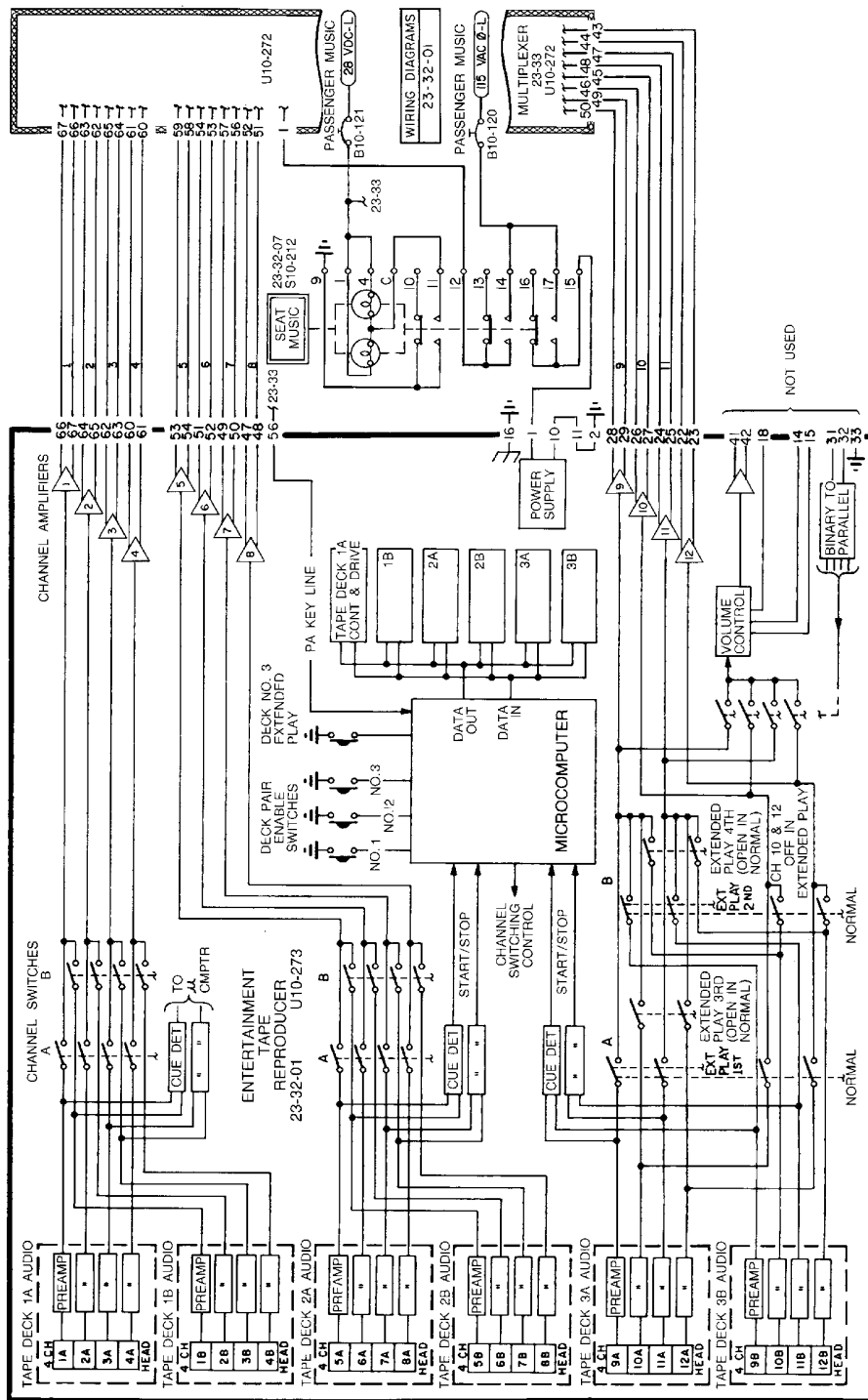
FORWARD RIGHT RADIO RACK - SHELF 3

Passenger Entertainment Tape Reproducer  
Figure 1/23-33-00-990-802 (Sheet 2 of 3)

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WJE 886, 887

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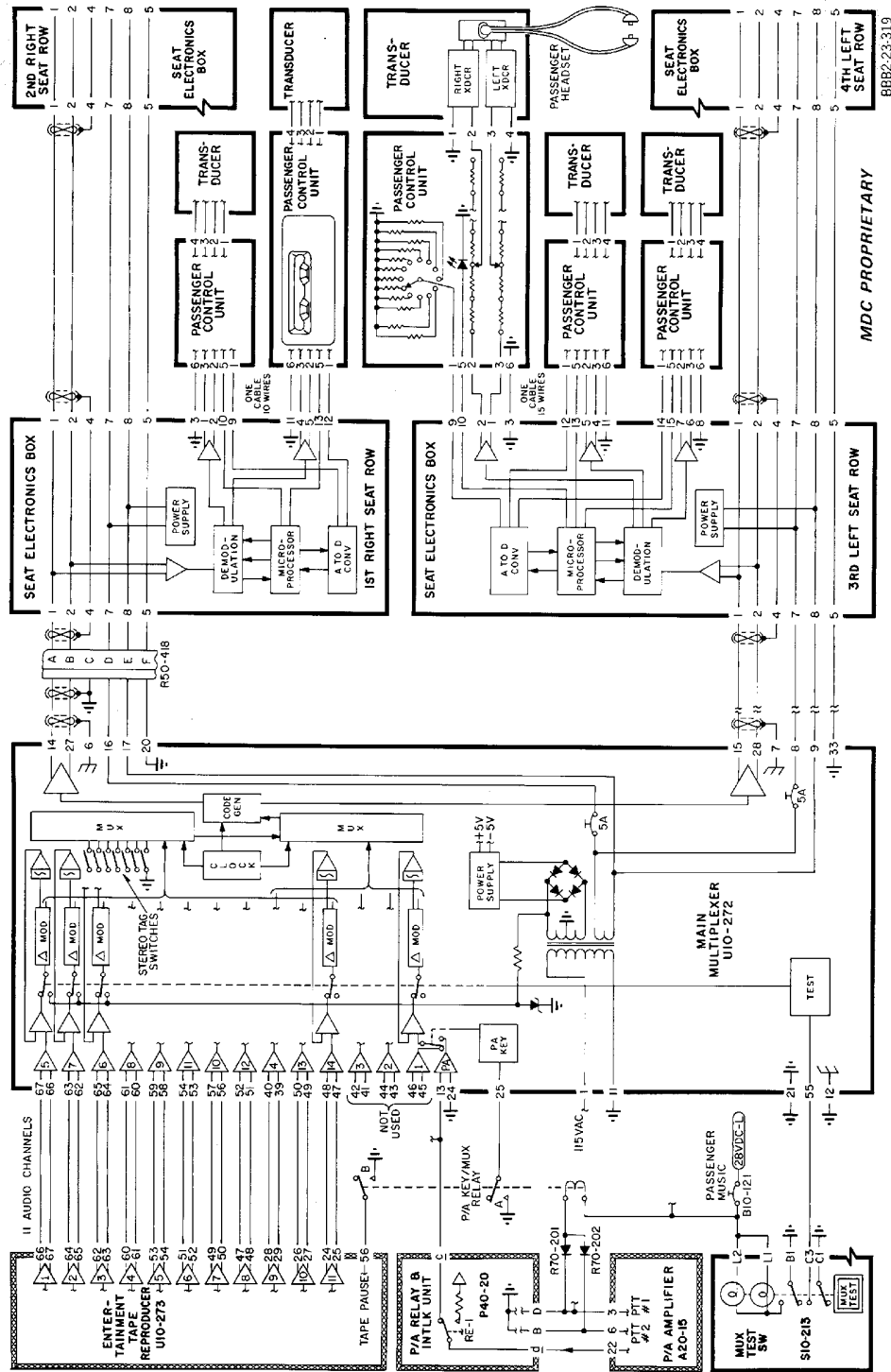
FORWARD RIGHT RADIO RACK - SHELF 3  
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 MDC PROPRIETARY  
 BBB2-23-596

Passenger Entertainment Tape Reproducer  
 Figure 1/23-33-00-990-802 (Sheet 3 of 3)

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 WJE 401-404

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MDC PROPRIETARY

BBB2-23-319

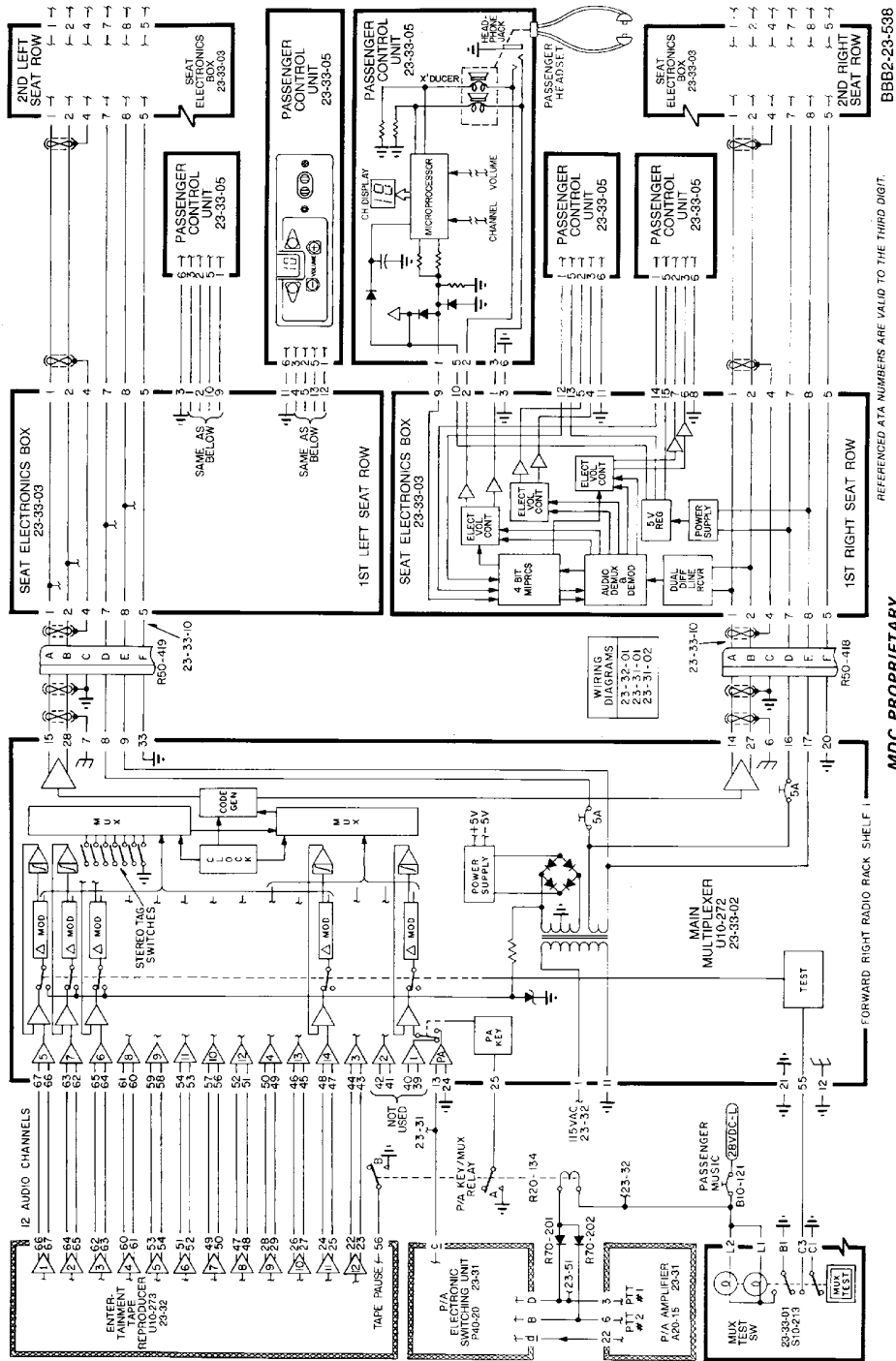
Passenger Entertainment (Multiplexing)  
Figure 2/23-33-00-990-803 (Sheet 1 of 3)

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Passenger Entertainment (Multiplexing)  
Figure 2/23-33-00-990-803 (Sheet 2 of 3)

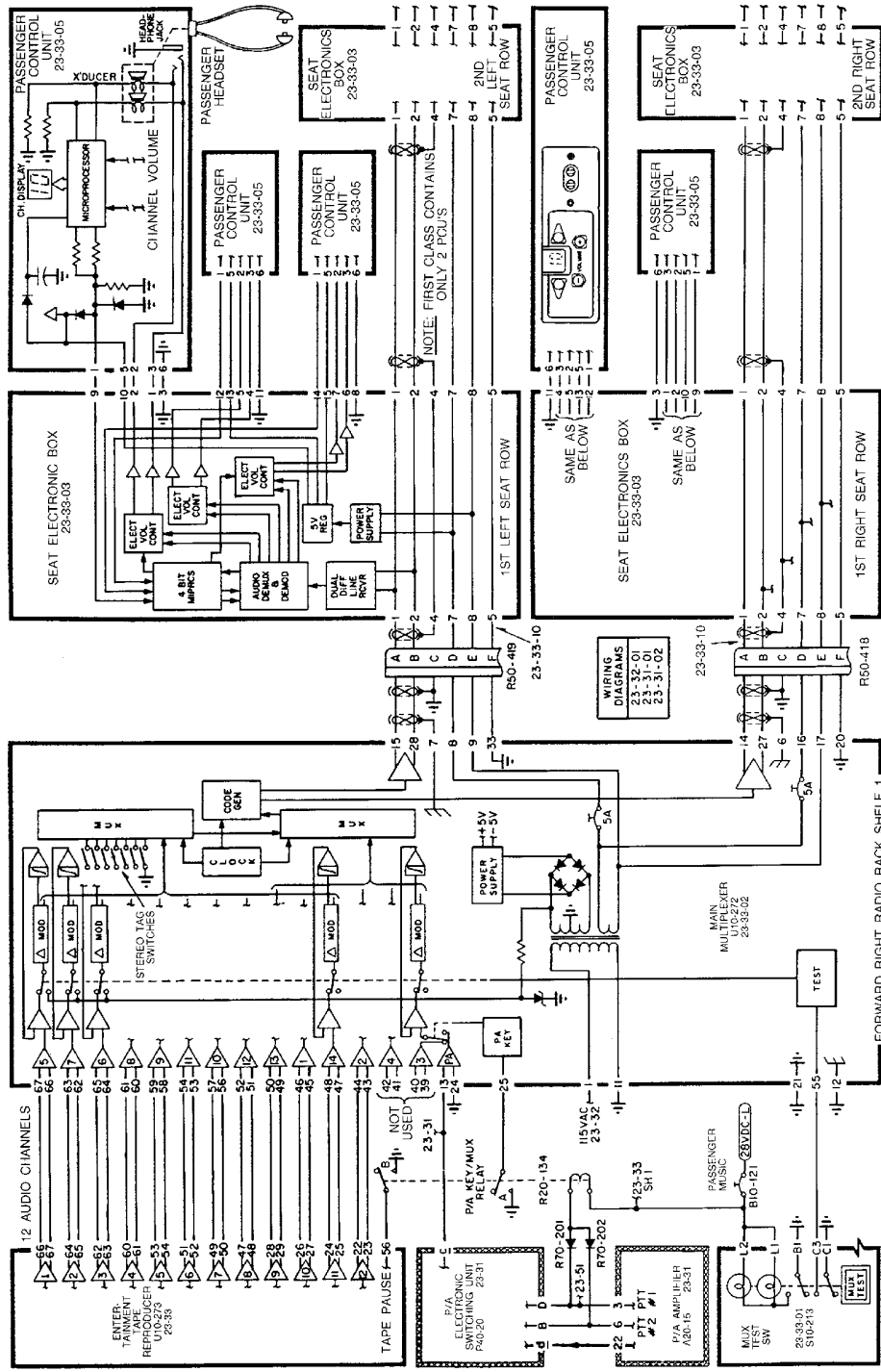
BBB2-23-538  
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
MDC PROPRIETARY

EFFECTIVITY  
WJE 886, 887

23-33-00

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-23-597  
REFERENCED DATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
MDC PROPRIETARY

Passenger Entertainment (Multiplexing)  
Figure 2/23-33-00-990-803 (Sheet 3 of 3)

EFFECTIVITY  
WJE 401-404

23-33-00

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PASSENGER ENTERTAINMENT SYSTEM (PES) - MAINTENANCE PRACTICES

1. General

- A. These maintenance practices provide a test for the passenger entertainment system. The passenger address system must be operational for the test as pre-recorded entertainment is broadcast over the passenger address system.

**WJE 401-404, 886, 887**

- B. The passenger entertainment system consists of a tape reproducer and main multiplexer (forward right radio rack), seat electronics box (located under each seat group) and a passenger control unit (located on passenger seat arm rest). A self-test feature is provided. The self-test is activated by the MUX TEST switch located on the upper EPC and checks system operation from the main multiplexer to each passenger headset. An LED display on each passenger control unit will indicate if the system is operating properly to that point. The self-test does not check the tape reproducer or its associated wiring.

**WJE 873, 874**

- C. The passenger entertainment system consists of a tape reproducer and main multiplexer (forward right radio rack), seat electronics box (located under each seat group) and a passenger control unit (located on passenger seat arm rest). A self-test feature is provided. The self-test is activated by the MUX TEST switch located on the upper EPC and checks system operation from the main multiplexer to each passenger headset. A green LED on each passenger control unit will light if the system is operating properly to that point. The self-test does not check the tape reproducer or its associated wiring.

**WJE 401-404, 873, 874, 886, 887**

2. Adjustment/Test

- A. Seat Music Test

NOTE: Test performed to ensure that proper tracks of the tape reproducer are reaching the passenger seat clear of any noise and distortion.

NOTE: Passenger address system must be in proper working order before proceeding with this test. Refer to PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1, for system check.

**Table 201 Seat Music Test**

Step	Operation	Desired Result
(1)	On upper EPC, verify MUX TEST switch is off.	MUX TEST switch light not on.
(2)	On forward attendant's panel, push and release SEAT MUSIC switch to on position.	SEAT MUSIC switch light comes on.
<b>WJE 401-404, 886, 887</b>		
(3)	On passenger control unit at each passenger seat arm, verify LED display is off.	LED display off.
<b>WJE 873, 874</b>		
(3)	On passenger control unit at each passenger seat arm, verify green LED display is off.	Green LED off.
<b>WJE 401-404, 873, 874, 886, 887</b>		
(4)	On upper EPC, push and release MUX TEST switch to on.	MUX TEST switch light comes on.

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**Table 201 Seat Music Test (Continued)**

Step	Operation	Desired Result
<b>WJE 401-404, 886, 887</b>		
(5)	On passenger control unit at each passenger seat arm, verify LED display has center horizontal bar of right digit illuminated.	Center horizontal bar of right digit on LED display illuminated.
<b>WJE 873, 874</b>		
(5)	On passenger control unit at each passenger seat arm, verify green LED display has center horizontal bar of right digit illuminated.	Green LED on.
<b>WJE 401-404, 886, 887</b>		
<u>NOTE:</u> If display is dark (blank) or illuminated with anything other than center horizontal bar of right digit, a fault is indicated. (Ref. Trouble Shooting Guide Paragraph 2.D.) .		
<b>WJE 401-404, 873, 874, 886, 887</b>		
(6)	On upper EPC, push and release MUX TEST switch to off.	MUX TEST switch light goes out; LED display off at all passenger seat arms.
(7)	Connect headset to headset jack in passenger seat arm in first seat row on left side of cabin.	Test set up.
(8)	On passenger control unit, select channel with audio and verify audio increases and decreases when adjusting volume control.	Volume increases and decreases.
(9)	On passenger control unit, operate channel selector and verify audio heard in head sets concur with tape track assignment to passenger control unit channel selector.	Audio concurs and is clear of noise and distortion.
<u>NOTE:</u> Channels with different audio in each ear piece are stereo channels.		
(10)	Disconnect headset from headset jack	
(11)	Repeat steps (6) through (9) for the following areas:	Same as steps (6) through (9).
	(a) First seat row on right side of cabin.	
	(b) Last seat row on left side of cabin.	
	(c) Last seat row on right side of cabin.	
(12)	On forward attendant's panel, push and release SEAT MUSIC switch to OFF.	SEAT MUSIC switch light off.

B. PA Test

C. Boarding Music/PA Test

NOTE: Test performed to test passenger entertainment system interface with passenger address system.

**Table 202 Boarding Music/PA Test**

Step	Operation	Desired Result
(1)	On aft pedestal and forward attendant's station, install handset.	Test set up

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WJE 401-404, 873, 874, 886, 887

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**Table 202 Boarding Music/PA Test (Continued)**

Step	Operation	Desired Result
(2)	On forward attendant's panel, rotate BOARDING MUSIC ON/OFF volume control to a comfortable listening level.	Boarding music heard over all main cabin speakers free of noise and distortion.
(3)	On forward attendant's panel rotate BOARDING MUSIC ON/OFF volume control first in a clockwise direction, then in a counterclockwise direction.	Audio increases with clock wise rotation, decreases with counterclockwise rotation.
(4)	Rotate BOARDING MUSIC channel selector switch, one by one, through all channels (1, 2, 3, 4).	Audio concurs with tape track assignment.
(5)	Verify MUX TEST switch light is off.	Light off.
(6)	On forward attendant's panel, press and release SEAT MUSIC switch to ON.	SEAT MUSIC light on.
(7)	Connect headset to headset jack on any passenger seat arm.	Test set up.
(8)	On passenger control unit, select an active channel and adjust volume to a comfortable listening level.	Channel selected, volume set.
(9)	On aft pedestal, remove handset from hanger.	No test.
(10)	On overhead switch panel, push and release PA pushbutton.	PA pushbutton light comes on; no tape announcements heard over all main cabin speakers or headsets.
<p><b>NOTE:</b> Verify that the entertainment tape reproducer has disengaged. Open the two side panels on the tape reproducer and visually inspect no tape movement. If side panels cannot be opened due to space limitations, listen for tape reproducer disengagement while any PA push to announce is activated.</p>		
(11)	On aft pedestal, depress PTT button and speak into mouthpiece.	Speech heard over cabin speakers and headsets free of noise and distortion.
(12)	On aft pedestal, return handset to its hanger.	PA pushbutton light goes out; tape announcements heard over main cabin speakers and headsets.
(13)	On forward attendant's station, remove handset from hanger; push and release PA pushbutton.	PA pushbutton light comes on, tape announcements not heard over cabin speakers or headsets.
(14)	On forward attendant's station, press and release PTT button and speak into mouthpiece.	Speech heard over main channel cabin speakers and headsets free of noise and distortion.
(15)	On forward attendant's station, place handset on its hanger.	Tape announcements heard over main channel cabin speakers and headsets.
(16)	On forward attendant's station, rotate BOARDING MUSIC ON/OFF volume control to OFF position.	Control off.
(17)	On forward attendant's station, press and release SEAT MUSIC switch to OFF position.	SEAT MUSIC SWITCH light off.

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D. Trouble Shooting Guide - MUX Self Test

**NOTE:** The self test is activated by the MUX TEST switch located on the upper EPC and checks the multiplexer unit, seat electronic boxes, passenger control units (including the transducer), and all interconnecting cables.

	TEST RESULTS	ACTION
<p style="text-align: center;">MUX UNIT</p> <p style="text-align: center;">PCU'S</p> <p style="text-align: center;">TERMINATOR</p> <p style="text-align: center;">● = TEST OK    ○ = NOT OK</p>	<p>1.</p> <p>System checks OK:</p> <p>2 digit display - The "horizontal bar" is illuminated on all PCU's.</p> <div style="text-align: center; border: 1px solid black; width: 30px; height: 30px; margin: 10px auto;"> <div style="border-bottom: 2px solid black; width: 100%;"></div> </div>	<p style="text-align: center;">Return test switch to off.</p>

CAG(IGDS)

BBB2-23-487

**MUX Self Test - Fault Isolation**  
Figure 201/23-33-00-990-801 (Sheet 1 of 5)


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WJE 401-404, 873, 874, 886, 887

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

	TEST RESULTS	ACTION
	<p>2.</p> <p>Single PCU in seat group indicates fault.</p> <p><u>2 digit display</u> - The letter "E" is illuminated.</p> 	<p>Return test switch to off and then check affected seat for type of audio problem.</p> <ol style="list-style-type: none"> <li>1) Replace PCU.</li> <li>2) Replace SEB.</li> <li>3) Check PCU harness to SEB and repair or replace if required.</li> </ol>
	<p>3.</p> <p>Two PCU's in a 3-seat seat group indicate fault.</p>	<p>Same as step 2.</p>

CAG(IGDS)

BBB2-23-488

**MUX Self Test - Fault Isolation**  
Figure 201/23-33-00-990-801 (Sheet 2 of 5)

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	TEST RESULTS	ACTION
	<p>4.</p> <p>All PCU's in a seat group indicate fault.</p>	<ol style="list-style-type: none"> <li>1) Check that the seat harness is connected to SEB and it is in good condition.</li> <li>2) Replace SEB.</li> </ol> <p>Return test switch to off and listen for audio at seats. If audio is noisy or static, go to step 7. If no audio, dead silence, proceed.</p>
	<p>5.</p> <p>All PCU's in one column indicate fault.</p>	<ol style="list-style-type: none"> <li>1) Check circuit breakers on Multiplexer Unit.</li> <li>2) Replace Multiplexer Unit.</li> <li>3) Check continuity of shielded twisted pair between Multiplexer Unit and SEB column. Repair or replace cable if required.</li> </ol>

CAG(IGDS)

BBB2-23-489

**MUX Self Test - Fault Isolation**  
Figure 201/23-33-00-990-801 (Sheet 3 of 5)

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	TEST RESULTS	ACTION
	<p>6.</p> <p>All PCU's in both columns indicate fault.</p>	<ol style="list-style-type: none"> <li>1) Check that circuit breaker is closed for Multiplexer Unit power.</li> <li>2) Check circuit breakers on Multiplexer Unit.</li> <li>3) Replace Multiplexer Unit.</li> <li>4) Check continuity of shielded twisted pair between Multiplexer Unit and SEB columns. Repair or replace cable if required.</li> </ol>
	<p>7.</p> <p>Column with Random seat groups of PCU's indicates fault.</p> <p><b>NOTE:</b> Noisy (harsh sounding) audio in a column is normally caused by a twisted pair cable or terminator problem.</p>	<p>Return test switch to off and check audio for each seat group. We are looking for noisy (harsh sounding) audio, random throughout the column. If noisy:</p> <ol style="list-style-type: none"> <li>1) Check the termination plug at the end of the column. Make sure it is seated correctly.</li> <li>2) Repair or replace the termination plug if required.</li> <li>3) Look for disconnected seat to seat cable or an opening in the shielded twisted pair PES line.</li> </ol>

CAG(IGDS)

BBB2-23-490

**MUX Self Test - Fault Isolation**  
Figure 201/23-33-00-990-801 (Sheet 4 of 5)

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

	TEST RESULTS	ACTION
	<p>8.</p> <p>Erroneous display on PCU.</p> <p>2 digit display - A blank display (dark), or anything other than an "E" or "horizontal bar."</p>	<p>Ensure that the seat harness is securely connected at both the affected PCU and the SEB.</p> <ol style="list-style-type: none"> <li>1) Replace PCU.</li> <li>2) Replace SEB.</li> <li>3) Check PCU harness to SEB and repair or replace if required.</li> </ol>
	<p>9.</p> <p>Partial column of PCU's indicate fault.</p>	<p>Check continuity of shielded twisted pair for the seat to seat cable between last seat group with PCU's indicating test OK, and first seat group with PCU's indicating fault. Repair or replace cable if required.</p>

CAG(IGDS)

BBB2-23-491

**MUX Self Test - Fault Isolation**  
Figure 201/23-33-00-990-801 (Sheet 5 of 5)

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WJE 401-404, 886, 887

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### MAIN MULTIPLEXER - MAINTENANCE PRACTICES

#### 1. General

- A. This maintenance practice provides removal/installation of the main multiplexer of the passenger entertainment system only.

#### 2. Removal/Installation Main Multiplexer

- A. Remove Main Multiplexer

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

##### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

##### **WJE 873, 874, 886, 887**

F	22	B10-117	PASSENGER ADDRESS
---	----	---------	-------------------

##### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (2) Loosen hold-down nuts at lower front end of unit.  
 (3) Swing hold-down nuts down to clear unit.  
 (4) Carefully pull unit straight out of mount.  
 (5) If main multiplexer is being replaced, carefully package defective unit into container that originally contained the new unit and identify as being defective.

- B. Install Main Multiplexer

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

##### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

##### **WJE 873, 874, 886, 887**

F	22	B10-117	PASSENGER ADDRESS
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EFFECTIVITY <b>WJE 401-404, 873, 874, 886, 887</b>
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# 23-33-02

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 873, 874, 886, 887 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

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

WJE 401-404, 873, 874, 886, 887

G	19	B10-121	PASSENGER MUSIC
---	----	---------	-----------------

- (2) Visually check unit connectors for damage and foreign objects.
- (3) Place unit on mount and carefully slide to rear of mount.
- (4) Raise hold-down nuts, mate with unit hold-down lugs, and tighten securely.
- (5) 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>
------------	------------	---------------	-------------

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

### UPPER EPC, LEFT RADIO AC BUS

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

F	19	B10-120	PASSENGER MUSIC
---	----	---------	-----------------

WJE 873, 874, 886, 887

F	22	B10-117	PASSENGER ADDRESS
---	----	---------	-------------------

### UPPER EPC, LEFT RADIO DC BUS

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

WJE 401-404, 873, 874, 886, 887

G	19	B10-121	PASSENGER MUSIC
---	----	---------	-----------------

- (6) Perform system test listed in Passenger Entertainment System - Maintenance Practices (PAGEBLOCK 23-33-00/201).

EFFECTIVITY WJE 401-404, 873, 874, 886, 887
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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## TAPE REPRODUCER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation of the tape reproducer of the passenger entertainment system only.

### 2. Removal/Installation Tape Reproducer

- A. Remove Tape Reproducer

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

#### **WJE 873, 874, 886, 887**

F	22	B10-117	PASSENGER ADDRESS
---	----	---------	-------------------

#### **UPPER EPC, LEFT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

- (2) Loosen hold-down nuts at lower front end of unit.  
 (3) Swing hold-down nuts down to clear unit.  
 (4) Carefully pull unit straight out of mount.  
 (5) If tape reproducer is being replaced, carefully package defective unit into container that originally contained the new unit and identify as being defective.

- B. Install Tape Reproducer

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

#### **WJE 873, 874, 886, 887**

F	22	B10-117	PASSENGER ADDRESS
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EFFECTIVITY  
WJE 401-404, 873, 874, 886, 887

# 23-33-30

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 873, 874, 886, 887 (Continued)

### UPPER EPC, LEFT RADIO DC BUS

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

WJE 401-404, 873, 874, 886, 887

G	19	B10-121	PASSENGER MUSIC
---	----	---------	-----------------

- (2) Visually check unit connectors for damage and foreign objects.
- (3) Place unit on mount and carefully slide to rear of mount.
- (4) Raise hold-down nuts, mate with unit hold-down lugs, and tighten securely.
- (5) 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>
------------	------------	---------------	-------------

A	8	B10-118	PASSENGER ADDRESS
---	---	---------	-------------------

### UPPER EPC, LEFT RADIO AC BUS

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

F	19	B10-120	PASSENGER MUSIC
---	----	---------	-----------------

WJE 873, 874, 886, 887

F	22	B10-117	PASSENGER ADDRESS
---	----	---------	-------------------

### UPPER EPC, LEFT RADIO DC BUS

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

WJE 401-404, 873, 874, 886, 887

G	19	B10-121	PASSENGER MUSIC
---	----	---------	-----------------

- (6) Perform system test listed in Passenger Entertainment System - Maintenance Practices. (PAGEBLOCK 23-33-00/201)

EFFECTIVITY WJE 401-404, 873, 874, 886, 887
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### PORTABLE COMMUNICATIONS - MAINTENANCE PRACTICES

#### 1. General

- A. Portable communications comprises two power megaphones, installed one each in the left forward and aft overhead stowage compartments. The megaphones are intended for use during emergencies such as a major power failure.

#### 2. Inspection/Check Megaphone

- A. Check Megaphone
  - (1) Remove megaphone from holding bracket.
  - (2) Remove batteries from megaphone body and examine for corrosion. If corrosion is evident, replace batteries.
  - (3) Check whether megaphone operates properly. Megaphone volume control should be set to just below feedback point (howling, distortion) when operated in area of normal use.
  - (4) If volume is too low, replace batteries and recheck volume. If volume is still too low, replace megaphone.

#### EFFECTIVITY

WJE 415-427, 429, 861-866, 868, 869, 871, 872,  
875-879, 891

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**PORTABLE COMMUNICATIONS - REMOVAL/INSTALLATION**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 23-34-00-901-801**

**2. Discard Megaphone Batteries**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

<u>Reference</u>	<u>Title</u>
23-34-00-710-801	Operational Check of the Megaphone (P/B 501)

**B. Prepare for Megaphone Batteries Discard**

SUBTASK 23-34-00-020-002

(1) Remove megaphone from holding bracket.

**C. Megaphone Battery Discard**

SUBTASK 23-34-00-901-001

- (1) Remove old batteries and discard.
- (2) Clean corrosion from the megaphone if present.
- (3) Install new batteries.

SUBTASK 23-34-00-710-002

(4) Operational check the megaphone. (Operational Check of the Megaphone, TASK 23-34-00-710-801)

**D. Job Close-up**

SUBTASK 23-34-00-420-002

(1) Place and secure megaphone in holding bracket.

SUBTASK 23-34-00-942-002

(2) Remove all the tools and equipment from the work area. Make sure the area is clean.

———— **END OF TASK** ————

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WJE ALL

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AIRCRAFT MAINTENANCE MANUAL**

**PORTABLE COMMUNICATIONS - ADJUSTMENT/TEST**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 23-34-00-710-801**

**2. Operational Check of the Megaphone**

**A. Prepare for Megaphone Operational Check**

SUBTASK 23-34-00-020-001

(1) Remove megaphone from holding bracket.

**B. Megaphone Operational Check**

SUBTASK 23-34-00-710-001

(1) Adjust the volume control so the volume is just below feedback level (howling, distortion).

(2) Press the push-to-talk (PTT) button , then speak into the microphone.

(3) Make sure the volume is not too low when operated in area of normal use.

**C. Job Close-up**

SUBTASK 23-34-00-420-001

(1) Place and secure megaphone in holding bracket.

SUBTASK 23-34-00-942-001

(2) Remove all the tools and equipment from the work area. Make sure the area is clean.

———— **END OF TASK** ————

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### SERVICE INTERPHONE - DESCRIPTION AND OPERATION

#### 1. General

- A. The service interphone system as discussed in this manual includes the mechanic call horn. The interphone provides for communications between crew members, service, and maintenance personnel. A visual and aural interphone call system is provided to alert personnel that their station is being called. Service interphone jack outlets, located in areas where maintenance and service is most frequently performed, are connected through a maintenance interphone switch to the interphone system. These service interphone jack outlets may be switched in and out of the service interphone system. The interphone call system is used to alert the pilot, mechanic, individual cabin attendant station, or all stations to establish service interphone communications.

**WJE 405-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

- B. The service interphone system consists of a service interphone amplifier, service interphone jack outlets, P/A relay and interlock panel or, if installed, electronic switching unit, handsets with hanger switches, and a maintenance interphone switch.

**WJE 401-404, 410, 412, 414, 886, 887**

- C. The service interphone system consists of a service interphone amplifier, service interphone jack outlets, electronic switching unit, handsets with hanger switches, and a maintenance interphone switch.

**WJE ALL**

#### 2. Service Interphone Components

##### A. Description

- (1) Service Interphone Amplifier - The service interphone amplifier provides the necessary audio amplification for service interphone communications. The amplifier is connected directly to the jack outlets and to the cabin hand-sets through their hanger switches. The amplifier is installed on the forward right radio rack in the electrical/electronics compartment.
- (2) Service Interphone Jack Outlets - The service interphone jack outlets are installed in the electrical/electronics compartment; external power receptacle panel; air conditioning compartment; fuel service panel; left and right main gear wheelwell; forward accessory compartment; forward, mid, and aft cargo compartments; right wing fuel panel; vertical stabilizer; and left and right fuselage (adjacent to engine nacelles).

**WJE 405-409, 411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

- (3) P/A Relay and Interlock Panel - The interphone and passenger address system are interconnected through a passenger address relay and interlock panel so that the cabin attendant and flight compartment handsets can be used with both systems.

**WJE 401-404, 410, 412, 414, 886, 887**

- (4) Electronic Switching Unit - The interphone and passenger address system are interconnected through a passenger address electronic switching unit so that the cabin attendant and flight compartment handsets can be used with both systems.

**WJE 410, 886, 887**

- (5) Interphone Handsets - The interphone handsets with hanger switches for use with the interphone system are located at the aft pedestal, forward and aft cabin attendant stations. Each handset consists of an audio receiver, a microphone, and a push-to-talk switch. Audio to the receiver is turned off while the handset is secured in the handset hanger. The microphone is connected to the audio signal wiring by the handset push-to-talk switch and hanger switch.

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WJE ALL

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### WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

- (6) Interphone Handsets - The interphone handsets with hanger switches for use with the interphone system are located at the aft pedestal, forward, intermediate, and aft cabin attendant stations. Each handset consists of an audio receiver, a microphone, and a push-to-talk switch. Audio to the receiver is turned off while the handset is secured in the handset hanger. The microphone is connected to the audio signal wiring by the handset push-to-talk switch and hanger switch.

### WJE 407, 408, 411, 880

- (7) Maintenance Interphone Switch - The maintenance interphone switch, located on the aft overhead switch panel, is used to disconnect the service interphone jack outlets from the interphone system. During flight the maintenance interphone switch is normally operated in the OFF position.

### WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 891-893

- (8) Maintenance Interphone Switch - The maintenance interphone switch is located on the forward overhead switch panel, and in the off position is used to isolate the following service interphone jack outlets from the interphone system: Flight Compartment, Radio Rack, External Power Receptacle Panel, Forward Cabin Attendant Station, Aft Galley Service door Folding Seat Location and Aft Cabin Attendant Station. During flight the maintenance interphone switch is normally operated in the OFF position. When switch is in ON position all service interphone locations are connected.

### WJE 886, 887

- (9) Maintenance Interphone Switch - The maintenance interphone switch is located on the overhead switch panel, and in the OFF position is used to isolate the following service interphone jack outlets from the interphone system: Flight Compartment, Radio Rack, External Power Receptacle Panel, Forward Cabin Attendant Station, and Aft Cabin Attendant Station. During flight the maintenance interphone switch is normally operated in the OFF position. When switch is in ON position all service interphone locations are connected.

### WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

- (10) Service Interphone Call - The service interphone call system is used to activate an audio signal and turn on a light to indicate the station is being called. A pilot-attendant-mechanic call system is provided. Flight compartment initiated interphone calls may be directed to the mechanic station, or all attendants' stations simultaneously. Forward attendant initiated calls may be directed to the following locations: flight compartment; intermediate and aft attendant stations. Intermediate cabin attendant initiated calls may be directed to: flight compartment; forward and aft cabin attendant stations. Aft cabin attendant initiated calls may be directed to the following locations: flight compartment and forward and intermediate cabin attendant stations. Interphone calls from the flight compartment to attendant stations actuate a PA chime and lights at the attendant stations. Calls from an attendant station actuate a tone channel in the Central Aural Warning System, and a light on the overhead switch panel. Pilot's or attendant's call lights are latched on by a call light holding relay located in the forward attendant's console. Resetting the relay is accomplished by the applicable reset switch, turning off the applicable call light. Pilot-mechanic calls initiated by the pilot actuate a call horn in the nose wheelwell and a mechanic initiated call actuates the pilot call bell and lights the mechanic calling light in the flight compartment.

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### WJE 410, 886, 887

- (11) Service Interphone Call - The service interphone call system is used to activate an audio signal and turn on a light to indicate the station is being called. A pilot-attendant-mechanic call system is provided. Flight compartment initiated interphone calls may be directed to the mechanic station, or all attendants' stations simultaneously. Forward attendant initiated calls may be directed to the following locations: flight compartment and aft attendant stations. Aft cabin attendant initiated calls may be directed to the following locations: flight compartment and forward cabin attendant stations. Interphone calls from the flight compartment to attendant stations actuate a PA chime and lights at the attendant stations. Calls from an attendant station actuate a tone channel in the Central Aural Warning System, and a light on the overhead switch panel. Pilot's or attendant's call lights are latched on by a call light holding relay located in the forward attendant's console. Resetting the relay is accomplished by the applicable reset switch, turning off the applicable call light. Pilot-mechanic calls initiated by the pilot actuate a call horn in the nose wheelwell and a mechanic initiated call actuates the pilot call tone and lights the mechanic calling light in the flight compartment.

### WJE ALL

#### B. Operation

- (1) The interphone system amplifier operation is continuous, when power is applied to the electrical buses and the interphone circuit breaker is closed. To operate the interphone system from the aft pedestal, or any attendant panel, press the applicable call switch for the station where communication is desired. The visual and aural indication at the station called is actuated, indicating a call for that station.
- (2) For handset operation at the aft pedestal or a cabin attendant station, the handset is removed from the hanger, and the push-to-talk switch is pressed. Microphone audio is applied to the amplifier and amplified. Audio output is applied through the handset hanger switches to the handset receivers, providing the handset is not in the hanger.
- (3) For service interphone operation from service interphone jack outlets, the GROUND SERVICE ELEC PWR SERVICE maintenance interphone ON OFF switch, located on the overhead panel must be in the ON position. A handset is inserted into any service interphone jack outlet and the push-to-talk switch is pressed. Microphone audio is applied to the amplifier and amplified. Audio output is applied to all jack outlets and to all handset stations, providing the handset is not in the hanger.

#### C. To Operate Service Interphone System

- (1) To Operate System from Handset Stations
  - (a) Energize electrical buses.
  - (b) Remove handset from hanger.
  - (c) Press handset push-to-talk switch.
- (2) To Operate System from Service Interphone Jack Outlets
  - (a) Energize electrical buses.
  - (b) Place maintenance interphone switch to ON position.
  - (c) Insert handset into service interphone jack outlet.
  - (d) Press push-to-talk switch.

#### D. To Operate Service Interphone Call System

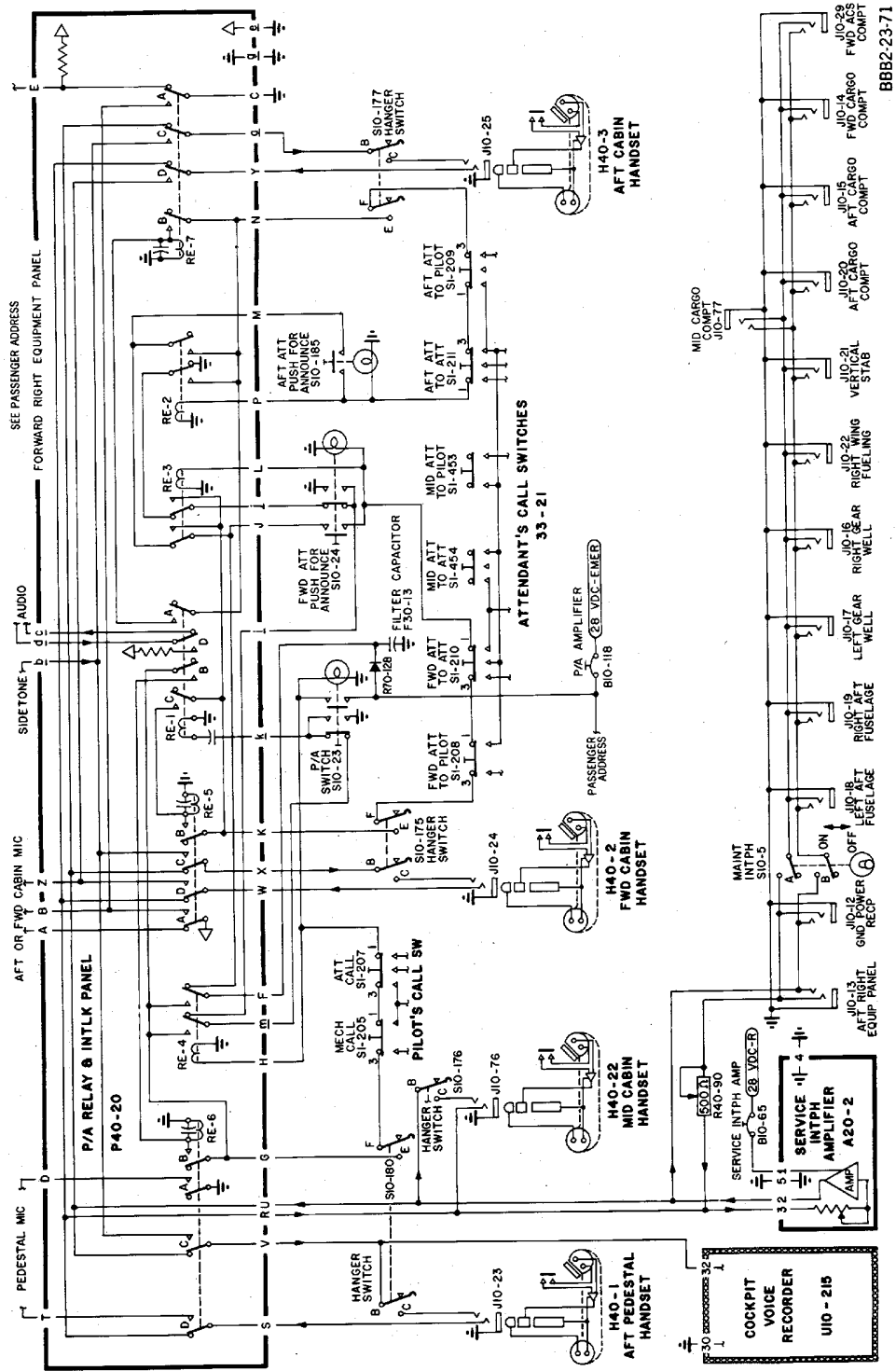
- (1) Energize aircraft electrical buses.
- (2) Press call switch to alert applicable station to establish service interphone communications.

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Service Interphone System - Schematic  
Figure 1/23-40-00-990-807

EFFECTIVITY  
WJE ALL

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## SERVICE INTERPHONE - TROUBLE SHOOTING

### 1. General

- A. Trouble Shooting procedures provided in this section are basic procedures for isolating and correcting faults in the interphone system in the aircraft.
- B. The basic causes of faulty system operation are generally: faulty aircraft wiring or faulty line replaceable units (LRUs).
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.

#### **WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

- D. The major components of the system are the service interphone amplifier, handsets, PA relay and interlock panel, maintenance interphone switch and maintenance interphone jacks. The system interfaces with the passenger address system. In Trouble Shooting, some checks may have to be made in that systems components and wiring.

#### **WJE 401-404, 412, 414**

- E. The major components of the system are the service interphone amplifier, handsets, PA relay and interlock panel, maintenance interphone switch and maintenance interphone jacks. The system interfaces with the passenger address, and the audio integrating system. In Trouble Shooting, some checks may have to be made in those systems components and wiring.

#### **WJE 886, 887**

- F. The major components of the system are the service interphone amplifier, handsets, electronic switching unit, maintenance interphone switch and maintenance interphone jacks. The system interfaces with the passenger address system. In Trouble Shooting, some checks may have to be made in that systems components and wiring.

#### **WJE ALL**

- G. System components are located as follows:

**Table 101**

Component	Location
Service Interphone Amplifier	Forward Right Radio Rack, Electrical/Electronic Compartment
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>	
Handsets	Flight Compartment Pedestal, Forward, Mid and Aft Cabin Attendant Panels
<b>WJE 886, 887</b>	
Handsets	Flight Compartment Pedestal, Forward and Aft Cabin Attendant Panels
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>	
PA Relay & Interlock Panel	Relay Panel, Forward Right Radio Rack
<b>WJE 886, 887</b>	
Electronic Switching Unit	Relay Panel, Forward Right Radio Rack
<b>WJE ALL</b>	
Maintenance Interphone Switch	Flight Compartment Overhead Switch Panel

EFFECTIVITY
WJE ALL

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**Table 101 (Continued)**

Component	Location
Maintenance Interphone Jacks	Refer to Figure 101 or Figure 102 or Figure 103 or Figure 104 or Figure 105

Circuit Breaker Locations

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	8	B10-118	PASSENGER ADDRESS
<b>WJE 410</b>			
A	9	B10-118	PASSENGER ADDRESS

### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	8	B10-65	SERVICE INTERPHONE

## 2. Equipment and Materials

NOTE: Equivalent substitutes may be used in place of the following listed item.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 102**

Name and Number	Manufacturer
Multimeter, Digital, Danameter 2000A	Dana Instruments, Inc.

## 3. Trouble Shooting Service Interphone

A. Trouble Shooting

### **WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

NOTE: During continuity, power, and ground checks, it may be necessary to refer to wiring diagram manual for terminal board connections and wire identification. LRUs are interphone amplifier, handsets, and interlock relays.

### **WJE 401-404, 412, 414**

NOTE: During continuity, power, and ground checks, it may be necessary to refer to wiring diagram manual for terminal board connections and wire identification. LRUs are interphone amplifier, handsets, interlock relays, and audio control panels.

EFFECTIVITY	
WJE ALL	

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**WJE 886, 887**

NOTE: During continuity, power, and ground checks, it may be necessary to refer to wiring diagram manual for terminal board connections and wire identification. LRUs are interphone amplifier, handsets, and electronic switching unit.

**WJE ALL**

**Table 103**

Procedure		Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Check for proper grounds at LRUs. 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 LRUs.
(3)	Perform continuity check of aircraft wiring. A hot continuity check may be required to check operation of relays or other associated active components to complete continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.
(4)	Replace suspected faulty LRU or component with a known operational unit.	Replace faulty LRU or component.

EFFECTIVITY  
WJE ALL

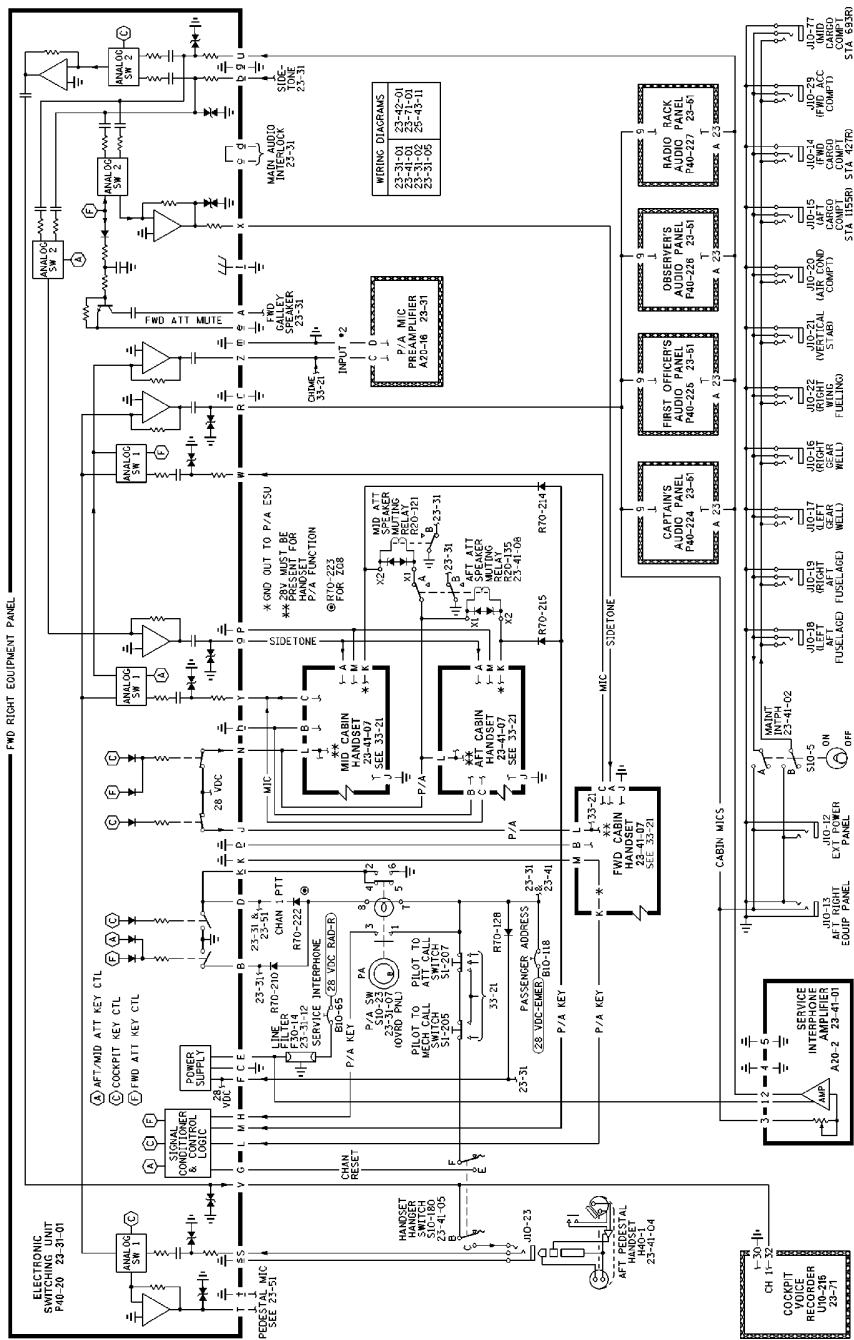
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Cabin and Service Interphone System -- Schematic  
Figure 101/23-40-00-990-801 (Sheet 1 of 2)

EFFECTIVITY  
WJE 401-404, 412, 414

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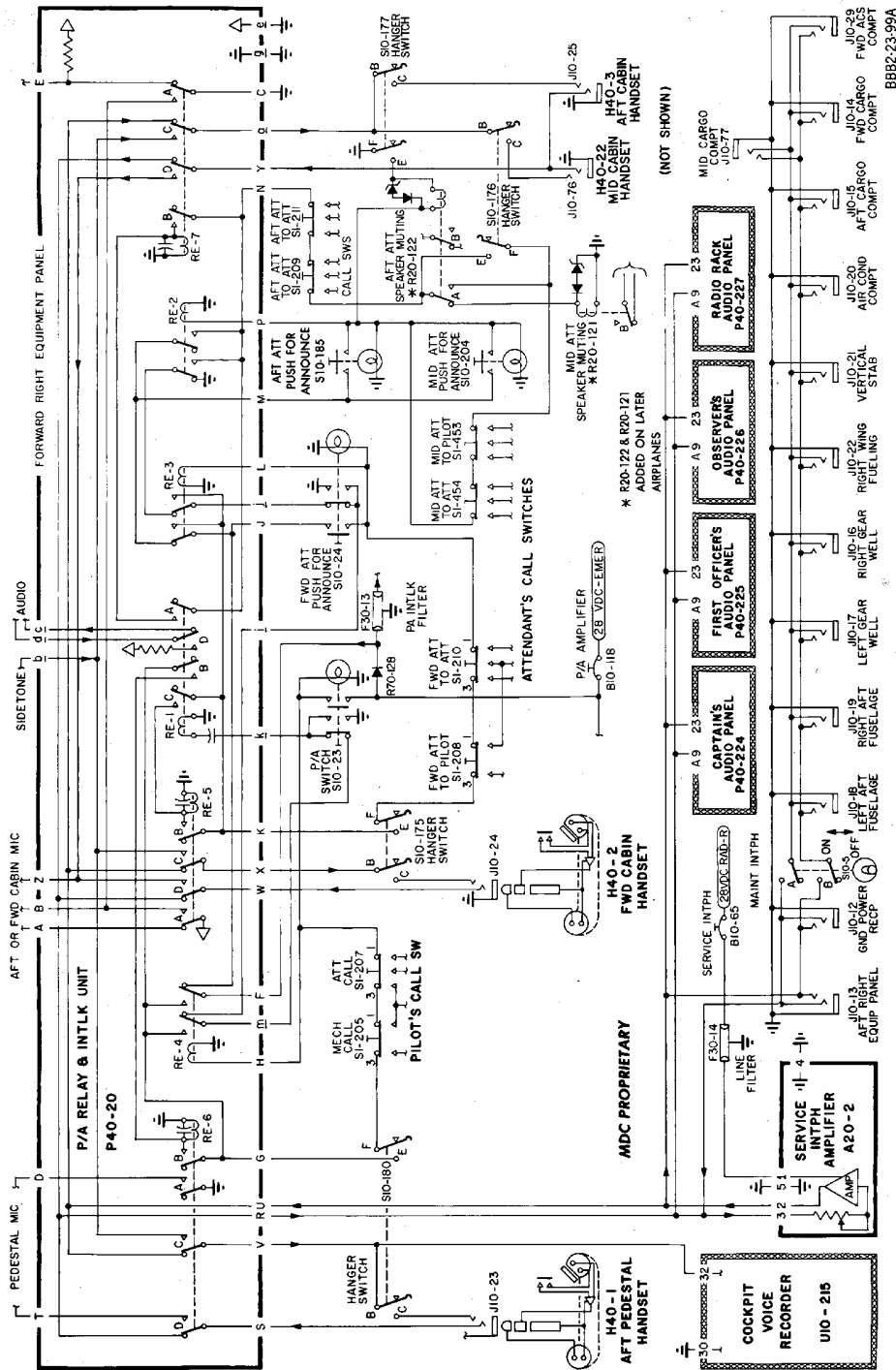
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CAG(IGDS)

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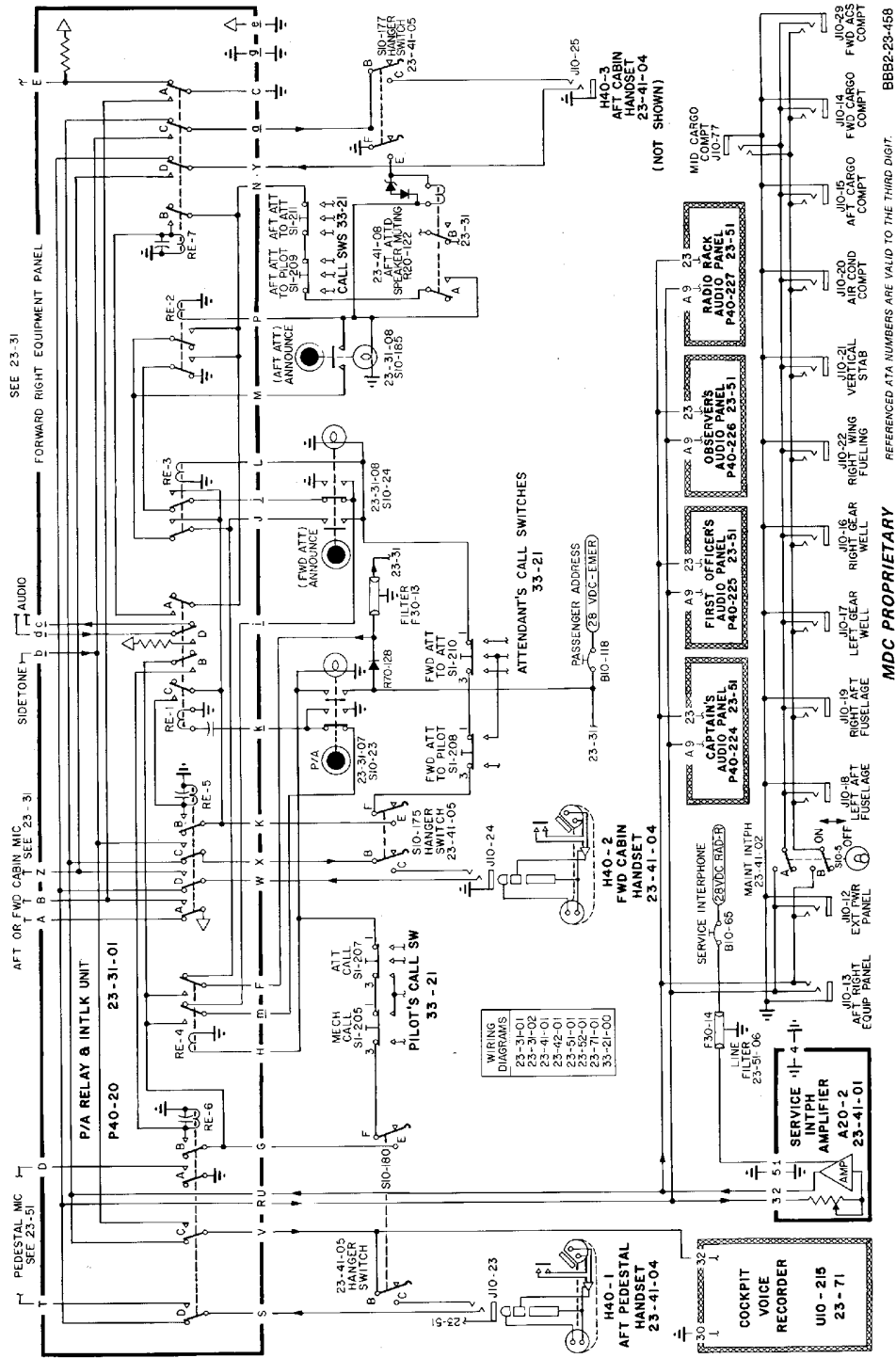


**Cabin and Service Interphone System -- Schematic**  
**Figure 101/23-40-00-990-801 (Sheet 2 of 2)**

**EFFECTIVITY**  
 WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 877, 884, 891

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



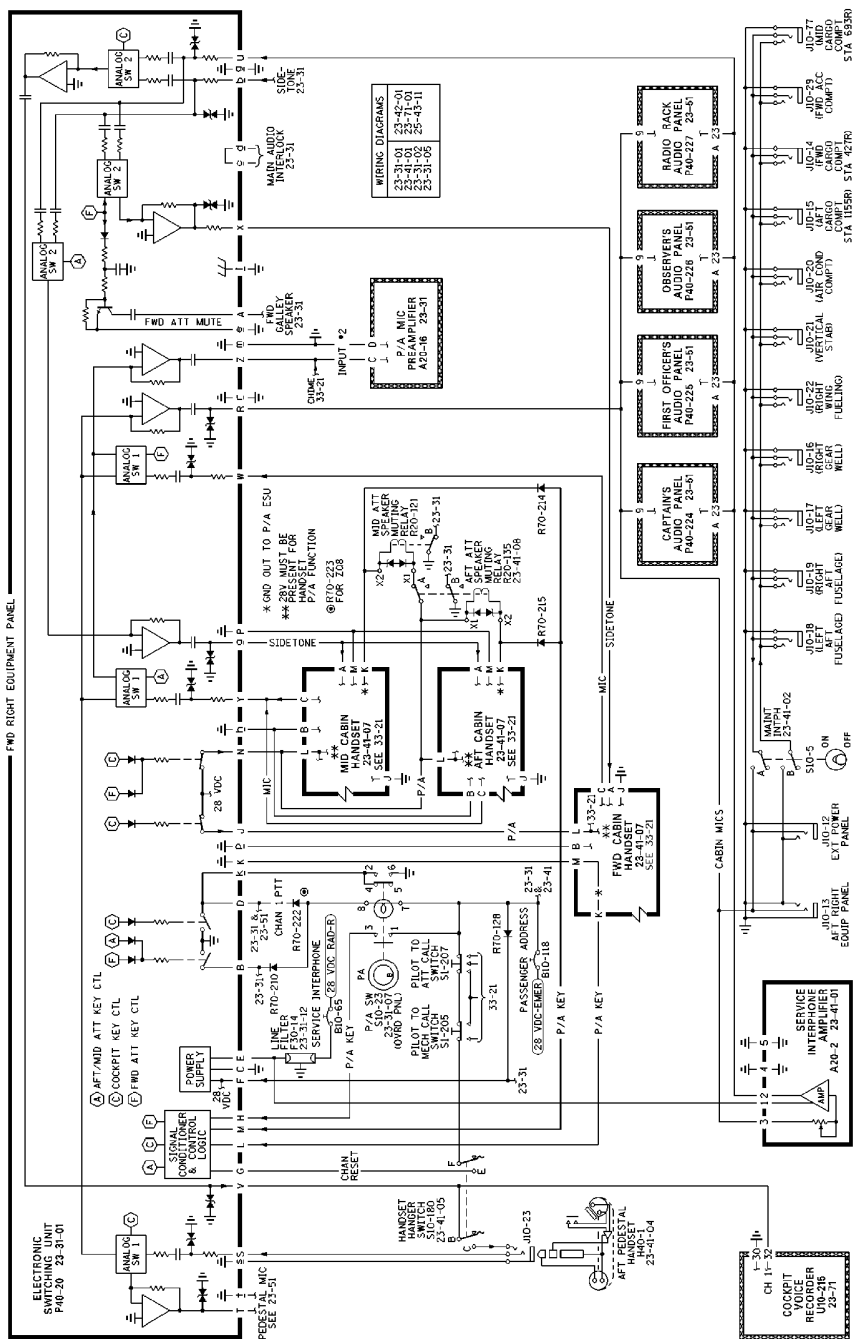
**Cabin and Service Interphone System -- Schematic**  
**Figure 102/23-40-00-990-808 (Sheet 1 of 3)**

EFFECTIVITY  
WJE 880

**23-40-00**

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**Cabin and Service Interphone System -- Schematic  
Figure 102/23-40-00-990-808 (Sheet 2 of 3)**

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EFFECTIVITY  
WJE 886, 887, 892, 893

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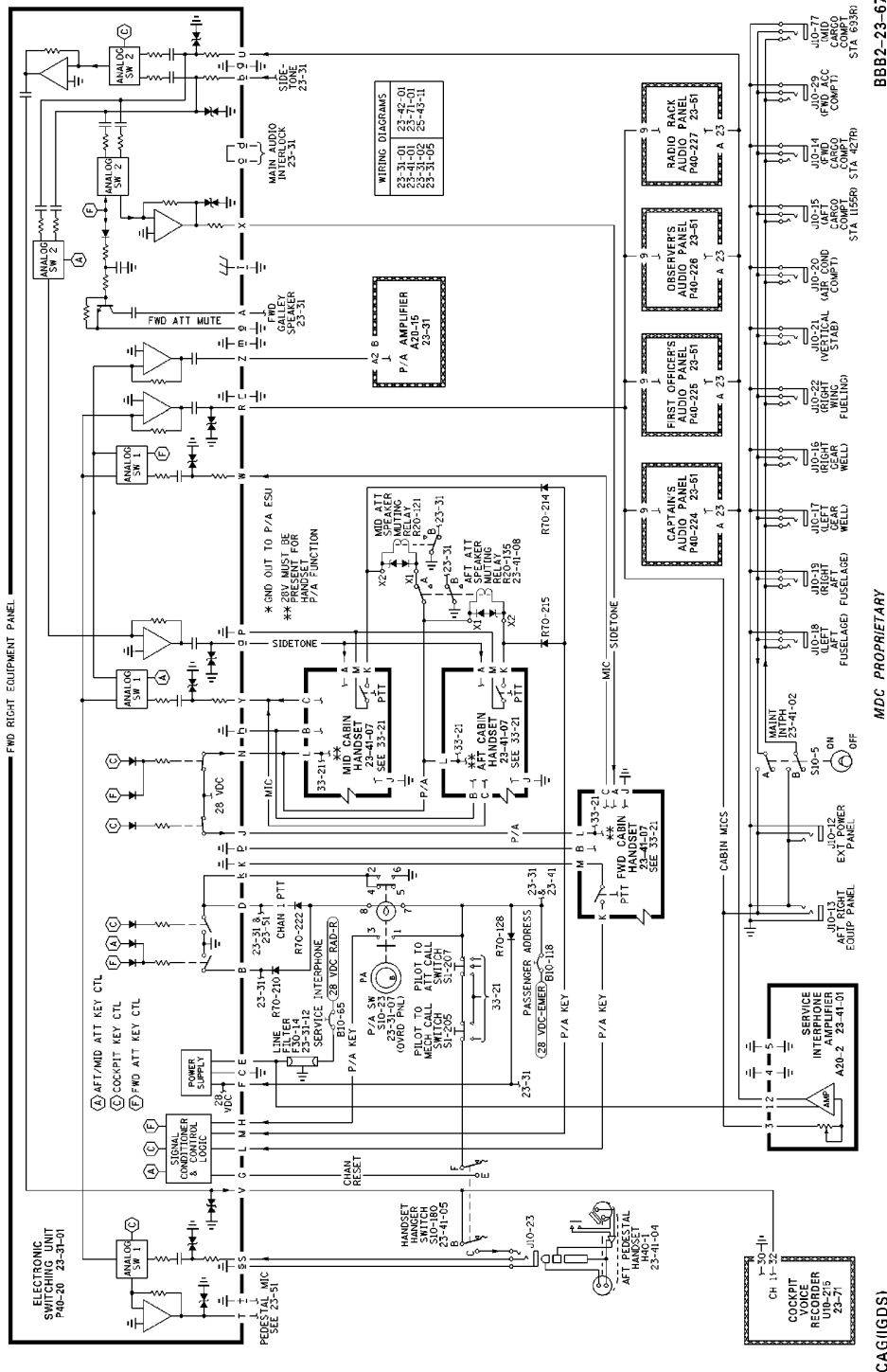
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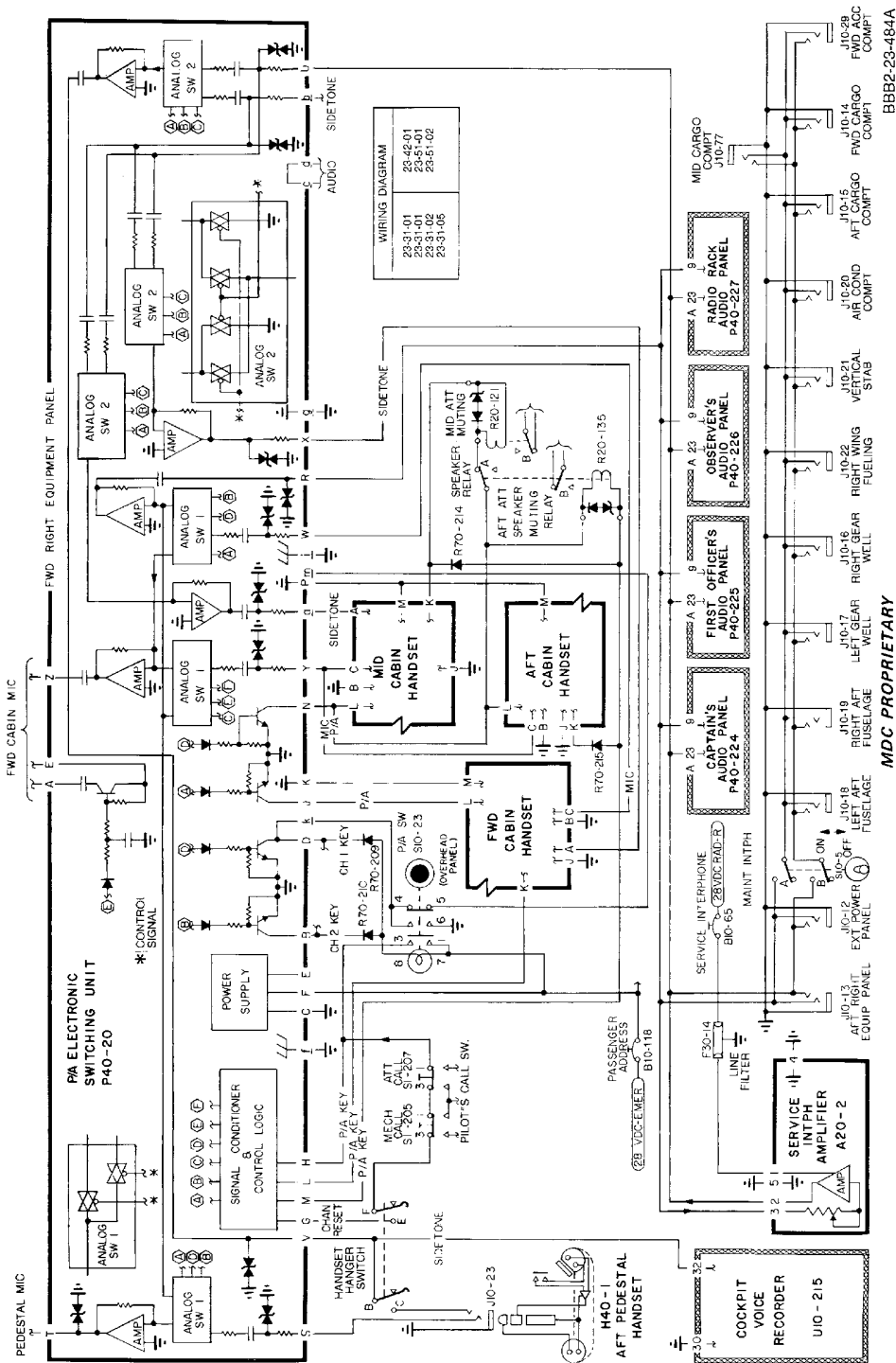


**Cabin and Service Interphone System -- Schematic**  
**Figure 102/23-40-00-990-808 (Sheet 3 of 3)**

EFFECTIVITY  
WJE 875, 876, 878, 879

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Cabin and Service Interphone System -- Schematic  
Figure 103/23-40-00-990-809 (Sheet 1 of 2)

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

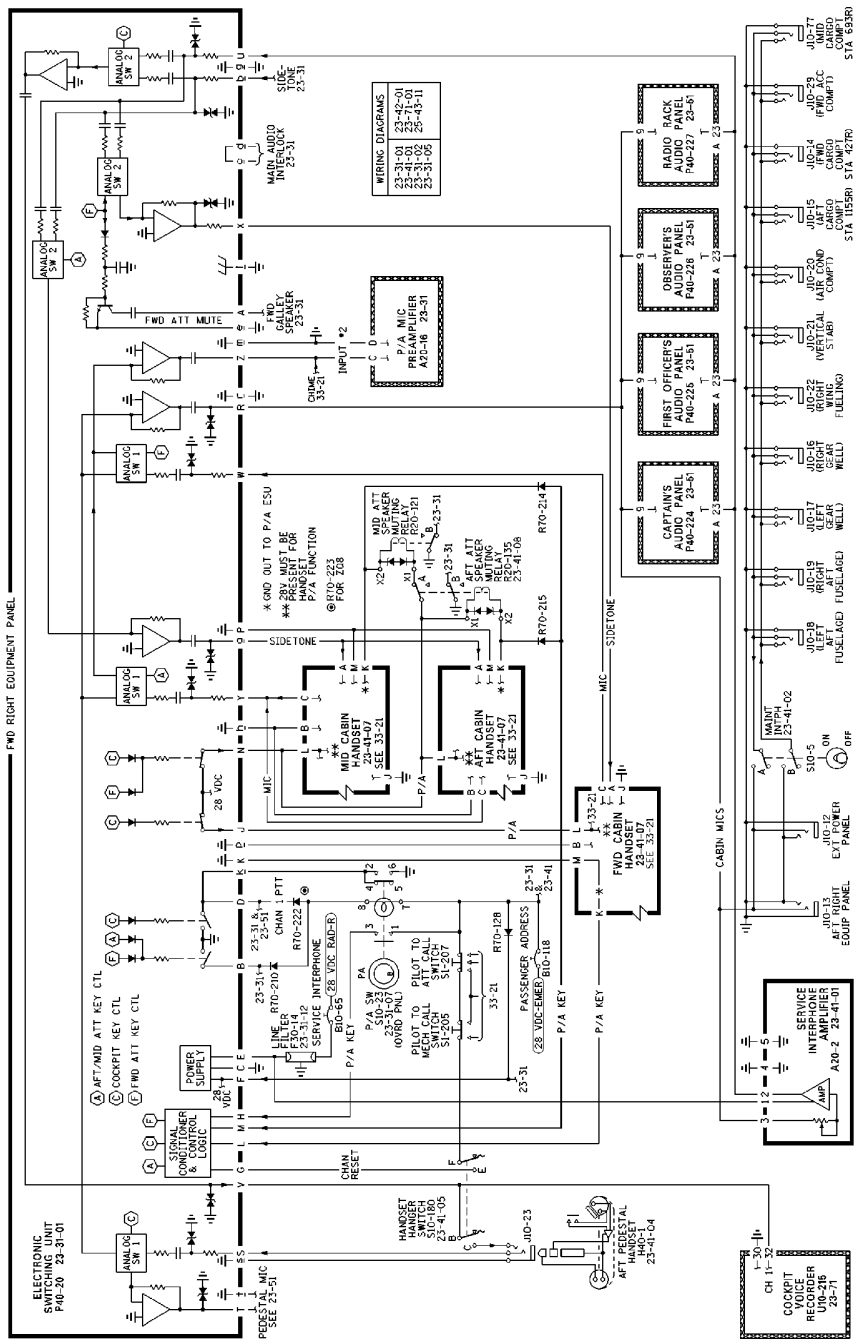
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Cabin and Service Interphone System -- Schematic  
Figure 103/23-40-00-990-809 (Sheet 2 of 2)

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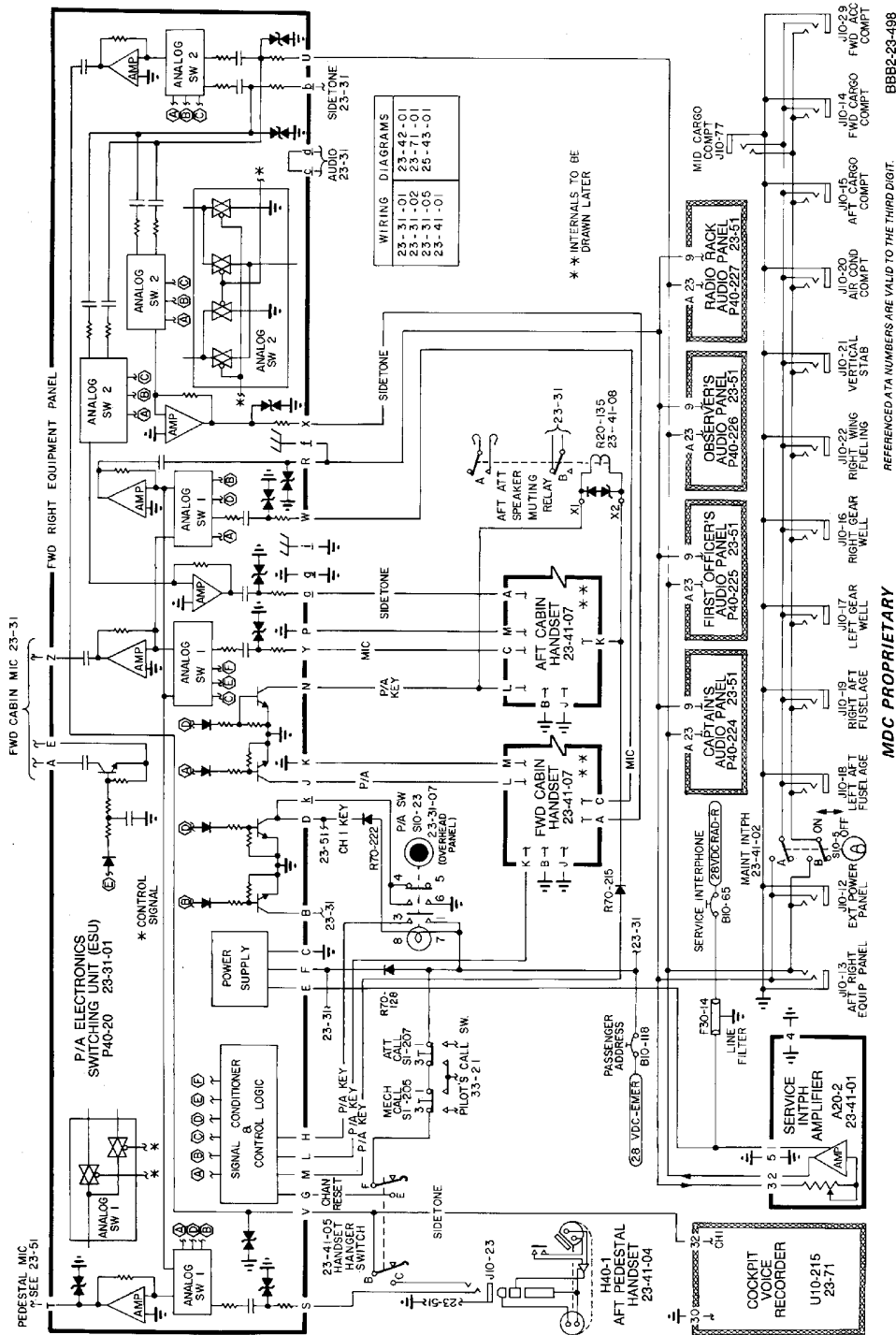
EFFECTIVITY  
WJE 407, 408, 411

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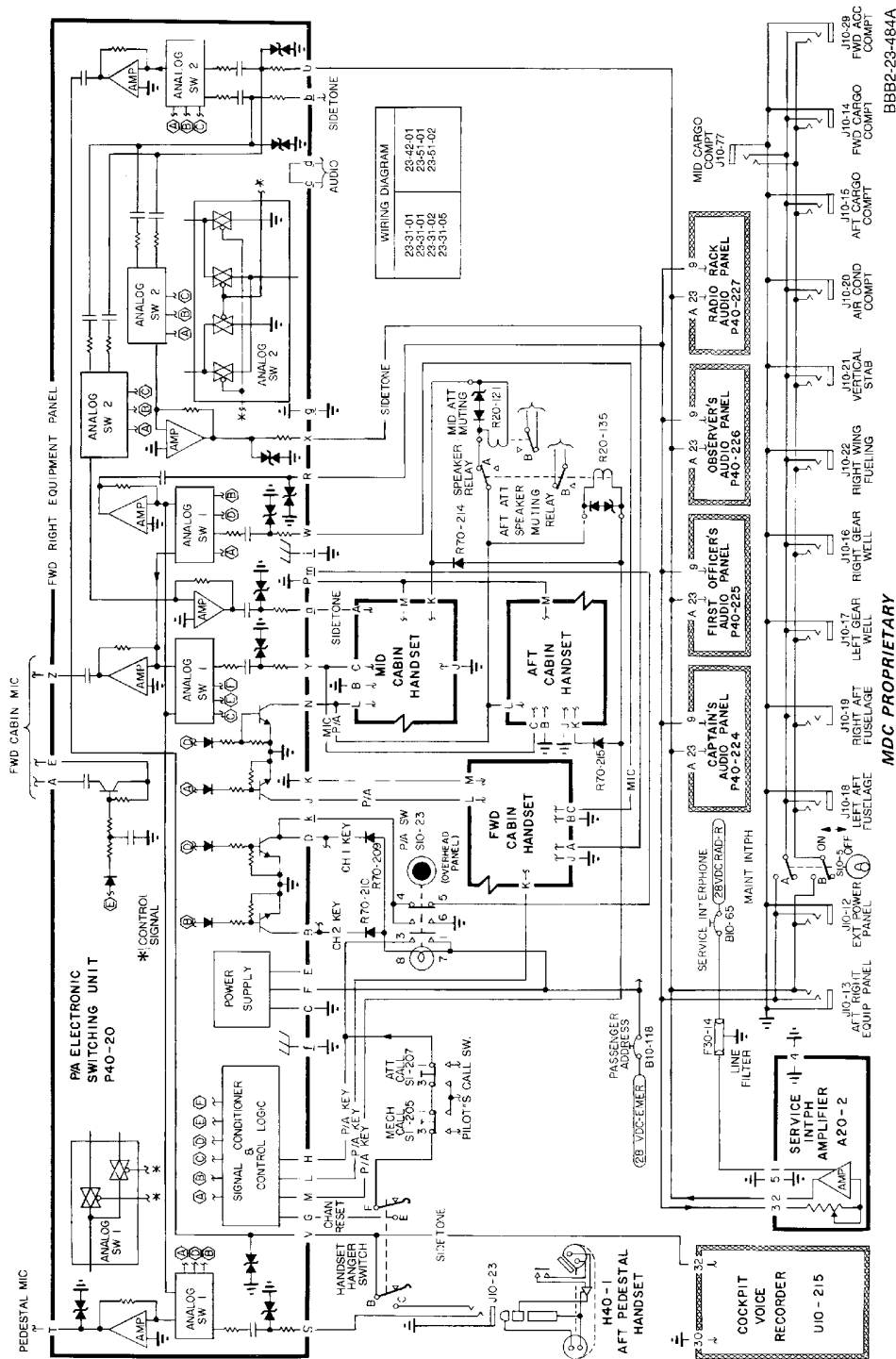
Cabin and Service Interphone System -- Schematic  
Figure 104/23-40-00-990-810

EFFECTIVITY  
WJE 410

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**Cabin and Service Interphone System -- Schematic**  
Figure 105/23-40-00-990-811

EFFECTIVITY  
WJE 406, 881, 883

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### SERVICE INTERPHONE - MAINTENANCE PRACTICES

#### 1. General

##### WJE 886, 887

- A. These maintenance practices provide adjustment/test for the service interphone system. The service interphone amplifier provides amplification for communications between areas where service and maintenance operations are most frequently performed, and between the flight compartment and cabin attendant stations. Service Interphone is also available to each audio panel allowing use of cockpit hand mic's, headsets, boomsets, oxygen mask mic's and overhead speakers for Service Interphone communications. Replace the interphone amplifier if the volume is low and the output cannot be adjusted to a satisfactory level. When a component at any one station is replaced, that station only need be tested.

##### WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

- B. These maintenance practices provide adjustment/test for the service interphone system. The service interphone amplifier provides amplification for communications between areas where service and maintenance operations are most frequently performed, and between the flight compartment and cabin attendant stations. Replace the interphone amplifier if the volume is low and the output cannot be adjusted to a satisfactory level. When a component at any one station is replaced, that station only need be tested.

##### WJE ALL

- C. For service interphone call test. (PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1)

#### 2. Adjustment/Test Service interphone

##### A. Test Service Interphone Jack Outlets

- (1) Place MAINTENANCE INTERPHONE switch, located on overhead switch panel to ON position.
- (2) Establish 2-way communications between aft pedestal handset and a handset connected at service interphone jacks listed below, using handset PTT switches. Communications should be clear and distinct.

Aft right radio rack equipment panel

Ground power receptacle panel

Right main wheelwell

Left main wheelwell

Forward accessory compartment

Forward cargo compartment

Mid cargo compartment

Aft cargo compartment

Fuel maintenance panel, right wing

Left aft fuselage (adjacent to nacelle)

Right aft fuselage (adjacent to nacelle)

Vertical stabilizer

Air conditioning compartment

- (3) Disconnect handset from service interphone jack.

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (4) Place MAINTENANCE INTERPHONE switch, located on overhead switch panel to OFF position.
- (5) Plug handset into jack at ground power receptacle.
- (6) Establish 2-way communications between aft pedestal handset and ground power receptacle jack using handset PTT switches. Communications should be clear and distinct.
- (7) Disconnect handset from ground power receptacle jack.
- (8) Plug handset into jack at avionics compartment.
- (9) Establish 2-way communications between aft pedestal handset and avionics jack, using handset PTT switches. Communications should be clear and distinct.
- (10) Disconnect handset from avionics jack.
- (11) Plug handset into jack at forward cargo compartment.
- (12) Attempt 2-way communication with aft pedestal handset. There should be no communication.

### B. Test Cabin Interphone

- (1) Verify MAINTENANCE INTERPHONE switch, located on overhead switch panel is in OFF position.
- (2) Establish 2-way communications between aft pedestal handset and cabin handsets listed below, using handset PTT switches. Communications should be clear and distinct.
  - Forward attendant panel
  - Intermediate attendant panel
  - Aft attendant panel

### WJE 412, 414

- WJE (3) On the captain's audio control panel (ACP), depress the CAB microphone selector button, and establish 2-way communications between captain's station (using hand mic, headset boom mic, and sweep-on mask mic), and the cabin attendant's handsets listed below. Communications should be clear and distinct, and captain's audio level should correspond to cabin interphone audio level control lever position on the ACP.
- WJE • Forward attendant panel
- WJE • Intermediate attendant panel
- WJE • Aft attendant panel
- WJE (4) On the first officer's audio control panel (ACP), depress the CAB microphone selector button, and establish 2-way communications between F/O's station (using hand mic, headset boom mic, and sweep-on mask mic), and the cabin attendant's handsets listed below. Communications should be clear and distinct, and F/O's audio level should correspond to cabin interphone audio level control lever position on the ACP.
- WJE • Forward attendant panel
- WJE • Intermediate attendant panel
- WJE • Aft attendant panel
- WJE (5) On the observer's audio control panel (ACP), depress the CAB microphone selector button, and establish 2-way communications between observer's station (using hand mic, headset boom mic, and sweep-on mask mic), and the cabin attendant's handsets listed below. Communications should be clear and distinct, and observer's audio level should correspond to cabin interphone audio level control lever position on the ACP.
- WJE • Forward attendant panel

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE**    **WJE 412, 414 (Continued)**

- WJE**
- WJE**                    • Intermediate attendant panel
- WJE**                    • Aft attendant panel

**WJE 886, 887**

C. Test Interphone Audio Integration

NOTE: Tests interphone operation using audio control panels, microphones, headsets and cockpit speakers of audio integrating system.

- (1) On all audio control panels (4): press INT MIC SEL switch, rotate INT CABIN/SERV volume control to mid-range, and place all other switches to off or minimum position.
- (2) On Captain's and First Officer's cockpit speakers, rotate VOL control to mid-range.

NOTE: Volume controls may be re-adjusted as required during tests, to prevent feedback and maintain comfortable listening level.

- (3) Establish 2-way communications between pedestal handset and following stations in turn: Captain's, First Officer's, Observer's and radio rack, using hand-held microphone at each station. Monitor interphone audio at handset, pilot's cockpit speakers, and headphones at Observer and radio rack stations. Communications should be clear and distinct.

**WJE ALL**

D. Test Termination

- (1) Return aircraft to required configuration.

EFFECTIVITY  
WJE ALL

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## SERVICE INTERPHONE AMPLIFIER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and operational test for the service interphone amplifier. The service interphone amplifier is located in the forward right radio rack in the electrical/electronics compartment. Access to the service interphone amplifier is through the compartment lower door.

### 2. Removal/Installation

- A. Remove Service Interphone Amplifier

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Disconnect electrical connector from service interphone amplifier.  
 (3) Loosen captive screws at top of service interphone amplifier case and lift amplifier case from bottom mounting plate.  
 (4) Remove screws securing amplifier bottom mounting plate to bracket.  
 (5) Remove amplifier bottom mounting plate and secure amplifier case to plate with captive screws.

- B. Install Service Interphone Amplifier

**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:

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Loosen captive screws at top of amplifier and remove amplifier case from bottom mounting plate.  
 (3) Place amplifier bottom mounting plate on radio rack bracket and secure with attaching screws.  
 (4) Secure amplifier case with connector facing inboard to amplifier bottom mounting plate with captive screws.  
 (5) Connect electrical connector to service interphone amplifier.  
 (6) Remove the safety tag and close this circuit breaker:

**UPPER EPC, RIGHT RADIO DC BUS**

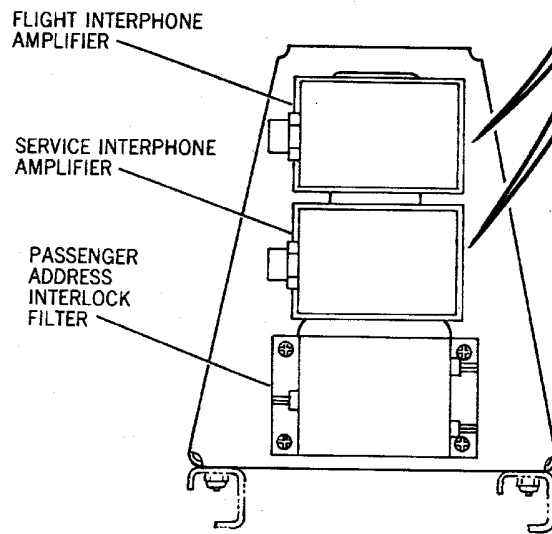
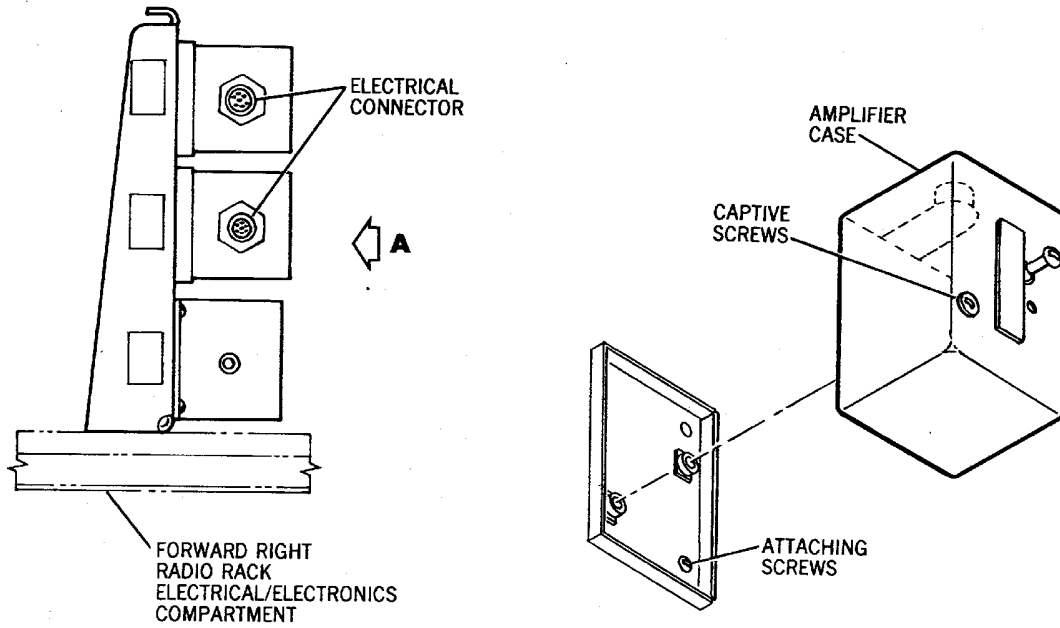
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (7) Check service interphone amplifier output using cabin attendant handsets.  
 (8) Return airplane to required configuration.

EFFECTIVITY  
WJE ALL

**23-40-01**

MD-80  
AIRCRAFT MAINTENANCE MANUAL



**VIEW A**  
VIEW LOOKING FWD

BBB2-23-2A

**Service Interphone Amplifier -- Removal/Installation**  
Figure 201/23-40-01-990-801

EFFECTIVITY  
WJE ALL

**23-40-01**

TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## PILOT'S CALL BELL - MAINTENANCE PRACTICES

### 1. General

- A. The pilot's call bell is located in the forward section of the left console (Figure 201). Access to the call bell is through the adjacent access (trash container). Refer to SERVICE INTERPHONE - TROUBLE SHOOTING, PAGEBLOCK 23-40-00/101 for pilot's call bell trouble shooting procedures.

### 2. Removal/Installation Pilot's Call Bell

- A. Remove Pilot's Call Bell

**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, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Remove access panel.  
 (3) Remove call bell hardware and remove call bell.  
 (4) Tag and disconnect call bell electrical connections.

- B. Install Pilot's Call Bell

**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, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Connect electrical connections as tagged.  
 (3) Position call bell on mounting area and install with attaching hardware.  
 (4) Install access panel.  
 (5) Remove the safety tags and close these circuit breakers:

**LOWER EPC, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### UPPER EPC, RIGHT RADIO DC BUS

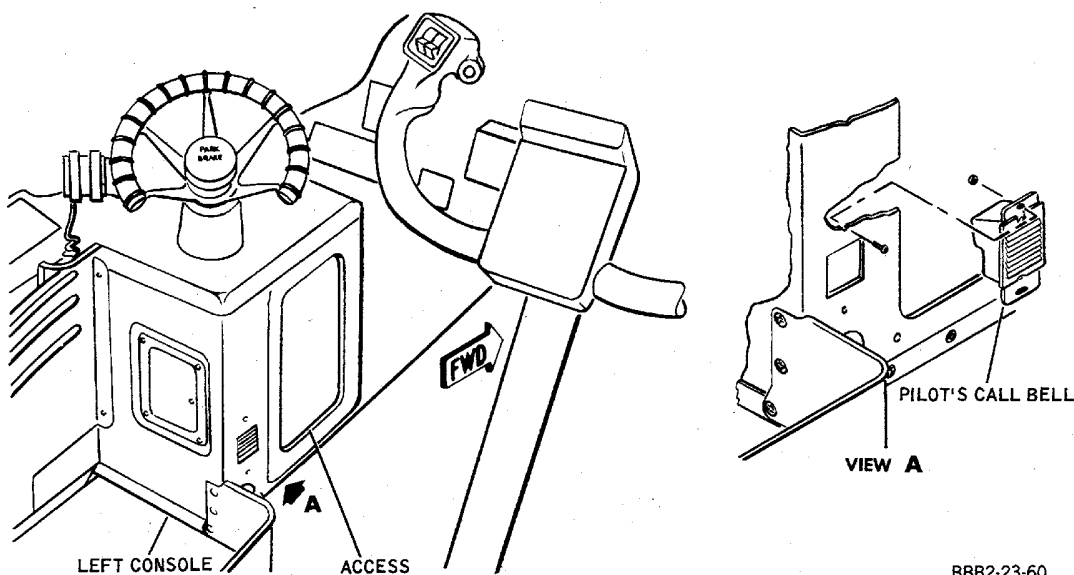
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (6) Perform adjustment/test. (Paragraph 3.A.)
- (7) Return airplane to required configuration.

### 3. Adjustment/Test Pilot's Call Bell

#### A. Test Pilot's Call Bell

- (1) At forward attendant's panel, press pilot's call button. Pilot's call bell should sound.
- (2) At mid attendant's panel, press pilot's call button. Pilot's call bell should sound.
- (3) At aft cabin attendant's panel, press pilot's call button. Pilot's call bell should sound.



**Pilot's Call Bell**  
**Figure 201/23-40-02-990-801**



# MD-80 AIRCRAFT MAINTENANCE MANUAL

## MECHANIC CALL HORN - MAINTENANCE PRACTICES

### 1. General

- A. The mechanic call horn is located in the nose wheelwell on the nose wheelwell transformer panel (Figure 201). For call horn trouble shooting procedures, refer to SERVICE INTERPHONE - TROUBLE SHOOTING, PAGEBLOCK 23-40-00/101.

### 2. Removal/Installation

- A. Remove Call Horn

**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:

**LOWER EPC, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

- (2) In nose wheelwell, remove transformer panel cover. (Figure 201)  
 (3) Remove call horn attaching screws.  
 (4) Remove call horn from transformer panel.  
 (5) Tag and disconnect electrical wires from call horn terminals.

- B. Install Call Horn

**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:

**LOWER EPC, MISCELLANEOUS LEFT DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

- (2) Connect electrical wires to call horn terminals.  
 (3) Position call horn and install with attaching hardware.  
**NOTE:** Drain hole must be on bottom side to prevent accumulation of water in horn housing.  
 (4) Install transformer panel cover.  
 (5) Remove the safety tag and close this circuit breaker:

**LOWER EPC, MISCELLANEOUS LEFT DC BUS**

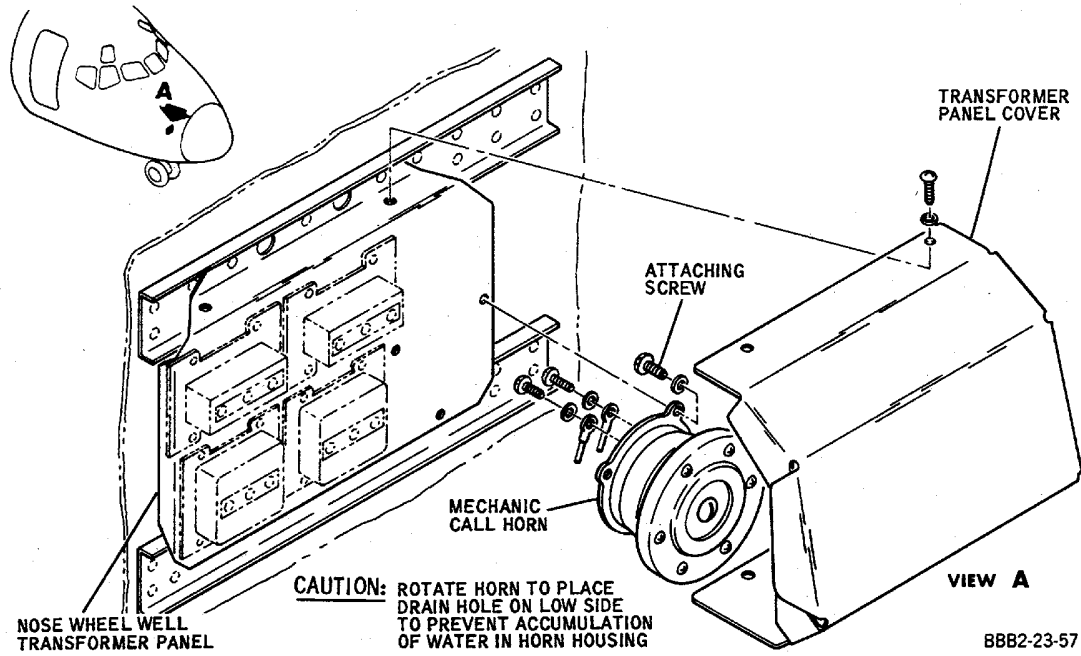
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
P	37	B1-8	CALL SYSTEM

- (6) On overhead switch panel, press MECH CALL pushbutton switch. Mechanic call horn should sound.

EFFECTIVITY WJE ALL	
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23-40-03

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Mechanic Call Horn - Location  
Figure 201/23-40-03-990-801

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

## 23-40-03

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## INTERPHONE HANDSET - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and test procedures for the service interphone/PA handsets. The handsets are located in the flight compartment on the aft pedestal, forward cabin, mid cabin and aft cabin attendant panels.
- B. The service interphone provides interphone communications between the flight compartment and attendant stations.

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- C. Removal/Installation procedures for all cabin attendant handsets are identical.

**WJE ALL**

### 2. Equipment and Materials

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

**Table 201**

Name and Number	Manufacturer
Inconel Lockwire 0.020 in NASM20995N20, DPM 684	Not specified
Corrosion Resistant Steel Lockwire 0.020 in NASM20995C20, DPM 5865	Not specified

### 3. Removal/Installation

- A. Remove Pedestal Handset

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 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.

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

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
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EFFECTIVITY WJE ALL
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23-40-04

## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 410 (Continued)

#### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 877, 880, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

### WJE ALL

- (3) Position first officer's seat to extreme aft position.
- (4) At aft floor step under first officer's seat, disengage fasteners and remove access panel.
- (5) Remove lockwire and clamp from handset electrical connector and disengage connector from jack.
- (6) Tie string to connector and pull handset cord out of storage tube.
- (7) Remove string from connector and leave string through storage tube for ease of installation of handset cord and connector.

#### B. Install Pedestal Handset

**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, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 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.

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

#### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>			
A	8	B10-118	PASSENGER ADDRESS

#### WJE 410

A	9	B10-118	PASSENGER ADDRESS
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#### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 877, 880, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE ALL**

- (3) Tie pull-string to electrical connector and pull connector through storage tube.
- (4) Remove string and insert connector into handset electrical receptacle. Install clamp on connector and safety to prevent connector disengagement during use.
- (5) Secure access panel and return first officer's seat to normal position.
- (6) Remove the safety tag and close this circuit breaker:

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (7) 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>
A	8	B10-118	PASSENGER ADDRESS

**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
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**UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	22	B10-117	PASSENGER ADDRESS

**WJE 410, 877, 880, 886, 887, 892, 893**

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- (8) Perform adjustment/test.(Paragraph 4.)

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- (9) Perform adjustment/test.(Paragraph 5.)

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

- C. Remove Forward Cabin Attendant Handset

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) On forward cabin attendant's panel, disengage fasteners and open hinged panel.
- (3) Disengage handset electrical connector from receptacle.
- (4) Remove and retain split grommet from feed-through in panel.
- (5) Pull handset cord and connector through feed-through and remove handset.

EFFECTIVITY  
WJE ALL

**23-40-04**

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891 (Continued)

D. Install Forward Cabin Attendant Handset

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Insert handset electrical connector through feed-through in panel.
- (3) Pull handset cord through feed-through in panel and connect electrical connector to handset electrical receptacle.
- (4) Place split grommet around handset cord and install grommet in feed-through.
- (5) Place handset in handset hanger.
- (6) Close attendant's panel and secure fasteners.
- (7) Remove the safety tag and close this circuit breaker:

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (8) Perform adjustment/test.(Paragraph 4.)

E. Remove Mid Cabin Attendant Handset

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Remove handset from hanger.  
NOTE: Attendant's handset hanger panel is hinged at bottom. Remove handset from hanger prior to opening panel.
- (3) Remove panel attaching screws from top of attendant handset panel.
- (4) Open hinged panel and disconnect handset electrical connector from receptacle.
- (5) Pull handset cord and connector through panel feed-through and remove handset.

F. Install Mid Cabin Attendant Handset

EFFECTIVITY WJE ALL	
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23-40-04

## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 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.

- (1) Make sure that this circuit breaker is open and has safety tag:

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Insert handset electrical connector through panel feed-through and connect to handset electrical receptacle.
- (3) Close panel and install attaching screws at top of handset panel.
- (4) Place handset in handset hanger.
- (5) Remove the safety tag and close this circuit breaker:

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (6) Perform adjustment/test.(Paragraph 4.)

G. Remove Aft Cabin Attendant Handset

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Remove handset from hanger.
- (3) Remove attaching screws from attendant's panel and separate panel from wall bracket.
- (4) Disconnect handset electrical connector from receptacle.
- (5) Remove and retain grommet from feed-through in panel.
- (6) Pull handset cord and connector through feed-through.

H. Install Aft Cabin Attendant Handset

**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, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Insert handset electrical connector through feed-through in panel and connect to handset electrical receptacle.

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891 (Continued)**

- (3) Place panel on wall bracket and secure with attaching screws.
- (4) Place handset on hanger.
- (5) Remove the safety tag and close this circuit breaker:

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (6) Perform adjustment/test.(Paragraph 4.)

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

- I. Remove Cabin Attendant Handset

**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 DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>			
A	8	B10-118	PASSENGER ADDRESS

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
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**UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 877, 880, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

**UPPER EPC, RIGHT RADIO DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>			
G	8	B10-65	SERVICE INTERPHONE

- (2) On cabin attendant's panel, remove handset from its cradle.
- (3) Remove cradle cover.
  - (a) Get access to the cover attaching allen head screw.
 

**NOTE:** The allen head screw is located approximately 1 in. (25 mm) forward of cradle upper release trigger).

    - 1) Hold cradle upper release trigger down and push retention/release lever (flapper) forward. (Figure 201)
  - (b) Loosen cover attaching captive screw with 1/8 in. (3 mm) allen wrench until it falls free.
  - (c) Pull cover to release it from spring clip retainer (Ref. Figure 201).
- (4) Remove handset cable strain relief clamp to free cable.

EFFECTIVITY  
WJE ALL

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WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893 (Continued)

(5) Disconnect handset electrical connector and remove handset.

J. Install Cabin Attendant Handset

**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 DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

A	8	B10-118	PASSENGER ADDRESS
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WJE 410

A	9	B10-118	PASSENGER ADDRESS
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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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WJE 410, 877, 880, 886, 887, 892, 893

F	22	B10-117	PASSENGER ADDRESS
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### UPPER EPC, RIGHT RADIO DC BUS

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

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

G	8	B10-65	SERVICE INTERPHONE
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(2) Connect handset electrical connector to unit receptacle.

(3) Install handset cable strain relief clamp.

(4) Install cradle cover.

**CAUTION:** FAILURE TO POSITION RETENTION/RELEASE LEVER (FLAPPER) IN UPWARD POSITION CAN RESULT IN DOWNWARD POSITIONED FLAPPER DISLODGING SMALL PERMANENT MAGNET BONDED INSIDE COVER. LOSS OF THIS MAGNET WILL SERIOUSLY DEGRADE PERFORMANCE OF INTERPHONE/PA SYSTEMS.

(a) Push retention/release lever (flapper) forward so it is temporarily restrained by allen head screw. ( Figure 201)

(b) Push on cover to engage spring clip retainer. (Figure 201)

(c) Secure allen head attaching screw and release flapper.

(5) Place handset in its cradle.

(6) 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 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893

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**WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893 (Continued)**

(Continued)

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	8	B10-118	PASSENGER ADDRESS

**WJE 410**

A	9	B10-118	PASSENGER ADDRESS
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### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 410, 877, 880, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893</b>			
G	8	B10-65	SERVICE INTERPHONE

(7) Perform adjustment/test. (Paragraph 5.)

**WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 884, 891**

#### **4. Adjustment/Test Interphone Handset**

##### A. Test Handset

- (1) Remove handset from hanger and actuate press-to-talk switch.
- (2) Speak into mouthpiece and audio communication with flight compartment should be available.
- (3) Release press-to-talk switch and return handset to hanger.
- (4) Return aircraft to required configuration.

**WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-881, 883, 886, 887, 892, 893**

#### **5. Adjustment/Test Interphone Handset**

##### A. Test Handset

- (1) Remove handset from cradle, depress and release PILOT call button and actuate press-to-talk switch.
- (2) Speak into mouthpiece and audio communication with flight compartment should be available.
- (3) Release press-to-talk switch and return handset to cradle.
- (4) Remove handset from cradle, depress and release P/A button and actuate press-to-talk switch.
- (5) Speak into mouthpiece and speech should be heard over aircraft speakers.
- (6) Release press-to-talk switch and return handset to cradle.
- (7) Return aircraft to required configuration.

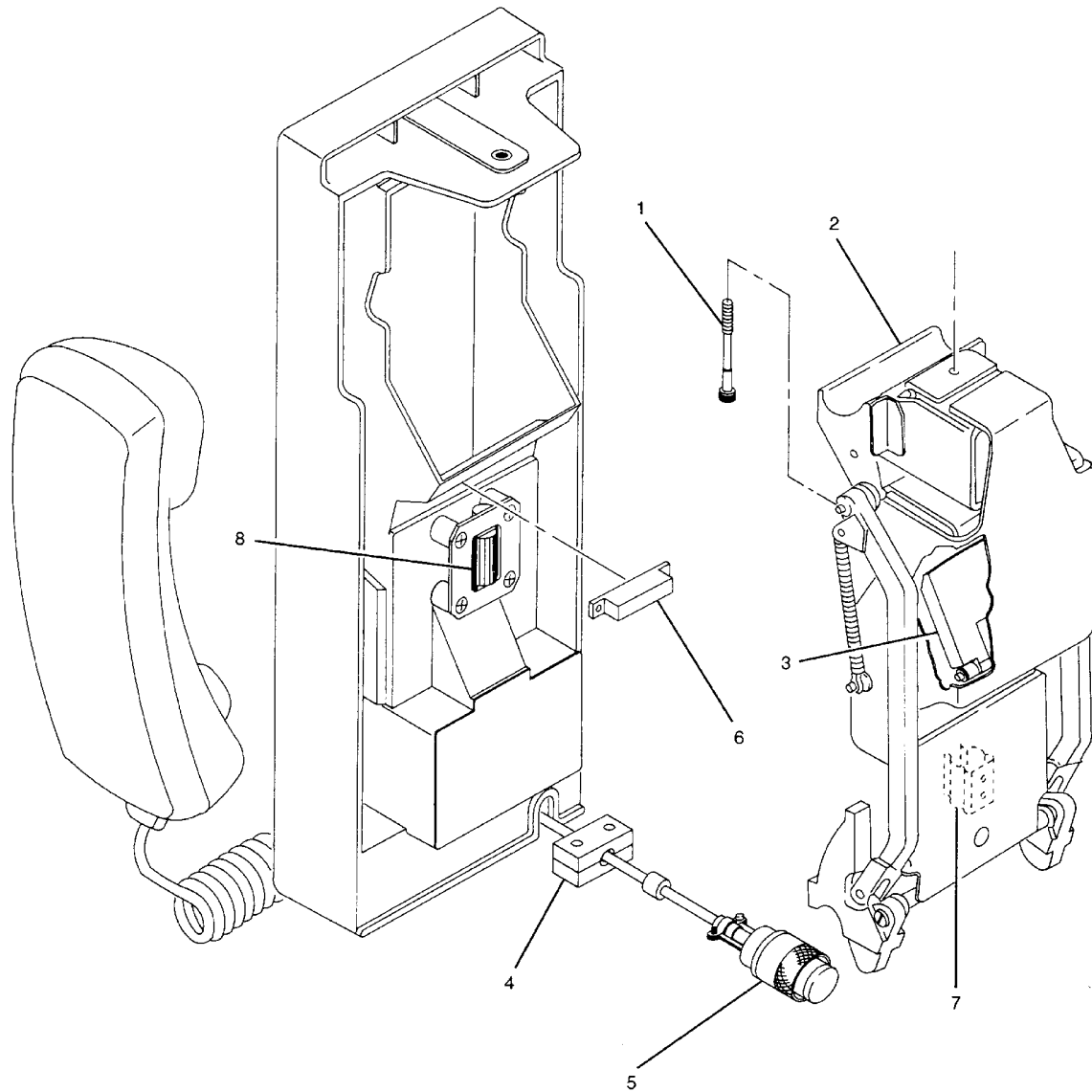
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- |                                      |                              |
|--------------------------------------|------------------------------|
| 1. ALLEN HEAD ATTACHING SCREW        | 5. ELECTRICAL CONNECTOR      |
| 2. CRADLE UPPER RELEASE TRIGGER      | 6. MAGNET                    |
| 3. RETENTION/RELEASE LEVER (FLAPPER) | 7. SPRING CLIP               |
| 4. CABLE STRAIN RELIEF CLAMP         | 8. SPRING CLIP RETAINING PIN |

CAG(IGDS)

BBB2-23-528

**Cradle Cover -- Removal/Installation**  
**Figure 201/23-40-04-990-801**

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WJE 401-404, 406-408, 410-412, 414, 415, 417-419,  
421, 423, 863-866, 869, 871, 872, 875-881, 883, 886,  
887, 892, 893

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### AUDIO INTEGRATING - DESCRIPTION AND OPERATION

#### 1. General

**WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

- A. The audio integrating system provides a means of selecting and monitoring the audio outputs of the communication receivers, navigation receivers, passenger address, and interphone amplifiers into the flight crew headphones and speakers. The system also provides for selection of flight crew microphones as inputs to the communication transmitters and the amplifiers. The flight interphone system, which is part of the audio integrating system, is used for communications between the flight crew members. It includes a handset jack at the ground power receptacle panel. The audio integrating system consists of audio control panels, microphones and headsets, flight compartment speakers with integral amplifiers, flight interphone amplifier, control column wheel push-to-talk switches, and jack panels for microphones and headsets at the flight crew stations.

**WJE 886, 887**

- B. The audio integrating system provides a means of selecting and monitoring the audio outputs of the communication receivers, navigation receivers and interphone amplifiers into the flight crew headphones and speakers. The system also provides for selection of flight crew microphones as inputs to the communication transmitters and the amplifiers. The flight interphone system is used for communications between the flight crew members. It includes a handset jack at the ground power receptacle panel. The cabin interphone system enables communication between cabin attendants, and between cabin and flight compartment. The service interphone system enables communication between stations about the aircraft where maintenance is frequently performed. Interphone systems may be connected as required into the audio integrating system. The audio integrating system consists of audio control panels, microphones and headsets, flight compartment speakers with integral amplifiers, flight interphone amplifier, control wheel push-to-talk switches, and jack panels for microphones and headsets at the pilots' stations. In addition a push-to-talk switch is provided on the observers audio control panel.

**WJE ALL**

#### 2. Audio Integrating System Components

- A. Description

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**WJE 401-412, 414, 873-881, 883, 884, 892, 893**

- (1) Audio Control Panels - The audio control panels provide control for the audio integrating system; panels are located at the captain's, first officer's and observer's stations, and at the radio rack in the electrical/electronics compartment. Each audio control panel contains the following controls: communication receivers, navigation receivers, interphone, passenger address, marker beacon, and automatic direction finding audio volume controls; microphone selector push button switches; and radio/interphone and voice/ident switches. Internally, the panel contains isolation resistors, dual isolation amplifiers, push-to-talk relays, and audio filters. Received audio inputs to the audio control panels are applied through isolation resistors and volume controls to the isolation amplifiers. The isolation resistor in series with each audio input prevents interference between flight crew stations. The signal loss caused by the isolation resistors is compensated for by the isolation amplifiers. One isolation amplifier provides an output to the headset and the voice recorder; the second amplifier drives the cockpit speaker when the audio panel is installed at a pilot's station. The microphone selector switch assembly provides a means of selecting any one of the microphone operating configurations. The selector switch assembly is a seven push button unit that locks each push button as it is pressed and releases any previously actuated push button. Each switch enables microphone audio and control to be supplied to the selected system. Microphone inputs are through each crew member's hand, boom, or oxygen mask microphone jack to his audio control panel. The radio/interphone switch provides control for the boom and mask microphones. The voice/ident switch enables filtering out VOR and ADF tone signals when in VOICE position. VOR and ADF audio is heard unfiltered when the switch is in the IDENT position.

**WJE 886, 887**

- (2) Audio Control Panels - The audio control panels provide control for the audio integrating system; panels are located at the captain's, first officer's and observer's stations, and at the radio rack in the electrical/electronics compartment. Each audio control panel contains the following controls: communication receivers, navigation receivers, interphone, passenger address, marker beacon, and automatic direction finding audio volume controls; microphone selector push button switches; and radio/interphone and voice/ident switches. Internally, the panel contains isolation resistors, an isolation amplifier, push-to-talk relays, and audio filters. Received audio inputs to the audio control panels are applied through isolation resistors and volume controls to the isolation amplifier. The isolation resistor in series with each audio input prevents interference between flight crew stations. The signal loss caused by the isolation resistor is compensated for by the isolation amplifier. The microphone selector switch assembly provides a means of selecting any one of the microphone operating configurations except for the PA system. The selector switch assembly is a six push button unit that locks each push button as it is pressed and releases any previously actuated push button. Each switch enables microphone audio and control to be supplied to the selected system. Microphone inputs are through each crew members jack panel to his audio control panel. The radio/interphone switch provides control for the boom and mask microphones. The voice/ident switch enables filtering out VOR and ADF tone signals when in VOICE position. VOR, ADF and DME audio is heard unfiltered when the switch is in the IDENT position.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 886, 887 (Continued)

- (3) Audio Control Panels - The audio control panels provide control for the audio integrating system; panels are located at the captain's, first officer's and observer's stations, and at the radio rack in the electrical/electronics compartment. Each audio control panel contains the following controls: push-on/push-off/turn-volume type audio selectors for communication, VOR, DME, ADF and marker beacon receivers and for cabin/service and flight interphone systems; push-on/push-off selectors for VOR and ADF voice and range filters; push button selectors to connect microphones to communications transceivers and flight interphone systems; and NORM/ALT isolation amplifier selector toggle switches. Internally, the panel contains isolation resistors, redundant, selectable isolation amplifiers, push-to-talk relays, and an audio filter. The signal loss caused by the isolation resistors is compensated for by the isolation amplifier. The microphone selector switch assembly provides a means of selecting any one of the microphone operating configurations except for the PA system. The selector switch assembly is a six push button unit that locks each push button as it is pressed and releases any previously actuated push button. Each switch enables microphone audio and control to be supplied to the selected system. Microphone inputs are through each crew member's hand, boom or oxygen mask microphone jack to his audio control panel. VOICE and RANGE switches route VOR and ADF signals to the VOICE/RANGE filter. When only the VOICE switch is closed, tone signals are filtered and voice predominates in the audio panel output; when only the RANGE switch is closed, voice is filtered and range signals are predominant; when both switches are closed, or both are open, both range and voice signals are heard unfiltered in the output.

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

- (4) Microphones - The microphones used with the audio integrating system are hand-held microphones, boom microphones, and oxygen mask microphones. Hand-held microphones with push-to-talk switches are provided at all flight crew stations. Boom microphone jacks are located at the captain's and first officer's stations. Oxygen mask microphone jacks are provided at all flight crew stations. A microphone jack is also located on the radio rack in the electrical/electronics compartment.

### WJE 401-412, 414, 875-881, 883, 884

- (5) Microphones - The microphones used with the audio integrating system are hand-held microphones, boom microphones, and oxygen mask microphones. Hand-held microphones with push-to-talk switches are provided at captain's and observer's position. Boom microphone jacks are located at the captain's and first officer's stations. Oxygen mask microphone jacks are provided at all flight crew stations. A microphone jack is also located on the radio rack in the electrical/electronics compartment.

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

- (6) Microphones - The microphones used with the audio integrating system are hand-held microphones, boom microphones, and oxygen mask microphones. Hand-held microphones with push-to-talk switches are provided at all flight crew stations. Boom microphones are located at the captain's and first officer's stations. Microphone jacks are provided on jack panels at all flight crew stations. A microphone jack is also located on the radio rack in the electrical/electronics compartment.

### WJE ALL

- (7) Communication Headsets - Boom microphone/headsets are provided for the jack panels at the captain's and first officer's stations. A headset is provided for the jack panel at the observer's station.

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**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

- (8) Speakers - Flight compartment speakers with integral amplifiers provide the captain and first officer with a means of monitoring the audio integrating system without using headsets. The speakers are located at the captain's and first officer's stations. Each speaker contains a transistorized audio amplifier, a volume control, and a muting circuit. The speaker output is controlled through the volume control. The push-to-talk switch at either pilots station mutes both speakers. The speakers are muted to prevent feedback to the microphone.

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

- (9) Speakers - Flight compartment speakers with integral amplifiers provide the captain and first officer with a means of monitoring the audio integrating system without using headsets. The speakers are located at the captain's and first officer's stations. Each speaker contains a transistorized audio amplifier, a volume control, and a muting circuit. The speaker output is controlled through the volume control. The muting circuit is enabled by the associated station push-to-talk switches, and mutes the speakers to prevent feedback to the microphone.

**WJE 886, 887**

- (10) Speakers - Flight compartment speakers with integral amplifiers provide the captain and first officer with a means of monitoring the audio integrating system without using headsets. The speakers are located at the captain's and first officer's stations. Each speaker contains a transistorized audio amplifier, a volume control, and a muting circuit. The speaker output is controlled through volume controls on the speaker and the audio panel. The muting circuit is enabled by the push-to-talk switches, and mutes the speakers to prevent feedback to the microphone.

**WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893**

- (11) Control Wheel Switches - The control wheel push-to-talk (PTT) switches on the captain's and first officer's control columns provide control of the boom or oxygen mask microphones for the system selected on the associated audio control panel.

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

- (12) Control Wheel Switches - The control wheel radio/interphone switches on the captain's and first officer's control columns control the push-to-talk relays in the associated audio control panel. The relays provide microphone control for the boom or oxygen mask microphone to the system selected on the associated audio control panel.

**WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893**

- (13) Jack Panels - Jack panels located at the captain and first officer stations provide the means of connecting the boom microphone/headset to the audio integrating system. A BOOM-MASK switch on the jack panel permits selection of the desired microphone. A NORMAL-MASK PA switch, when held in MASK PA position, permits direct passenger address through the mask microphone and PA system. The switch is spring-loaded to the NORMAL position. The captain's MASK PA has priority over first officer's. Separate from the jack panels, individual headset jacks, and oxygen mask and hand-held microphone jacks also are located at each crew members station.

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

- (14) Jack Panels - Jack panels located at the captain, first officer, and observer stations provide the means of connecting the boom microphone/headset, the oxygen mask microphone, the hand-held microphone, and an individual headset to the integrating system. Separate from the jack panels, individual headset jacks and hand-held microphone jacks also are located at each crew members station.

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**WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 (Continued)**

- (15) Oxy Mask Mike Switches - One of these switches is located on each pilot's console. The switches have two positions, NORM and PA, and are spring-loaded to the NORM position. When in NORM, each switch connects the pilot's boom or mask microphone audio to his audio control panel. While held to the PA position, the switch connects boom or mask microphone audio to the PA amplifier No. 1 input, and also supplies an electrical ground to key the amplifier and to enable the PA level monitor in the SELCAL/PA LEVEL panel on the pedestal. In PA position, the captain's switch has priority over the first officer's switch.

**WJE ALL**

**B. Operation**

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

- (1) For interphone operation, on the applicable station audio control panel the interphone microphone selector switch is pressed and the interphone audio volume control is adjusted to the mid-position. Pressing a push-to-talk switch at either pilot's station mutes both flight compartment speakers. Microphone push-to-talk switches associated with the observer's and electrical/electronics compartment stations do not mute the flight compartment speakers. Microphone audio is routed through the interphone selector switch to the flight interphone amplifier. The amplified audio is routed back to the isolation amplifiers in the audio panels. Isolation amplifier outputs are routed to the associated headset and flight compartment speaker at the pilot's stations.

**WJE 873, 874, 892, 893**

- (2) For interphone operation, on the applicable station audio control panel the interphone microphone selector switch is pressed and the interphone audio volume control is adjusted to the mid-position. Pressing a push-to-talk switch at either pilot's station mutes the flight compartment speaker at that station. Microphone push-to-talk switches associated with the observer's and electrical/electronics compartment stations do not mute the flight compartment speakers. Microphone audio is routed through the interphone selector switch to the flight interphone amplifier. The amplified audio is routed back to the isolation amplifiers in the audio panels. Isolation amplifier outputs are routed to the associated headset and flight compartment speaker at the pilot's stations.

**WJE 886, 887**

- (3) For interphone operation, on the applicable station audio control panel the INT (interphone) microphone selector switch is pressed, the FLT INT or INT CABIN/SERV audio selector switch pressed to on, and adjusted to the desired volume. Pressing a push-to-talk switch at either pilot's station mutes the associated flight compartment speaker. Microphone push-to-talk switches associated with the observer's and electrical/electronics compartment stations do not mute the flight compartment speakers. Microphone audio is routed through the interphone selector switch to the flight or service interphone amplifier. The amplified audio is routed back to the isolation amplifiers in the audio panels. Isolation amplifier output is routed to the associated headset (and flight compartment speaker at the pilots' stations).

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

- (4) For radio operation, the applicable transmitter microphone selector switch is pressed and the applicable audio volume control is adjusted to the mid-position. Pressing a push-to-talk switch at either pilot's station mutes both flight compartment speakers. Observer and electrical/electronics compartment push-to-talk switches do not mute the flight compartment speakers. Audio is routed through the applicable microphone selector switch, and from the audio control panel, is applied to the selected communication transmitter. Simultaneously an electrical ground is supplied by the microphone push-to-talk switch, to key the selected transmitter. Transmitter sidetone from the operating transmitter is routed through the audio control panel to the headset (or pilot's speaker) associated with the microphone station in use.

### WJE 886, 887

- (5) For radio operation, the applicable transmitter microphone selector switch is pressed, the applicable audio selector switch pressed to on, and adjusted to the desired volume. Pressing a push-to-talk at either pilot's station switch mutes the flight compartment speakers. Observer and electrical/electronics compartment push-to-talk switches do not mute the flight compartment speakers. Audio is routed through the applicable microphone selector switch, and from the audio control panel, is applied to the selected communication transmitter. Simultaneously an electrical ground is supplied by the microphone push-to-talk switch, to key the selected transmitter. Transmitter sidetone from the operating transmitter is routed through the audio control panel to the headset (or pilot's speaker) associated with the microphone station in use.

### WJE 873, 874, 892, 893

- (6) For radio operation, the applicable transmitter microphone selector switch is pressed and the applicable audio volume control is adjusted to the mid-position. Pressing a push-to-talk switch at either pilot's station mutes the flight compartment speaker at that station. Observer and electrical/electronics compartment push-to-talk switches do not mute the flight compartment speakers. Audio is routed through the applicable microphone selector switch, and from the audio control panel, is applied to the selected communication transmitter. Simultaneously an electrical ground is supplied by the microphone push-to-talk switch, to key the selected transmitter. Transmitter sidetone from the operating transmitter is routed through the audio control panel to the headset (or pilot's speaker) associated with the microphone station in use.

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

- (7) For passenger address from a pilot's station, the OXY MASK MIKE switch on the left or right console is placed in the PA position. The switch then keys the PA amplifier and microphone input is through the mask or boom microphone. PA sidetone may be monitored by placing the PA volume control, on the audio control panel, to a suitable position.

### WJE 401-412, 414, 873-881, 883, 884, 892, 893

- (8) For passenger address from a pilot's station, the PA microphone selector on the audio panel is pressed, and the PA volume control placed to mid-position. If mask or boom microphone is to be used, the selection is made with the BOOM-MASK switch on the pilot's jack panel. Pressing the control wheel push-to-talk switch or holding the audio panel RADIO/INT switch to RADIO position, keys the PA amplifier through the audio control panel. As the pilot speaks, PA sidetone is returned to the flight crew headsets and pilots' speakers through the audio control panels. In similar manner, the pilots' and observer's hand-held microphones may be used for passenger address. In emergency or as required, pilots may address passengers through the oxygen mask microphone by holding the NORMAL-MASK PA switch on the jack panel to MASK PA position and speaking into mask microphone. The switch keys the PA amplifier and routes mask microphone audio directly to the amplifier input.

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### WJE 886, 887

- (9) To monitor audio inputs to the audio control panels, the audio selector switch for the system to be monitored is pressed to switch on, and the volume adjusted as required. Audio from the selected system is applied to the audio integrating system through the audio panel isolation resistors and volume control to the isolation amplifier. Isolation amplifier output is applied to headsets at the associated station. To monitor audio output through the flight compartment speakers, press audio panel SPKR switch to turn speaker on, and position volume controls on audio panel and speaker for a comfortable listening level.

### WJE 401-412, 414, 873-881, 883, 884, 892, 893

- (10) To monitor audio inputs to the audio control panels, the volume control for the system to be monitored is adjusted as required. Audio from the selected system is applied to the audio integrating system through the audio panel isolation resistors and volume control to the isolation amplifiers. Isolation amplifier outputs are applied to headsets at the associated station. To monitor audio output through the flight compartment speakers, select the system inputs as before. Position the speaker volume control for a comfortable listening level.

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

- (11) To monitor audio inputs to the audio control panels, the volume control for the system to be monitored is placed in the mid-position. Audio from the selected system is applied to the audio integrating system through the audio panel isolation resistors and volume controls to the isolation amplifier. Isolation amplifier output is applied to headsets at the associated station. To monitor audio output through the flight compartment speakers, select the system inputs as before. Position the speaker volume control for a comfortable listening level.

#### C. To Operate System

- (1) To Operate Interphone Using Hand-held Microphone  
 (a) Place controls to positions indicated.

**Table 1**

Control	Position
Audio control panel INT microphone selector switch	Actuated
Audio panel INT volume control	Mid-position
Pilot's console OXY MASK MIKE switch	NORM
Flight compartment speakers volume control	Mid-position
Microphone push-to-talk switch	Pressed

- (b) Speak into microphone.  
 1) Adjust INT volume control for comfortable audio level in headset.  
 2) Adjust speaker volume control for comfortable audio level without feedback.
- (2) To Operate Radio Using Hand-held Microphone  
 (a) Place controls to positions indicated.

**Table 2**

Control	Position
Audio control panel, desired transmitter microphone selector switch	Actuated

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

**Table 2 (Continued)**

Control	Position
Audio panel volume control, desired receiver	Mid-position
Pilot's console OXY MASK MIKE switch	NORM
Flight compartment speakers volume control	Mid-position
Microphone push-to-talk switch	Pressed

- (b) Speak into microphone.
  - 1) Adjust INT volume control for comfortable audio level in headset.
  - 2) Adjust speaker volume control for comfortable audio level without feedback.
- (3) To Operate Interphone Using Boom to Mask Microphone
  - (a) Place controls to positions indicated.

**Table 3**

Control	Position
Audio control panel INT volume control	Mid-position
Audio panel microphone selector switches	Any (no effect)
Flight compartment speakers volume controls	Mid-position
RADIO/INTER switch (Audio panel or pilot's control wheel)	INTER
Pilot's console OXY MASK MIKE switch	NORM

- (b) Speak into boom or mask microphone.
  - 1) Adjust INT volume control for comfortable audio level in headset.
  - 2) Adjust speaker volume control for comfortable audio level without feedback.
- (4) To Operate Radio Using Boom or Mask Microphone
  - (a) Place controls to positions indicated.

**Table 4**

Control	Position
Audio control panel, desired transmitter microphone selector switch	Actuated
Audio control panel, desired receiver volume control	Mid-position
Flight compartment speakers volume controls	Mid-position
RADIO/INTER switch (Audio panel or pilot's control wheel)	RADIO
Pilot's console OXY MASK MIKE switch	NORM.

- (b) Speak into boom or mask microphone.
  - 1) Adjust applicable receiver volume control for comfortable audio level in headset.
  - 2) Adjust speaker volume control for comfortable audio level without feedback.
- (5) To Operate Passenger Address using Boom or Mask microphone.

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

- (a) Place controls to position indicated.

**Table 5**

Control	Position
Audio control panel PA volume control	Mid-position
Flight compartment speakers volume control	Mid-position
Pilot's console OXY MASK MIKE switch	PA.

- (b) Speak into boom or mask microphone.
- 1) Adjust PA volume control for comfortable audio level in headset.
  - 2) Adjust speaker volume control for comfortable audio level without feedback.

WJE 401-412, 414, 873-881, 883, 884, 892, 893

D. To Operate System

- (1) To Operate Flight Interphone Using Hand-held Microphone

- (a) Place controls to positions indicated.

**Table 6**

Control	Position
Audio control panel:	
INT microphone selector button	Pressed
INT volume control	Mid-position
Pilot's jack panel:	
BOOM-MASK switch	Either (no effect)
NORMAL-MASK PA switch	NORMAL
Flight compartment speakers VOL control	Mid-position
Microphone push-to-talk (PTT) switch	Pressed

- (b) Speak into microphone.
- 1) Adjust audio panel INT volume control for comfortable audio level in headset.
  - 2) Adjust speaker VOL controls for comfortable audio level without feedback.
- (2) To Operate Radio Using Hand-held Microphone
- (a) Place controls to positions indicated.

**Table 7**

Control	Position
Audio control panel:	
Microphone selector button, for desired system	Pressed
Volume control for desired system	Mid-position
Pilot's jack panel:	
BOOM-MASK switch	Either (no effect)

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-412, 414, 873-881, 883, 884, 892, 893 (Continued)

**Table 7 (Continued)**

Control	Position
NORMAL-MASK PA switch	NORMAL
Flight compartment speakers VOL control	Mid-position
Microphone PTT switch	Pressed

- (b) Speak into microphone.
  - 1) Adjust audio panel system volume control for comfortable audio level in headset.
  - 2) Adjust speaker VOL control for comfortable audio level without feedback.
- (3) To Operate Flight Interphone Using Boom or Mask Microphone
  - (a) Place controls to positions indicated.

**Table 8**

Control	Position
Audio control panel:	
INT microphone selector button	Pressed
INT volume control	Mid-position
Pilot's jack panel:	
BOOM-MASK switch	Boom or Mask as required
NORMAL-MASK PA switch	NORMAL
Flight compartment speakers VOL controls	Mid-position
PTT switch (pilot's control wheel)	Pressed
or	
RADIO/INT switch (audio panel)	INT

- (b) Speak into boom or mask microphone.
  - 1) Adjust audio panel INT volume control for comfortable audio level in headset.
  - 2) Adjust speaker VOL control for comfortable audio level without feedback.
- (4) To Operate Radio Using Boom or Mask Microphone
  - (a) Place controls to positions indicated.

**Table 9**

Control	Position
Audio control panel:	
Microphone selector button, for desired system	Pressed
Volume control for desired system	Mid-position
Pilot's jack panel:	
BOOM-MASK switch	Boom or Mask as required
NORMAL-MASK PA switch	NORMAL

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-412, 414, 873-881, 883, 884, 892, 893 (Continued)

**Table 9 (Continued)**

Control	Position
Flight compartment speakers VOL control	Mid-position
PTT switch (pilot's control wheel)	Pressed
or	
RADIO/INT switch (audio panel)	Pressed

- (b) Speak into boom or mask microphone.
  - 1) Adjust audio panel system volume control for comfortable audio level in headset.
  - 2) Adjust speaker VOL control for comfortable audio level without feedback.
- (5) To Operate Passenger Address using Boom or Mask microphone.
  - (a) Place controls to position indicated.

**Table 10**

Control	Position
Audio control panel:	
PA microphone selector button	Pressed
PA volume control	Mid-position
Pilot's jack panel:	
BOOM-MASK switch	Boom or Mask as required
NORMAL-MASK PA switch	NORMAL
Flight compartment speakers VOL control	Mid-position
PTT switch (pilot's control wheel)	Pressed
or	
RADIO/INT switch (audio panel)	Pressed

- (b) Speak into boom or mask microphone.
 

NOTE: During passenger address through the audio control panel, PA sidetone will be at a preset level in the headset at the addressing station, and both pilot's speakers will be muted.
- (6) To Operate Passenger Address Using Hand Microphone
  - (a) Set audio panel controls as for boom or mask microphone.
  - (b) Use microphone PTT switch instead of control wheel PTT or RADIO/INT switch on audio panel.
- (7) Emergency Operation of Passenger Address Using Mask Microphone
  - (a) On pilot's jack panel, place and hold NORMAL-MASK PA switch to PA position.
  - (b) Speak into mask microphone and verify quality of sidetone in headset. PA sidetone shall be heard in headsets and pilots' speakers shall be muted.
  - (c) Release MASK PA switch to NORMAL position.

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL  
AUDIO INTEGRATING - TROUBLE SHOOTING**

**1. General**

- A. Trouble Shooting procedures described in this section are basic for isolating and correcting faults in the Audio Integrating system in the aircraft.
- B. The basic causes of faulty system operation are usually faulty aircraft wiring or faulty Line Replaceable Unit (LRU).
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.
- D. The major components of the system are: the audio control panels, flight crew's jack panels, pilot's speaker/amplifiers, flight interphone amplifier, and associated microphones, headsets, and push-to-talk switches. The system interfaces with: the VHF communication transceivers, VHF navigation receivers, DME interrogators, ADF receivers, marker beacon receiver, captain's radio altimeter, cockpit voice recorder, and the passenger address system. Trouble Shooting may require making checks in an interfacing system.
- E. The system components are located as follows:

**Table 101**

Component	Location
Audio Control Panels (4)	Captain's, First Officer's and observer's consoles, and aft right equipment panel in the E/E compartment.
Speaker/Amplifiers	Overhead at Captain's and First Officer's stations.
Jack Panels	Captain's, First Officer's and observer's consoles.
Flight Interphone Amplifier	Shelf 1, forward right radio rack, E/E compartment.
Radio/Interphone Switches	Outboard horn Captain's and First Officer's control wheels.
Oxy Mask Mike Switches	Captain's and First Officer's consoles.

F. Circuit Breaker Locations

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

WJE ALL

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used in place of the following listed item.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 102**

Name and Number	Manufacturer
Multimeter, Digital, Danameter 2000A	Dana Instruments, Inc.

### 3. Trouble Shooting Audio Integrating System

#### 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. LRUs are audio control panels, flight interphone amplifier, and flight compartment (pilot's) speakers.

**Table 103**

	Procedure	Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Substitute a known operational unit for suspected faulty LRU or component.	Replace faulty LRU or component.
(3)	Check for proper grounds at LRUs. 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 LRUs.
(4)	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 a continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.

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WJE ALL

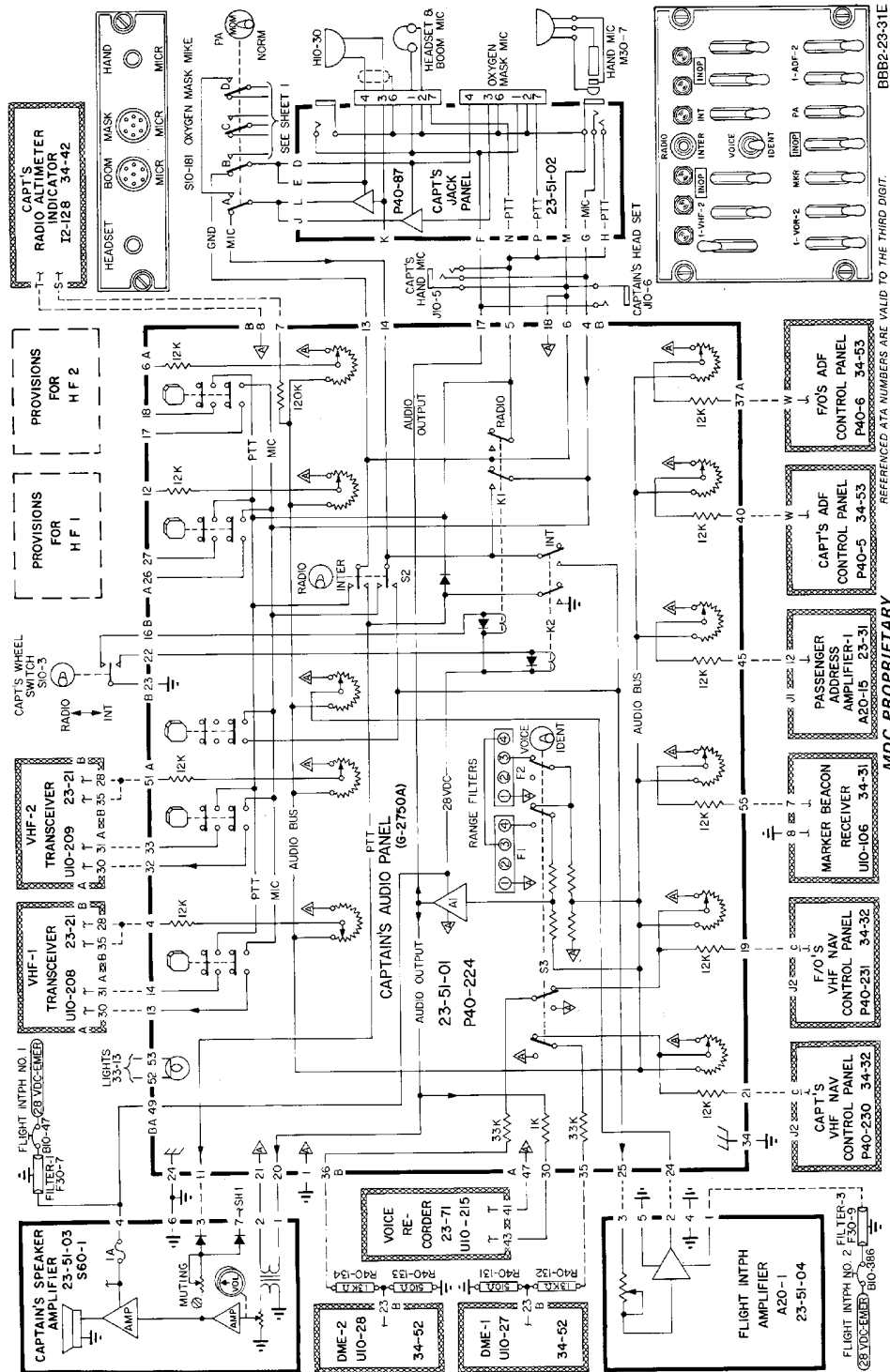
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# MD-80 AIRCRAFT MAINTENANCE MANUAL



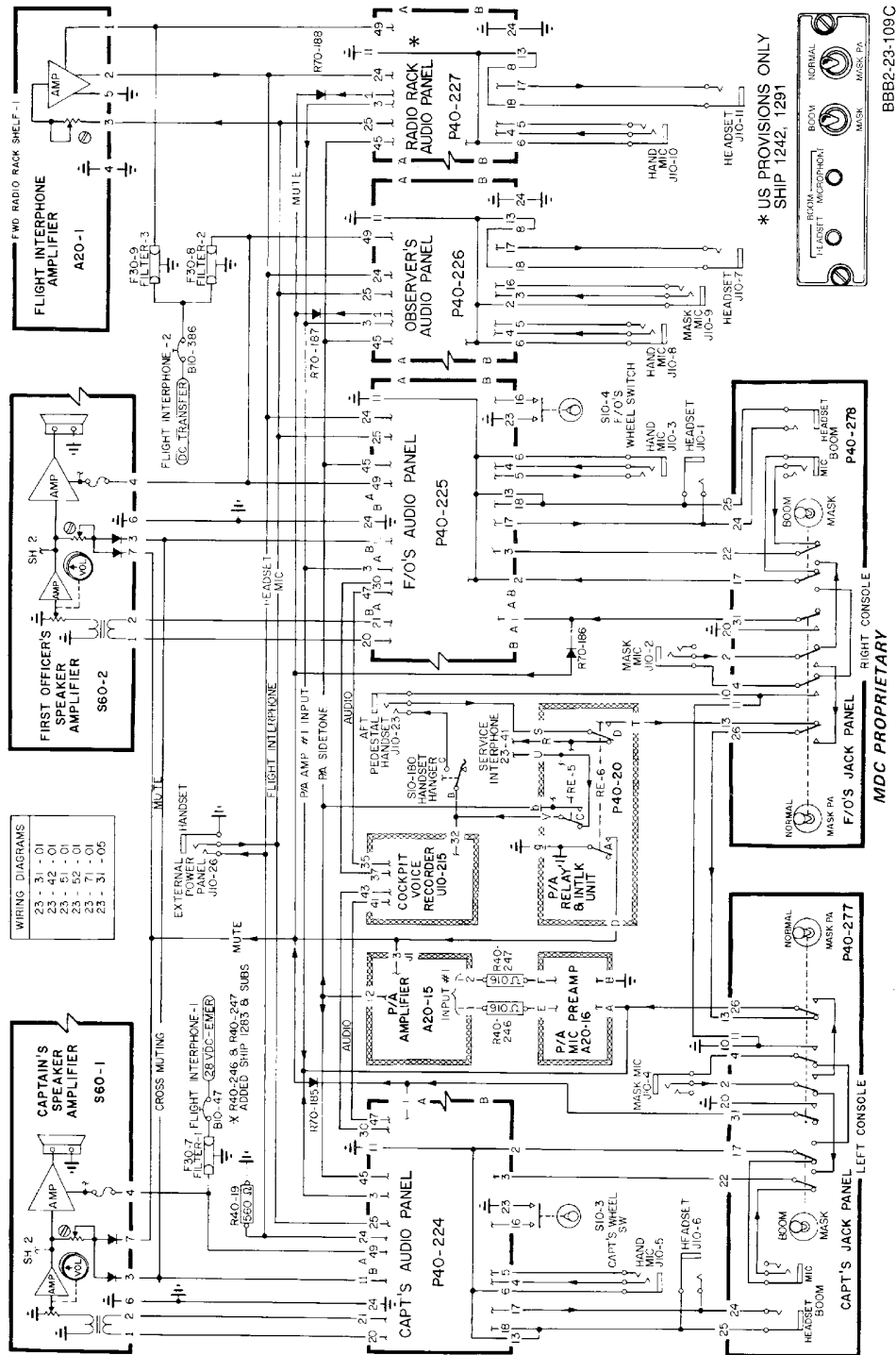
REFFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 1 of 19)

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

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\* US PROVISIONS ONLY  
SHIP 1242, 1291

BBB2-23-109C

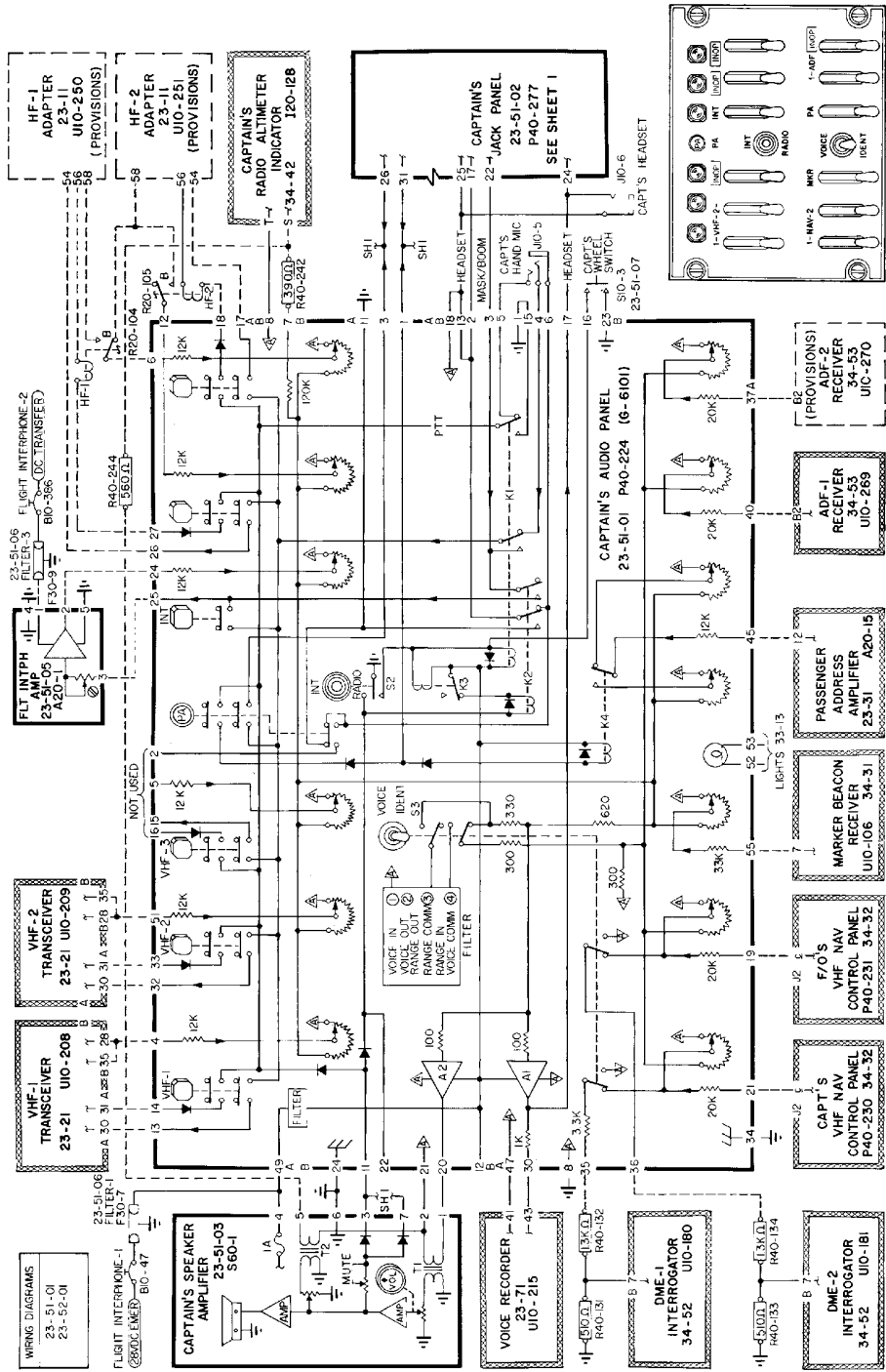
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**Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 2 of 19)**

EFFECTIVITY  
WJE 405, 409, 410, 873, 874, 880, 881, 883, 884

**23-50-00**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 3 of 19)

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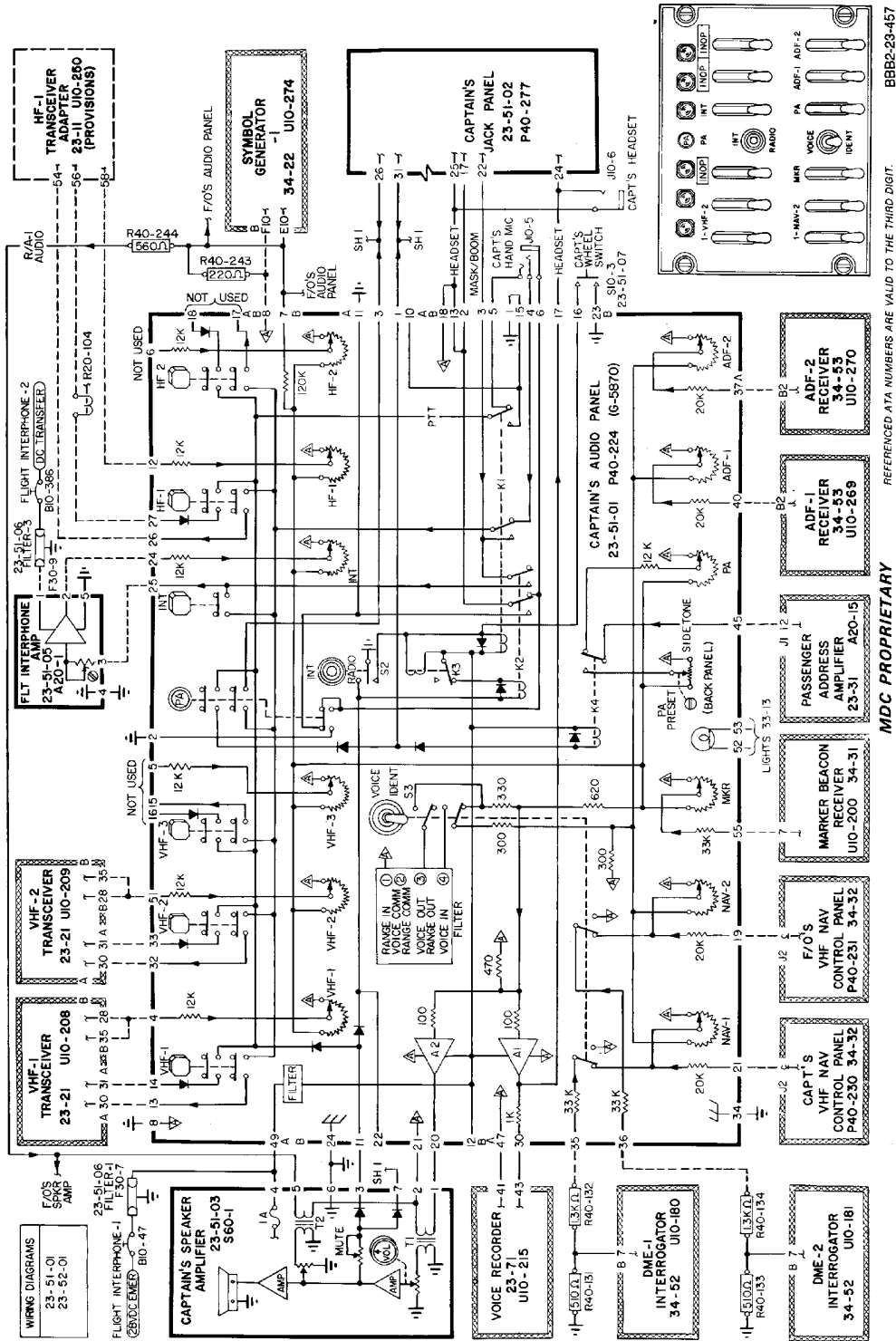
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MDC PROPRIETARY

EFFECTIVITY  
WJE 405, 409, 881, 883, 884

23-50-00

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**Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 4 of 19)**

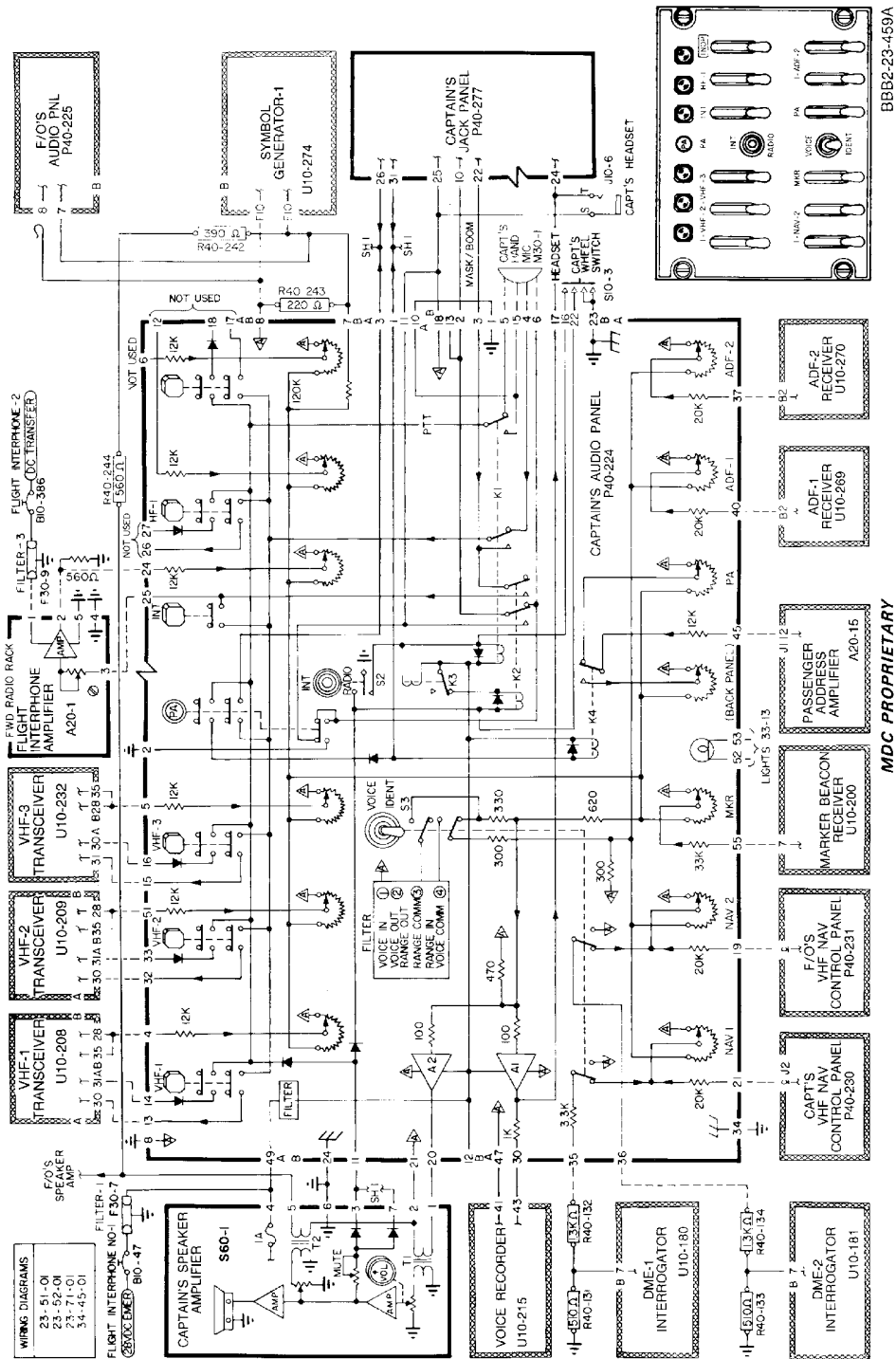
BBB2-23-457  
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

**MDC PROPRIETARY**

EFFECTIVITY  
WJE 407, 408, 411, 880

**23-50-00**

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

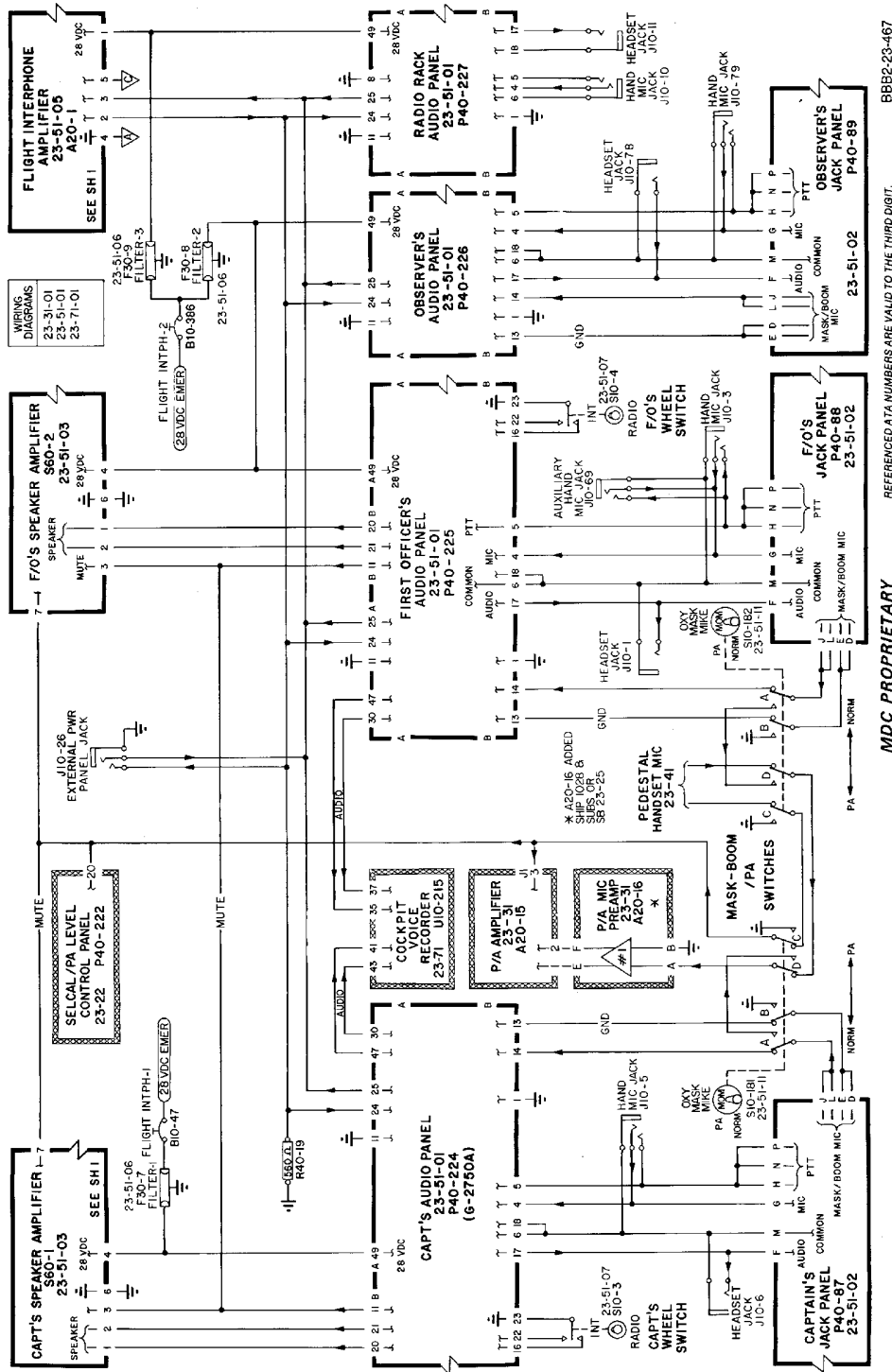


**Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 5 of 19)**

EFFECTIVITY  
WJE 406

**23-50-00**

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88B2-23-467  
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
MDC PROPRIETARY

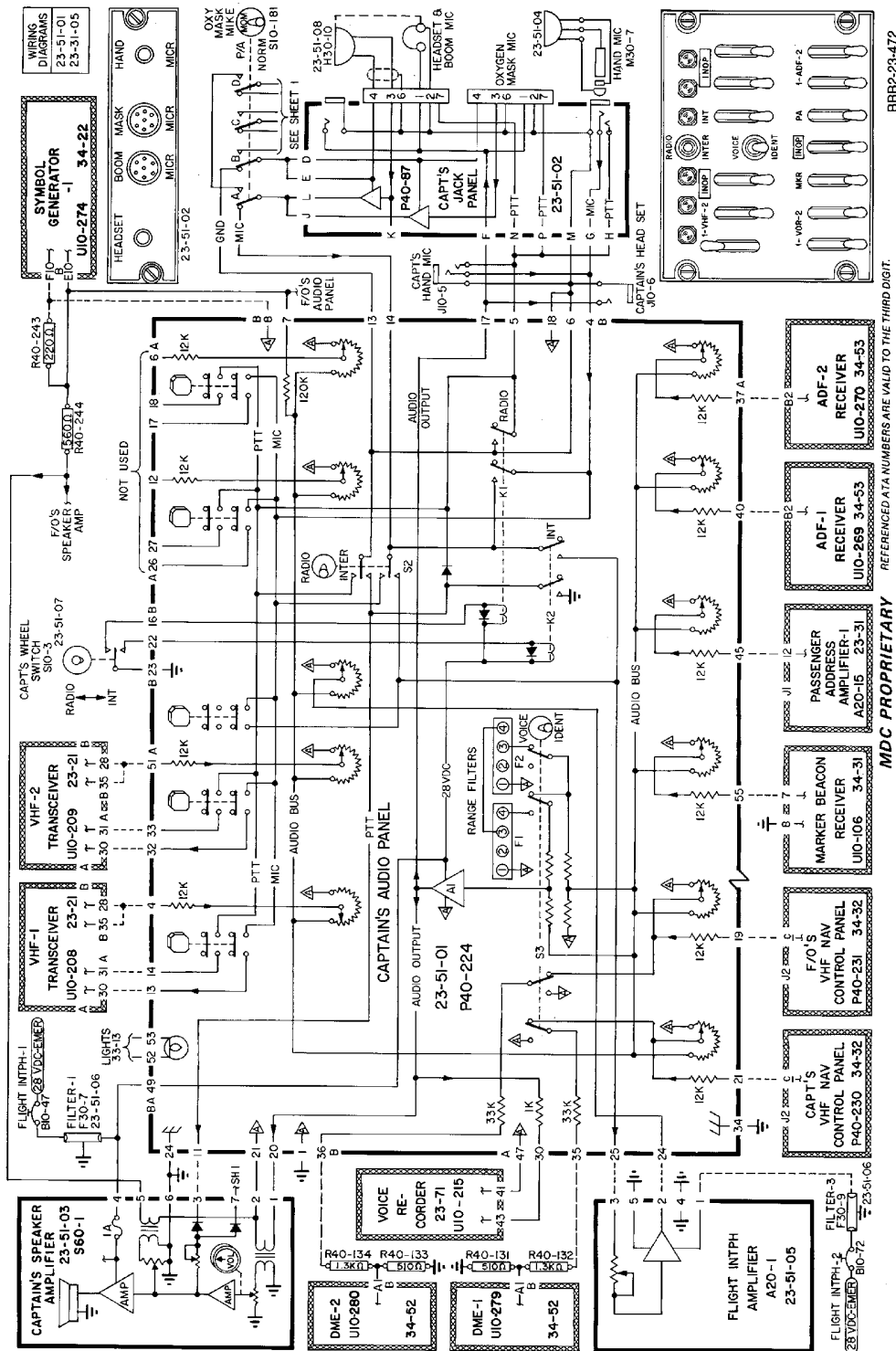
Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 6 of 19)

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

23-50-00



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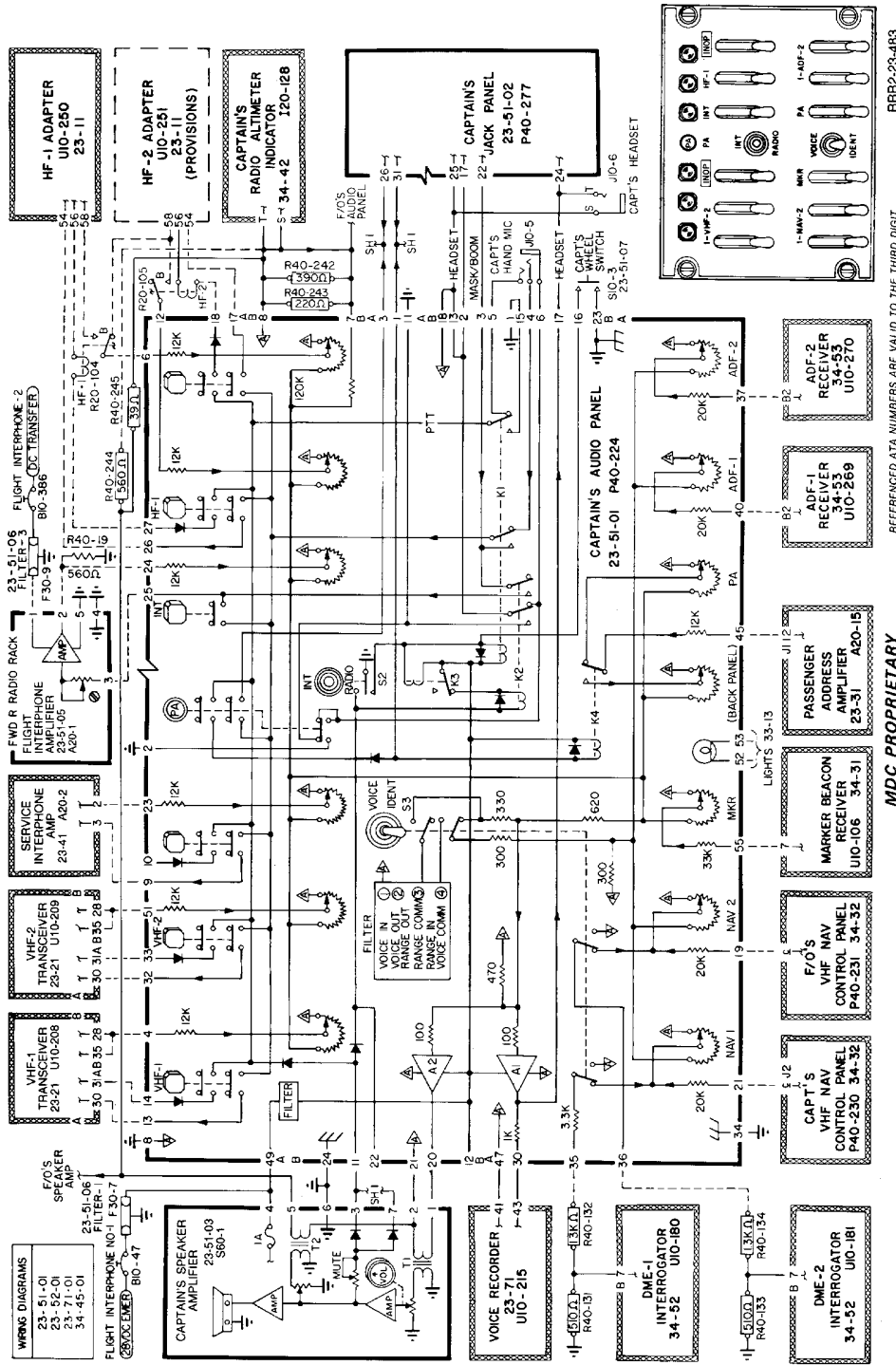
BBB2-23-472  
MDC PROPRIETARY REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

**Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 7 of 19)**

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

**23-50-00**

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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 8 of 19)

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

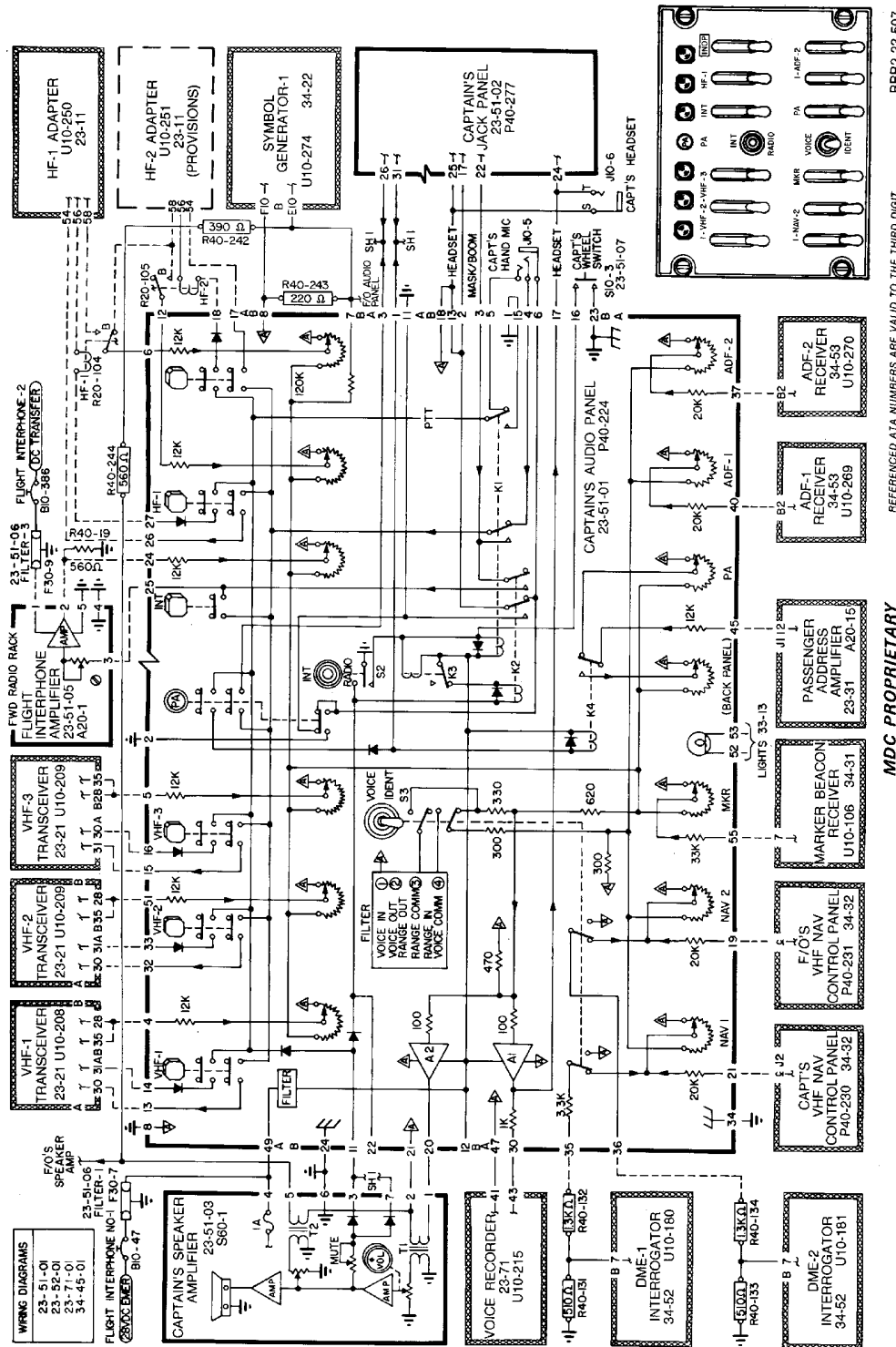
BBB2-23-483

EFFECTIVITY  
WJE 410

23-50-00



**MD-80  
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**Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 9 of 19)**

REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

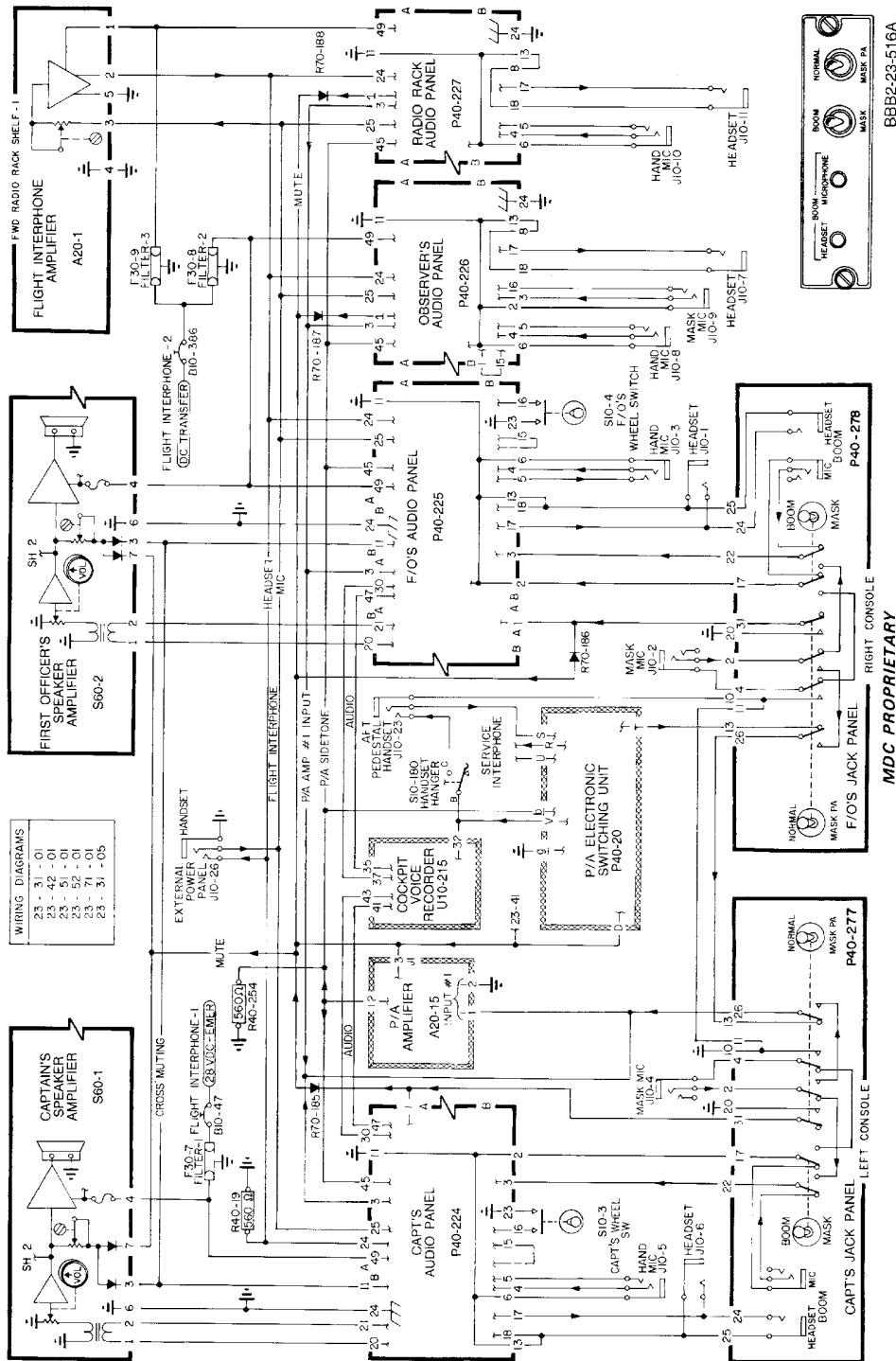
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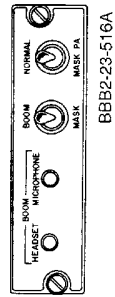
EFFECTIVITY  
WJE 401-404, 412, 414

**23-50-00**

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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 10 of 19)



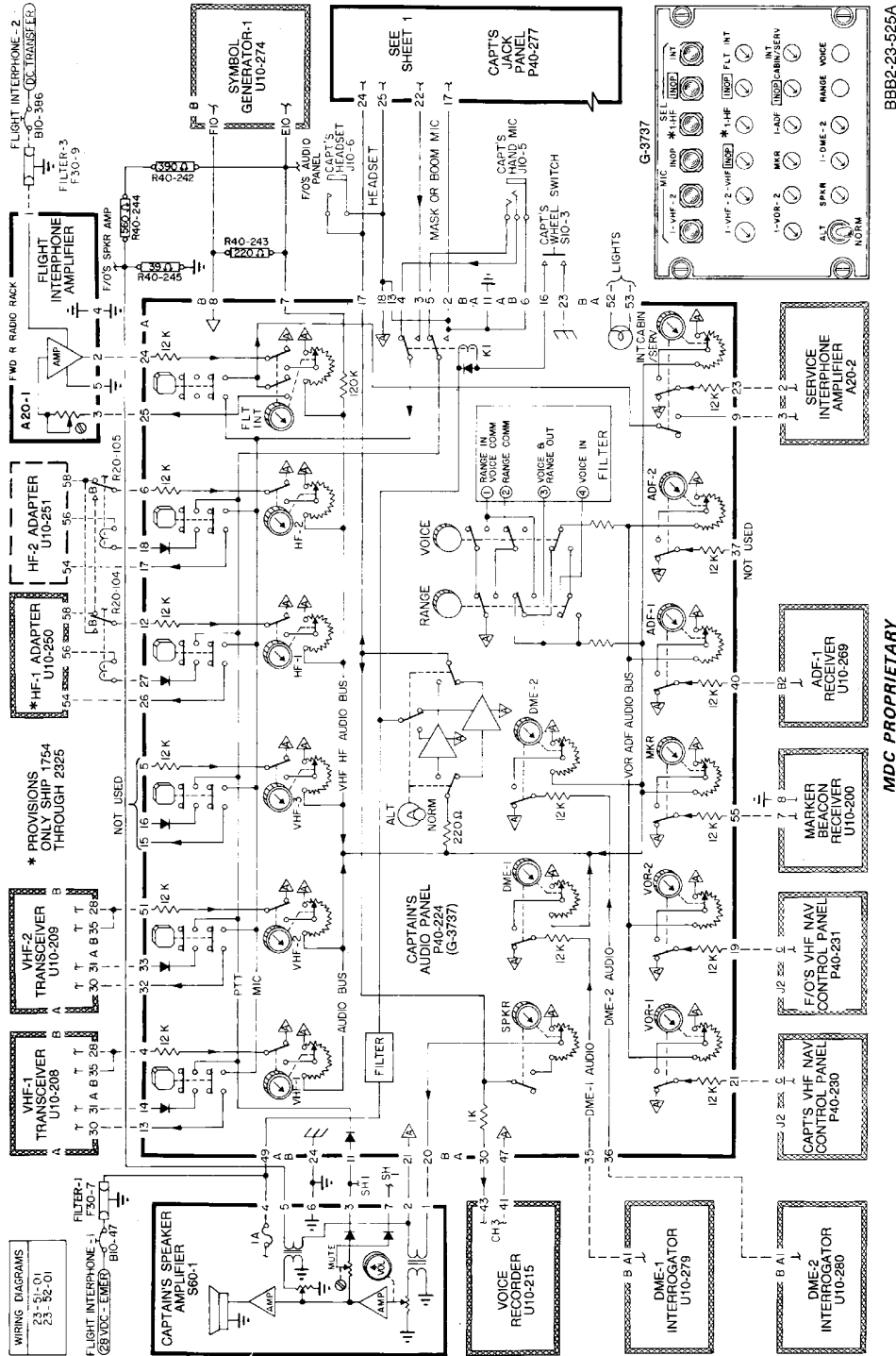
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MDC PROPRIETARY

EFFECTIVITY  
WJE 407, 408, 411

23-50-00

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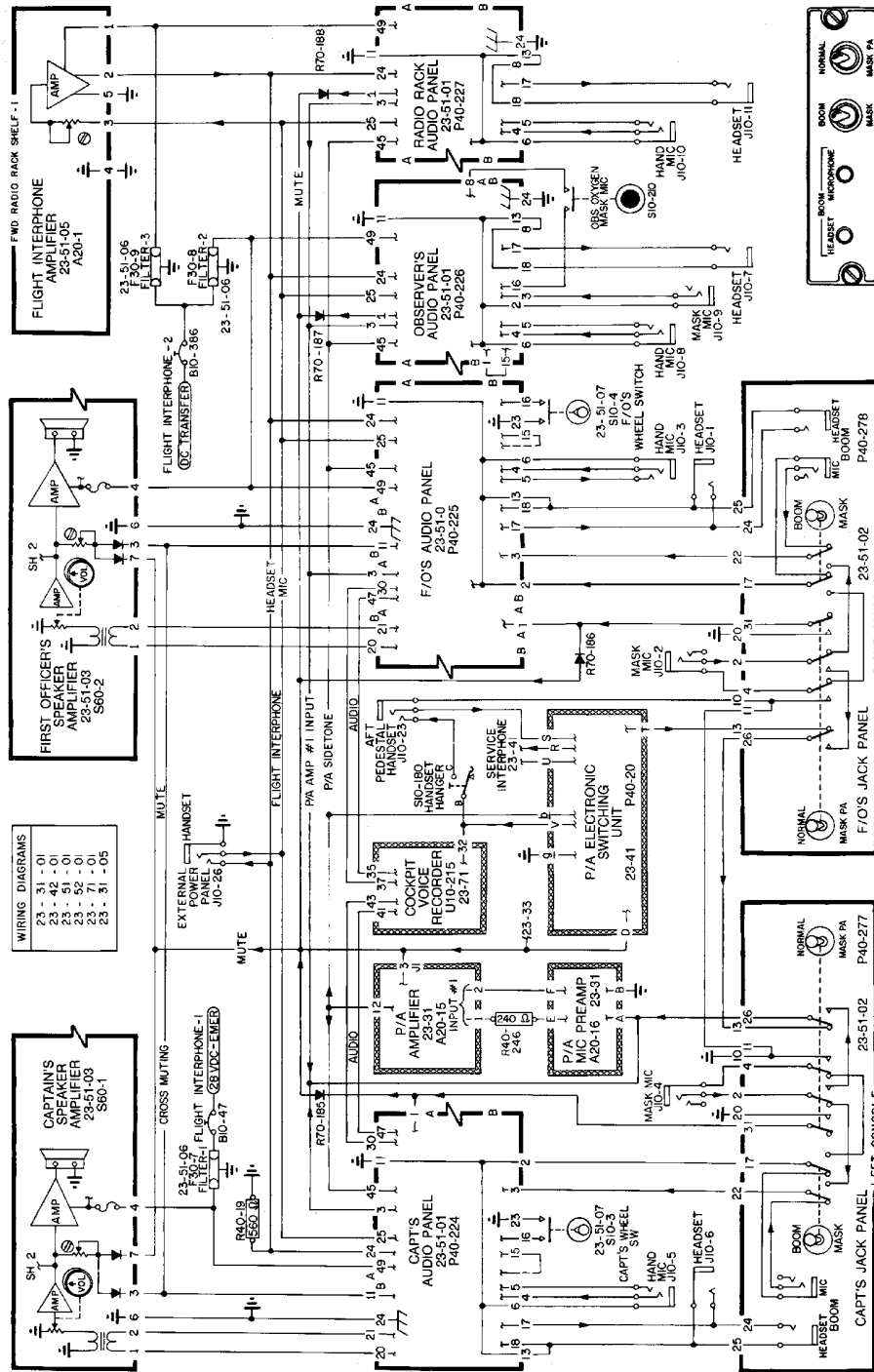
MDC PROPRIETARY

Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 11 of 19)

EFFECTIVITY  
WJE 886, 887

23-50-00

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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 12 of 19)

EFFECTIVITY  
WJE 886, 887

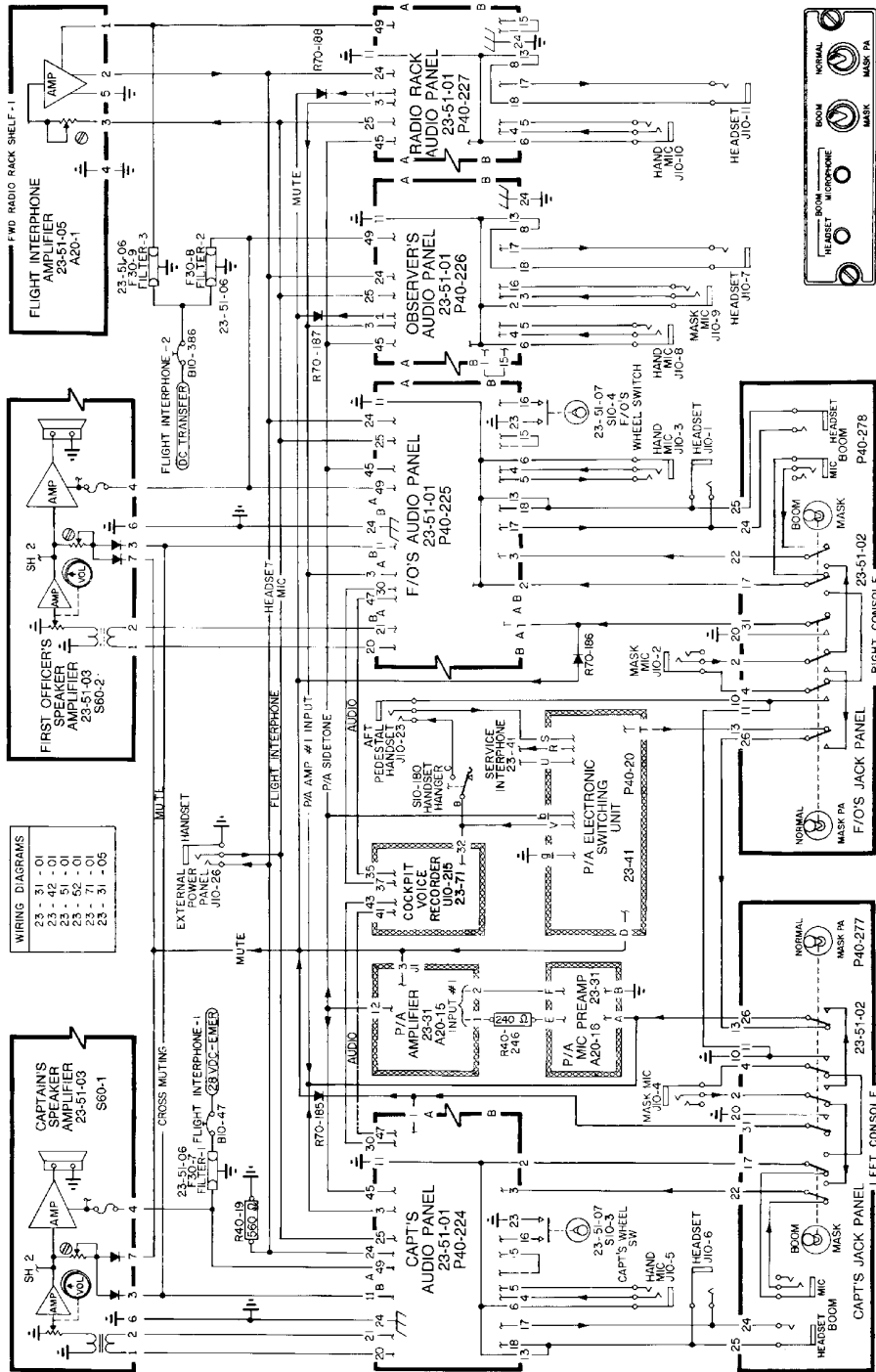
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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 13 of 19)

BBB2-23-558

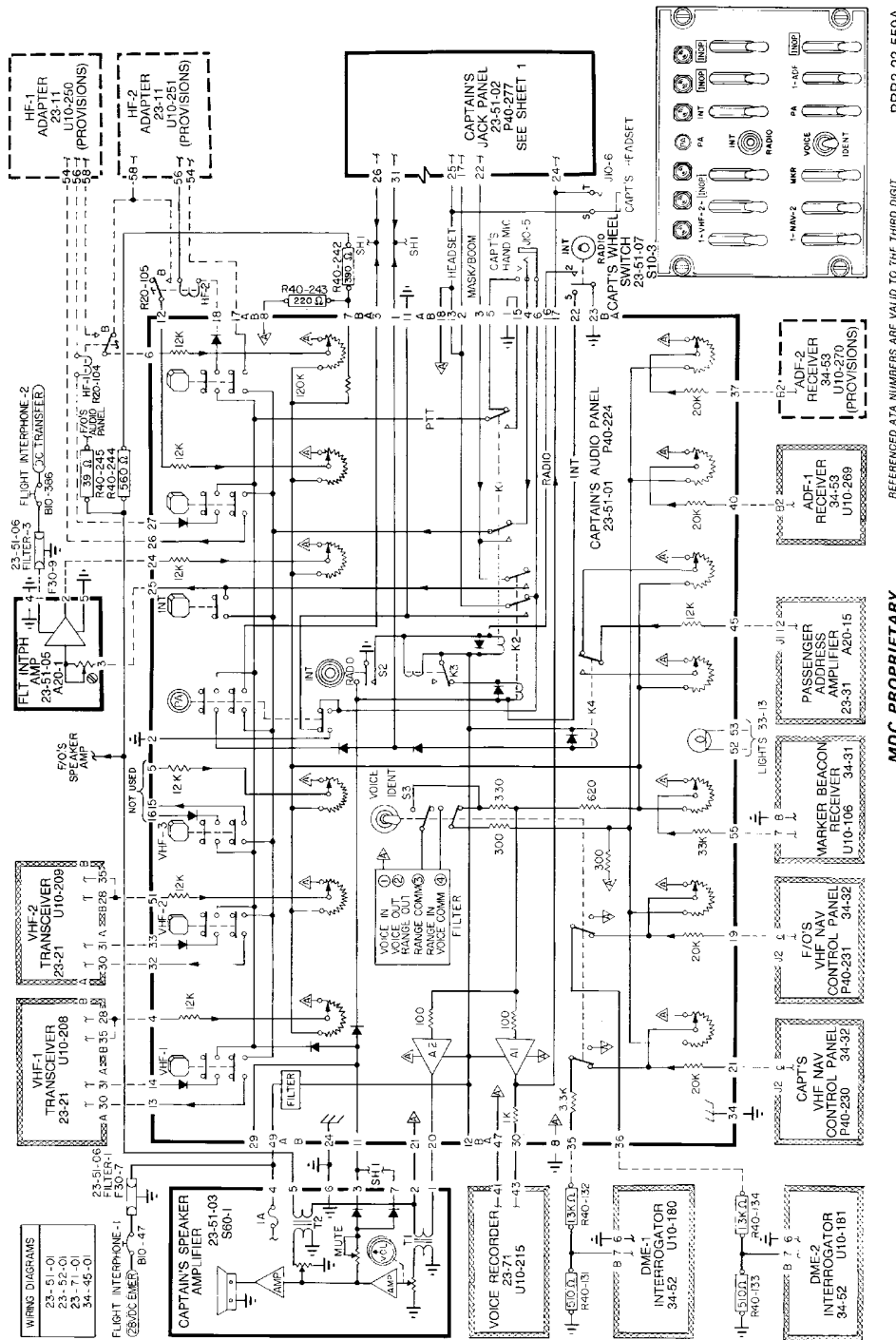
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

EFFECTIVITY  
WJE 892, 893

23-50-00

# MD-80 AIRCRAFT MAINTENANCE MANUAL



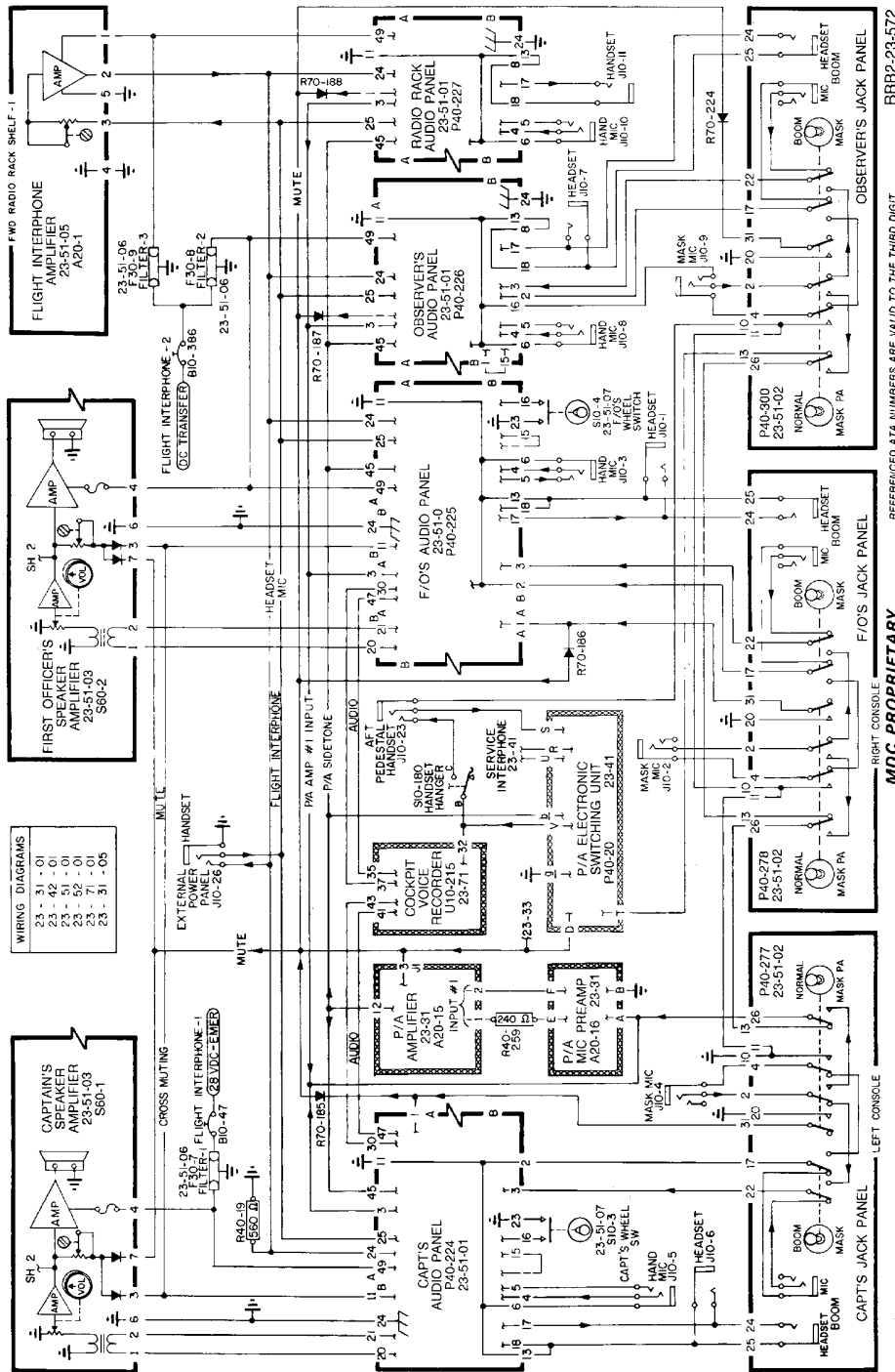
Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 14 of 19)

REFERENCED DATA NUMBERS ARE VALID TO THE THIRD DIGIT.  
MDC PROPRIETARY  
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EFFECTIVITY  
WJE 873, 874

23-50-00

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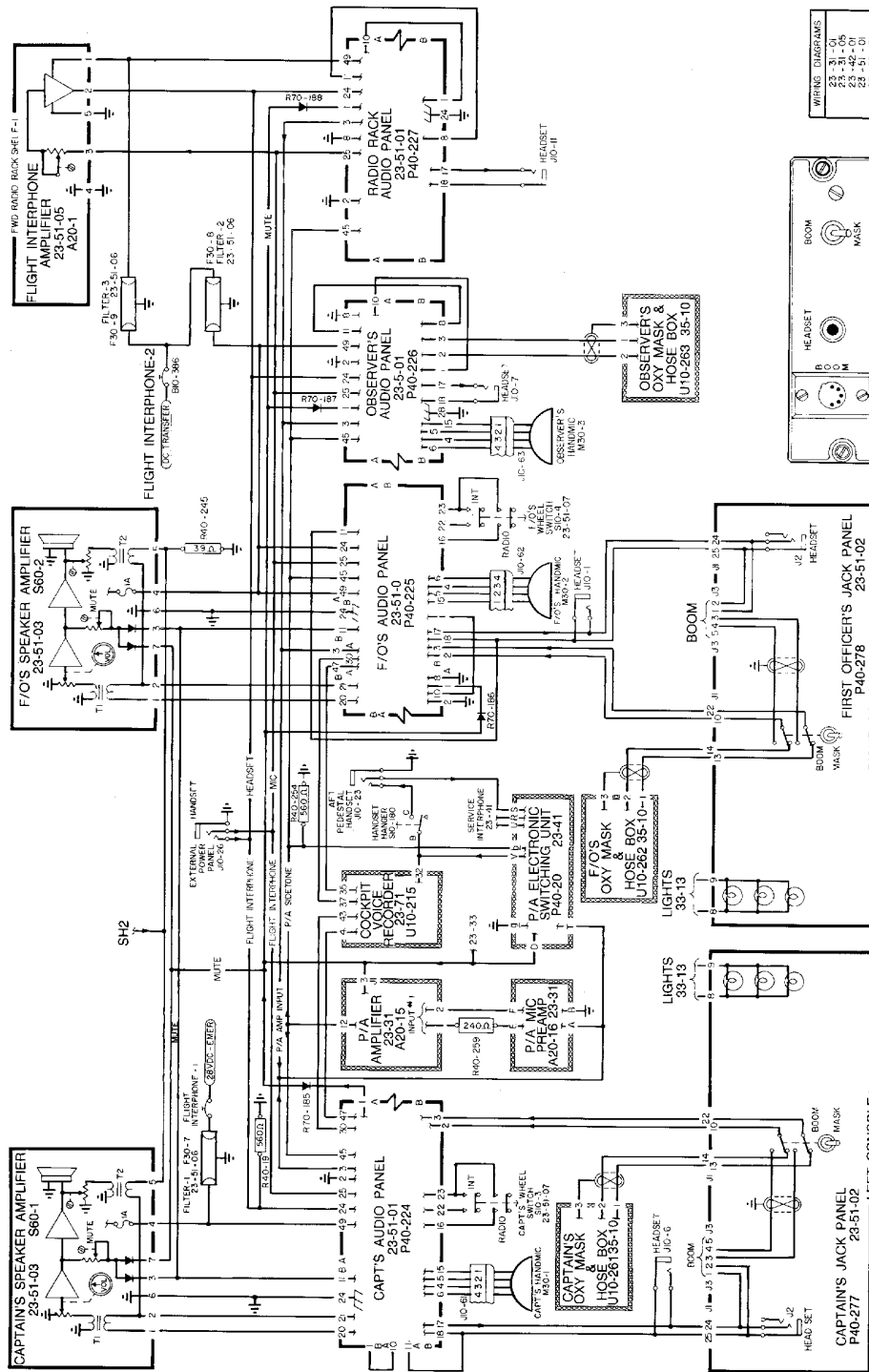
Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 15 of 19)

EFFECTIVITY  
WJE 401-404, 412, 414

23-50-00



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WIRING DIAGRAMS	
23-51-05	06
23-42-01	01
23-51-01	01
23-51-01	01

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REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

MDC PROPRIETARY

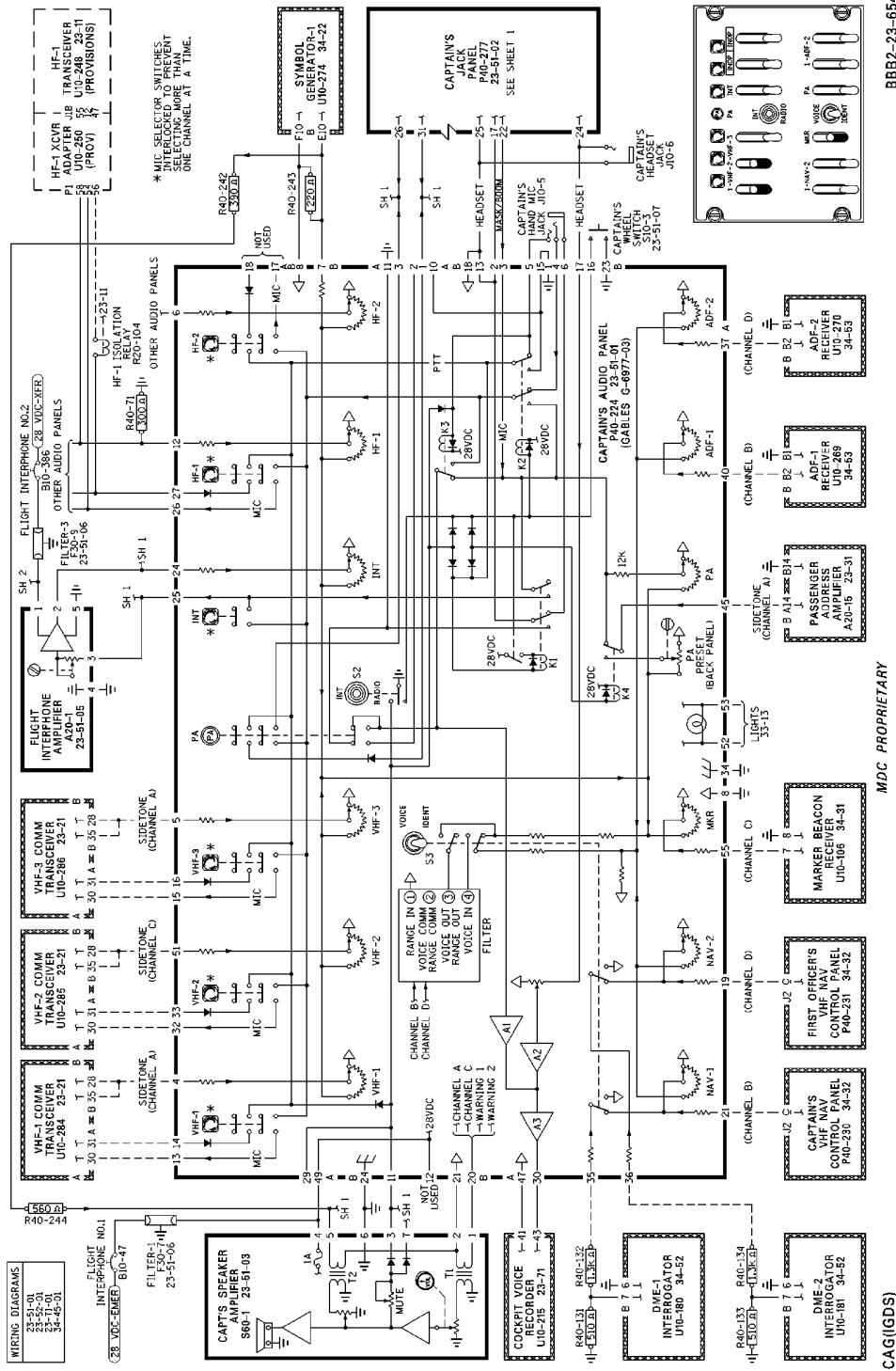
Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 16 of 19)

EFFECTIVITY  
WJE 406

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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 17 of 19)

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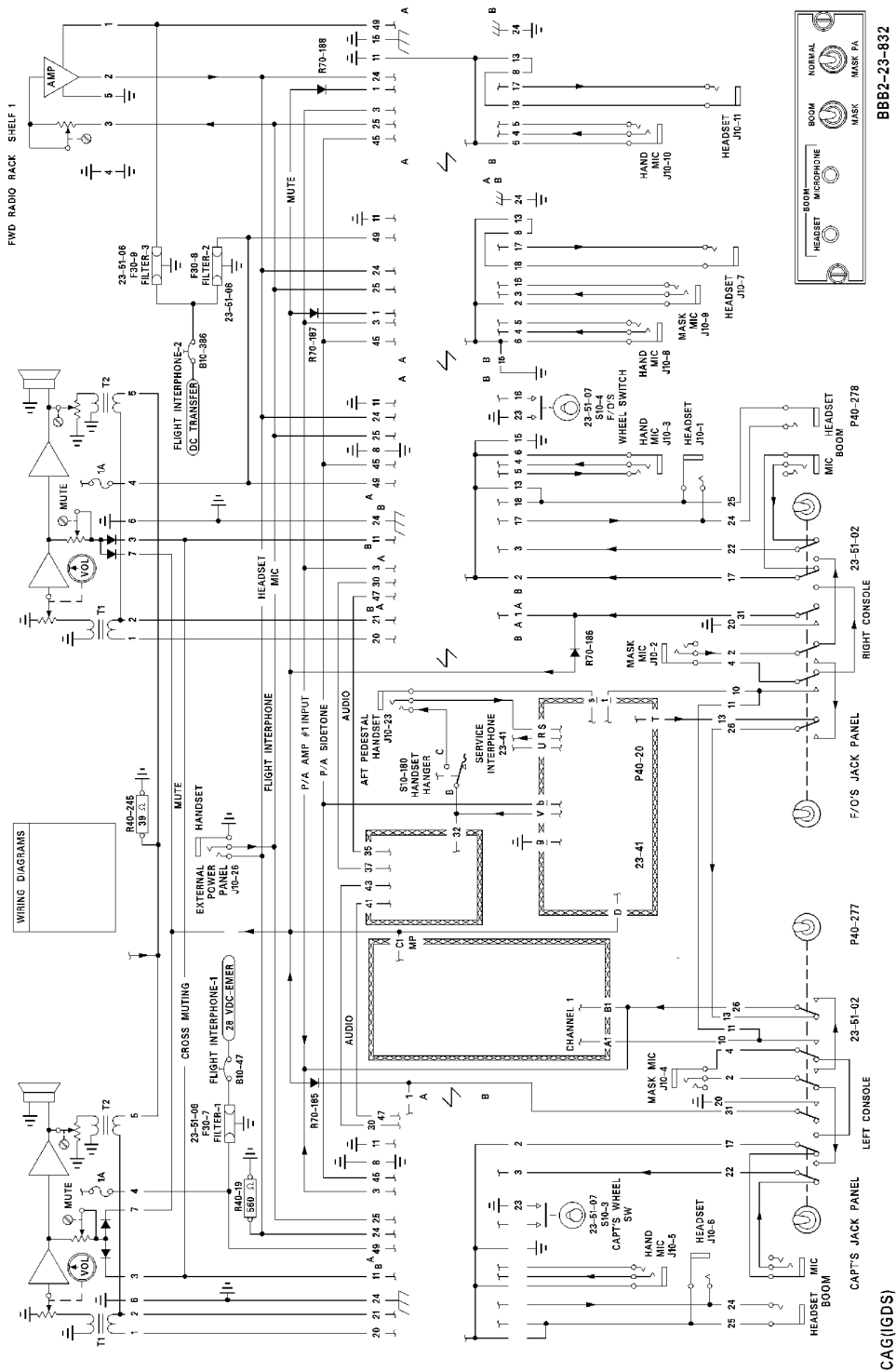
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EFFECTIVITY  
WJE 875-879

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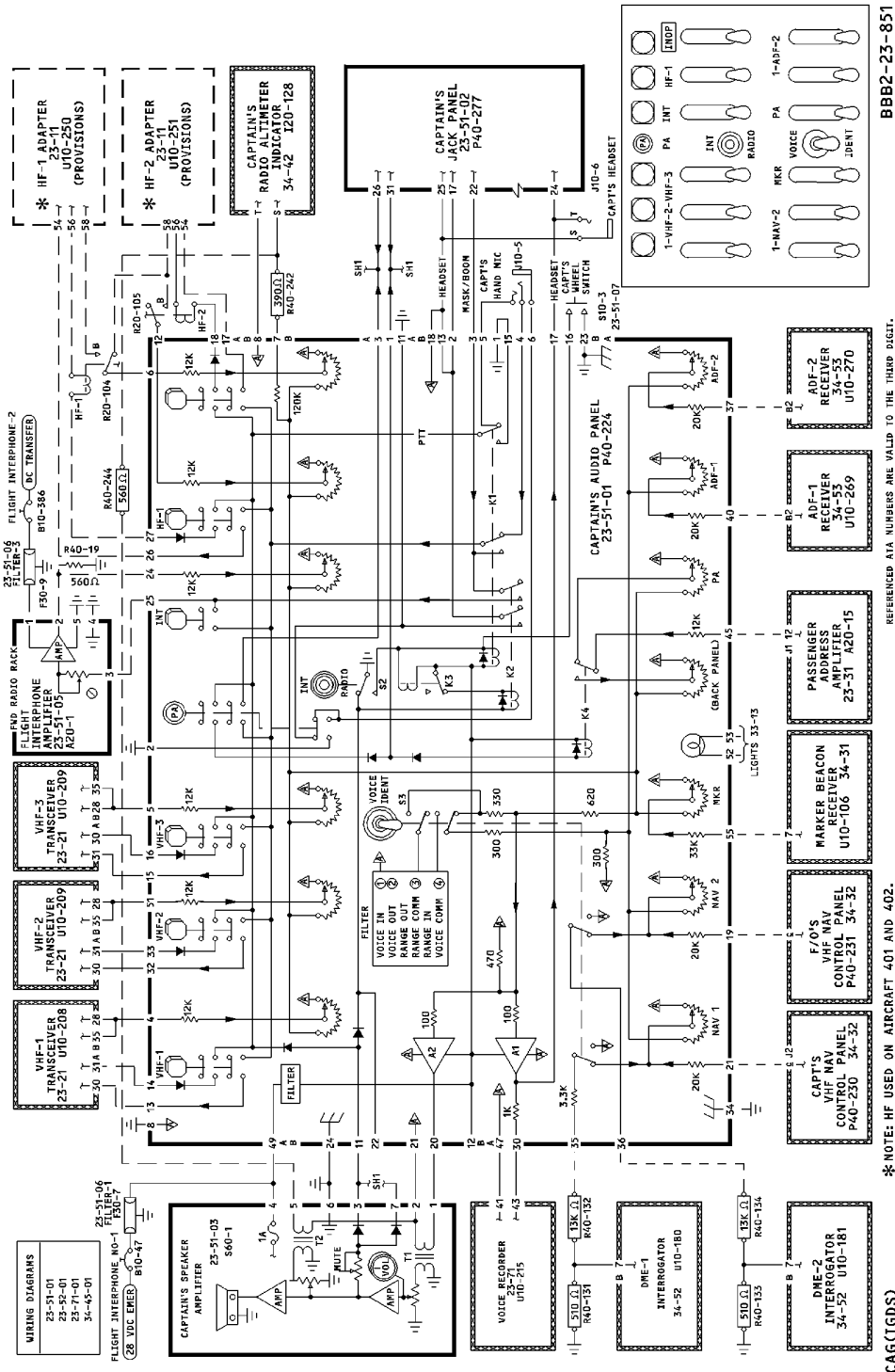


Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 18 of 19)

EFFECTIVITY  
WJE 875-879

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Audio Integrating - Flight Interphone Schematic  
Figure 101/23-50-00-990-801 (Sheet 19 of 19)

EFFECTIVITY  
WJE 412, 414

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## AUDIO INTEGRATING - MAINTENANCE PRACTICES

### 1. General

- A. The Audio Integrating System controls the integration of communication between the flight crew, the output of the communication and navigation receivers into the flight crew headphones and speakers, and the output of the flight crew microphones into the communication transmitters.
- B. The system consists of the audio control panels, microphones, headsets, cockpit speakers, and amplifiers.
- C. The following test procedures check the operation of the audio control panels, and components in the flight interphone system and audio integration with the communication and navigation systems transmitters and receivers.
- D. Audio integrating operation involving the communication transceivers and navigation receivers is also checked in the Maintenance Manual Sections containing these systems as follows:

**Table 201**

<b>WJE 401-404, 407, 408, 410-412, 414, 875-879, 881, 883, 892</b>	
HF Communications	HIGH FREQUENCY SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 23-10-00/201
<b>WJE ALL</b>	
VHF Communications	PAGEBLOCK 23-20-00/201
Passenger Address and Entertainment	PAGEBLOCK 23-30-00/201 Config 1
DME System	DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 2 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 3 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 5 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 6 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 7 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 8
VHF Navigation	VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 2 or VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 4
Marker Beacon System	MARKER BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 34-31-00/201
ADF System	AUTOMATIC DIRECTION FINDING (ADF) - MAINTENANCE PRACTICES, PAGEBLOCK 34-53-00/201 Config 6 or AUTOMATIC DIRECTION FINDING (ADF) - MAINTENANCE PRACTICES, PAGEBLOCK 34-53-00/201 Config 7
Verification of audio integration of the above noted systems can best be checked at the time those systems are checked.	

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WJE ALL

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**Table 201 (Continued)**

If accomplished then,
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>
Paragraph 3.G.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891</b>
Paragraph 3.E.
Paragraph 3.F.
<b>WJE ALL</b>
Paragraph 3.H.
Paragraph 3.I.
need not be accomplished as part of these procedures.

### 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 202**

Name and Number	Manufacturer
Signal Generator 479-2	Collins
Marker Beacon Oscillator BC-376H	Packard Bell

### 3. Adjustment/Test Audio Integrating

A. Microphone and Headset Test

**Table 203**

Step	Operation	Desired Result
(1)	Connect hand-held microphone, handset, headset, oxygen mask microphone as applicable into the jacks at the following stations:	
	Hand-held microphone, headsets, boom microphone/headset:	
	Jacks at Captain's, First Officer's, Observer's spare hand microphone and headset at radio rack stations.	
	Oxygen mask microphone:	
	Captain's and First Officer's Mask Mic jacks.	
	Handset:	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 203 (Continued)**

Step	Operation	Desired Result
	Ground power panel flight interphone jack.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(1)	Plug hand-held microphone, handset, headset as applicable into the jacks at the following stations:	
	Hand-held microphone	
	Headset	
	Jack panel at Captains First Officers, Observers and radio rack stations.	
	Handset:	
	Ground power panel jack.	
(2)	On all audio control panels, press INT push-button and adjust INT volume control to midrange, place all other controls to off or down position.	
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>		
(2)	On all audio control panels, press INT MIC selector push-button and adjust INT volume control to midrange; adjust all other volume controls to minimum position.	
<b>WJE 406</b>		
(2)	On all audio control panels, press INT MIC selector push-button and place INT volume control to midrange; place all other volume controls to minimum position.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(3)	Rotate volume control on cockpit speakers to OFF position.	
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>		
(3)	On Captain's and First Officer's jack panels, place BOOM/MASK switch to MASK.	
<b>WJE 406</b>		
(3)	On Captain's and First Officer's jack panels, place OXY MASK/BOOM switch to OXY MASK.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(4)	establish communications between all stations.	Communications should be clear at all stations.
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>		
(4)	Rotate volume control on cockpit speakers to off position.	

EFFECTIVITY <b>WJE ALL</b>
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-412, 414, 873-881, 883, 884, 892, 893 (Continued)

**Table 203 (Continued)**

Step	Operation	Desired Result
(5)	Using handset, headsets and hand-held microphones, connected as in step (1), establish communications between all stations.	Communications should be clear at all stations.
NOTE: INT volume control may be readjusted as needed to maintain comfortable listening level.		
<b>WJE ALL</b>		

B. Oxygen Mask Microphone Test

**Table 204**

Step	Operation	Desired Result
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>		
(1)	Rotate volume control to a midrange position on cockpit speakers.	
<b>WJE 886, 887</b>		
(1)	On pilots' audio panels, press SPKR control and adjust to midrange. On cockpit speakers, adjust VOL control to midrange.	
<b>WJE ALL</b>		
NOTE: Vol Control on Cockpit Speakers may be readjusted as needed during subsequent tests to eliminate feedback and to maintain a comfortable listening level.		
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(2)	Establish 2-Way communication between Captain's and First Officer's stations by, one at a time, placing each control wheel "RADIO-OFF-INTER" PTTswitch in INTER (Forward) position, speaking into BOOM MIC which simulates Oxygen Mask Mic, and listening to cockpit speaker above other station.	Clear communication. Both cockpit speakers are muted when Captain's or F.O.'s Control Wheel toggle switch is pressed.
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 886, 887, 892, 893</b>		
(2)	Establish 2-way communication between Captain's and First Officer's stations by, one at a time, pressing each control wheel PTT switch, speaking into Boom Mic, which simulates Oxygen Mask Mic, and listening to cockpit speakers.	Clear communication. Both cockpit speakers muted when Captain's or F.O.'s control wheel PTT is pressed.
<b>WJE 406</b>		
(2)	Establish 2-way communication between Captain's and First Officer's stations by, one at a time, pushing forward and holding each control wheel RADIO/INT switch, speaking into BOOM MIC, which simulates Oxygen Mask Mic, and listening to cockpit speakers.	Clear communication. Applicable cockpit speaker is muted when Captain's or F.O.'s control wheel RADIO/INT is pressed.

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WJE 406 (Continued)

**Table 204 (Continued)**

Step	Operation	Desired Result
<p><b>NOTE:</b> RADIO/INT switch is 3 position spring loaded to off in center position. Pressing forward keys INT and pressing aft keys RADIO.</p>		
<p><b>WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893</b></p>		
(3)	Temporarily plug hand-held microphone into Observer's Mask Mic jack, to simulate mask microphone.	
<p><b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b></p>		
(3)	Establish 2-way communication between Captain's and First Officer's stations by one at a time, placing RADIO-INTER toggle switch located on each audio control panel in INTER position, speaking into Boom Microphone simulating the Oxygen Mask microphone and listening to cockpit speaker above other station.	Clear communication. Both cockpit speakers muted when Captain's or F.O.'s control wheel toggle switch is pressed.
(4)	Establish 2-way communication between Observer's and First Officer's Stations by, one at a time, placing RADIO-INTER toggle switch located on each audio control panel in INTER position, speaking into Boom Microphone simulating the Oxygen Mask microphone and listening to earpiece of the Boom Microphone/Headset at other station.	Clear communication. The Cockpit Speakers are muted when "RADIO-INTER" switch on the F.O.'s Audio Panel is pressed.
<p><b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 886, 887, 892, 893</b></p>		
(4)	Establish 2-way communication between First Officer's and Observer's stations by, in turn, pushing F.O.'s control wheel PTT switch, speaking into boom mic simulating mask mic, then pressing PTT switch of Observer's hand mic simulating mask mic and speaking into hand mic; monitor headsets at Observer's stations.	Clear communication. Both cockpit speakers are muted when F.O.'s control wheel PTT is pressed. Neither speaker is muted when Observer's PTT is pressed.
<p><b>WJE 406</b></p>		
(4)	Establish 2-way communication between First Officer's and Observer's stations by, in turn, pushing F.O.'s control wheel RADIO/INT switch forward, speaking into boom mic simulating mask mic, then pressing PTT switch of Observer's hand mic simulating mask mic and speaking into hand mic; monitor headsets at Observer's stations.	Clear communication. Both cockpit speakers are muted while F.O.'s control wheel PTT is pressed. Neither speaker is muted when Observer's PTT is pressed.
<p><b>WJE ALL</b></p>		
(5)	Rotate Volume Control to OFF position on Cockpit Speaker.	
<p><b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 886, 887, 892, 893</b></p>		
(6)	Transfer Observer's hand-held microphone to Observer's hand microphone jack.	

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C. Boom Microphone/Headset Test

Table 205

Step	Operation	Desired Result
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>		
(1)	Connect boom Microphone/headsets as applicable to jacks on Captain's and First Officer's jack panels .	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(1)	Establish 2-way communication between Captain's and First Officer's stations by, one at a time, placing each control wheel "RADIO-OFF-INTER" switch in INTER (forward) position, speaking into boom mic and listening to boomset earphone at other station.	Clear communication.
<b>WJE 406</b>		
(1)	Transfer Captain's and First Officer's boom microphone/headsets to jacks on respective jack panels and place their OXY MASK/BOOM switches to BOOM.	
<b>WJE 886, 887</b>		
(1)	Connect boom microphone/headsets as applicable to Captain's and First Officer's jacks on respective jack panels.	
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 886, 887, 892, 893</b>		
(2)	Establish 2-way communication between Captain's and First Officer's stations by, one at a time, pressing each control wheel PTT switch, speaking into boom mic and listening to boomset earphone at other station.	Clear communication.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(2)	Establish 2-way communication between Captain's and Observer's stations by, one at a time, placing each "RADIO-INTER" PTT switch on Audio Panel in "INTER" position, speaking into Boom Mic and listening to boomset earphone at other station.	Clear communication.
<b>WJE 406</b>		
(2)	Establish 2-way communication between Captain's and First Officer's stations by, one at a time, pressing each control wheel RADIO/INT switch forward, speaking into boom mic, and listening to boomset earphone at other station.	Clear communication.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 406 (Continued)

**Table 205 (Continued)**

Step	Operation	Desired Result
<b>WJE 405, 407-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>		
(3)	Establish 2-way communication between Captain's and Observer's stations by first actuating Captain's control wheel PTT switch, speaking into Boom Mic and listening to headset at Observer's station, then by speaking into Observer's hand mic and listening to boomset earphone at Captain's station.	Clear communication.
<b>WJE 406</b>		
(3)	Establish 2-way communication between Captain's and Observer's stations by first pushing Captain's control wheel RADIO/INT switch forward, speaking into Boom Mic and listening to headset at Observer's station, then by speaking into Observer's hand mic and listening to boomset earphone at Captain's station.	Clear communication.

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#### D. Test Audio Integrating System Communications

NOTE: Communication, navigation, and passenger address systems must be operating to perform audio integrating communication system test.

**Table 206**

Step	Operation	Station/Location	Desired Result
<b>WJE 886, 887</b>			
(1)	Press audio panel MIC SEL switch, press and adjust volume control for VHF-1, or -2.	Captain's First Officer's Observer's Radio Rack	Transceiver selected.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>			
(1)	Press audio panel MIC SELECTOR switch and position volume lever for VHF-1 or VHF-2.	Captain's First Officer's Observer's Radio Rack	To allow operation of transmitter.
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>			
(1)	Press audio panel mic selector switch and adjust volume control for radio comm system it is desired to check.	Captain's First Officer's Observer's Radio Rack	Transceiver selected.
(2)	Rotate volume control to midrange position on cockpit speakers.		

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-412, 414, 873-881, 883, 884, 892, 893 (Continued)

**Table 206 (Continued)**

Step	Operation	Station/Location	Desired Result
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>			
(2)	At VHF comm position selected, press PTT switch and speak into hand microphone.	Captain's First Officer's Observer's Radio Rack	Audio sidetone output should be present from selected transmitter.
<b>WJE 886, 887</b>			
(2)	On pilot's audio panels, press SPKR control to on.		
(3)	At VHF comm position selected, press PTT switch and speak into hand microphone.	Captain's First Officer's Observer's Radio Rack	Sidetone audio from selected transmitter should be clearly heard in headset. Captain's or F.O.'s PTT should mute both cockpit speakers.
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>			
(3)	Using radio comm system selected, press PTT switch and speak into hand microphone.	Captain's First Officer's Observer's Radio Rack	Sidetone audio from selected transmitter should be clearly heard in headset. Captain's PTT should mute Captain's speaker.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>			
(3)	At one VHF position place OXY MASK MIKE switch on console to NORM position and use oxygen mask microphone jack outlet and control wheel PTT switch.	Captain's First Officer's	Audio sidetone should be clear and distinct. Both cockpit speakers should mute when control wheel PTT switch is used.
(4)	At one VHF position place OXY MASK MIKE switch on console to NORM position. Use boom microphone and place RADIO/INTER (PTT) switch on audio panel to RADIO position.	Captain's First Officer's	Audio sidetone should be clear and distinct. Both cockpit speakers should mute when Captain's or First Officer's RADIO/INTER switch is in RADIO position.
<b>WJE 886, 887</b>			
(4)	At one VHF position place BOOM-MASK switch on jack panel to MASK position and use oxygen mask microphone (or simulation) and control wheel PTT switch.	Captain's First Officer's	Same as for step (3).

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 886, 887 (Continued)

**Table 206 (Continued)**

Step	Operation	Station/Location	Desired Result
<b>WJE 406</b>			
(4)	Using desired radio comm system, place OXY MASK/BOOM switch on jack panel to OXY MASK position and use oxygen mask microphone (or simulation). On control wheel press RADIO/INT switch aft.	Captain's First Officer's	Same as for step (3).
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>			
(4)	Using desired radio comm system, place BOOM-MASK switch on jack panel to MASK position and use oxygen mask microphone (or simulation) and control wheel PTT switch.	Captain's First Officer's	Same as for step (3).
<b>WJE 406</b>			
(5)	Using desired radio comm system, place OXY MASK/BOOM switch on jack panel to BOOM position. Use boom microphone and on control wheel press RADIO/INT switch aft.	Captain's First Officer's	Same as for step (3).
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>			
(5)	Using desired radio comm system, place BOOM-MASK switch on console jack panel to BOOM position. Use boom microphone and control wheel PTT switch.	Captain's First Officer's	Same as for step (3).
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>			
(5)	In sequence, operate all receiver audio selector switches.	Captain's First Officer's Observer's Radio Rack	Audio should be present through each switch and control from an operating transmitter.
<b>WJE 886, 887</b>			
(5)	At one VHF position place BOOM-MASK switch on console jack panel to BOOM position. Use boom microphone and control wheel PTT switch.	Captain's First Officer's	Same as for step (3).

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 886, 887 (Continued)

**Table 206 (Continued)**

Step	Operation	Station/Location	Desired Result
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>			
(6)	Repeat step (5) by placing RADIO/INT switch on audio panel to RADIO, instead of using control wheel PTT.	Captain's First Officer's	Same as for step (3).
<b>WJE 406</b>			
(6)	Repeat step (5) by pushing PTT button on audio panel, instead of using control wheel RADIO/INT.	Captain's First Officer's	Same as for step (3).
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>			
(6)	Hold NORMAL-MASK switch on PA jack panel in MASK PA position and use oxygen mask microphone (or simulation).	Captain's First Officer's	Speech should be heard at all PA speakers.
<b>WJE 886, 887</b>			
(6)	In sequence, operate all receiver audio selector switches on audio control panel. Return all audio selectors to off.	Captain's First Officer's Observer's Radio Rack	Audio should be present through each switch, from an operating transmitter.
(7)	Hold NORMAL-MASK PA switch on jack panel in MASK PA position and use oxygen mask microphone (or simulation).	Captain's First Officer's	Speech should be heard at all PA speakers. Cockpit speakers should be silent.
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>			
(7)	In sequence, operate all receiver volume controls on audio panel.	Captain's First Officer's Observer's Radio Rack	Audio should be present through each control, from an operating transmitter.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>			
(7)	Release NORMAL-MASK PA switch to NORMAL position, press PA MICR SEL switch on audio panel and repeat step (6) using boom microphone.	Captain's First Officer's	Same as step (6).
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>			
(8)	Hold NORMAL-MASK PA switch on jack panel in MASK PA position and use oxygen mask microphone (or simulation).	Captain's First Officer's	Speech should be heard at all PA speakers. Both cockpit speakers should be muted.

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**WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893 (Continued)**

**Table 206 (Continued)**

Step	Operation	Station/Location	Desired Result
<b>WJE 406</b>			
(8)	Place OXY MASK/BOOM switch on jack panel to OXY MASK position and use oxygen mask microphone (or simulation).	Captain's First Officer's	Speech should be heard at all PA speakers. Both cockpit speakers should be muted.
(9)	On audio panel push PTT button.	Captain's First Officer's	No audio detected.
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>			
(9)	Release NORMAL-MASK PA switch to NORMAL position, press PA mic selector switch on audio panel, and repeat step (8) using boom microphone and control wheel PTT switches.	Captain's First Officer's	Same as for step (8).
<b>WJE 406</b>			
(10)	Place OXY MASK/BOOM switch to BOOM position, press PA selector switch on audio panel, and repeat step (8) using boom microphone and pressing control wheel RADIO/INT switches aft.	Captain's First Officer's	Same as step (8).

**WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891**

**E. Test Audio Integrating - DME System**

NOTE: If local VOR frequency cannot be obtained, set up signal generator. (VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 2 or VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 4) or (DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 2 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 5 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 8)

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

(Collins 479-2 or equivalent)

**WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891**

**Table 207**

Step	Operation	Desired Result
(1)	On Captain's and First Officer's VHF/NAV control panels, tune to VOR frequency or same frequency as signal generator as applicable.	

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891 (Continued)

**Table 207 (Continued)**

Step	Operation	Desired Result
<b>WJE 886, 887</b>		
(2)	On convenient audio control panel, press VOR-1 selector on and adjust volume to a suitable level; press VOR-2 selector to off.	A 1000 Hz tone must be heard clearly and free of distortion when volume is varied.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(2)	On convenient audio control panel, press NAV-1 switch to NAV-2 switch to off, and VOICE/IDENT switch to IDENT position.	A 1000 Hz tone must be heard clearly and free of distortion when volume is varied.
<b>WJE 886, 887</b>		
(3)	Press VOR-1 selector to of; press VOR-2 selector to on and adjust volume to a suitable level; repeat step (2).	Same as for step (2).
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(3)	Set VOICE/IDENT switch to VOICE position, and then back to IDENT position.	Tone should be heard faintly, and then regain previous volume.
(4)	NAV-1 switch to off, NAV-2 switch to on, and repeat steps (2) and (3).	
<b>WJE 886, 887</b>		
(4)	Press VOR-2 selector to off.	

**WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891**

F. Test Audio Integrating - VHF Navigation

**NOTE:** If local VOR frequency cannot be obtained, set up signal generator. (VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 2 or VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 4)

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

**NOTE:** If local VOR frequency cannot be obtained, set up signal generator, (Collins 479-2 or equivalent). (DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 2 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 5) DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 2 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 5)

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WJE 415-427, 429, 861-866, 868, 869, 871, 872, 886, 887, 891

**Table 208**

Step	Operation	Desired Result
<b>WJE 886, 887</b>		
(1)	On Captain's VHF NAV control panels, select local approved VOR test frequency that coincides with DME crystal in test set or tune to same frequency as signal generator.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
	On Captain's VHF NAV control panels, tune to VOR frequency or same frequency as signal generator.	
<b>WJE 886, 887</b>		
(2)	On convenient audio control panel, press DME-1 selector to on, and adjust volume to suitable level; press DME-2 selector to off.	DME tone signal should be heard in headset at applicable station.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(2)	On convenient audio control panel, set VOICE/IDENT switch to IDENT position.	DME tone signal must be heard on headset at applicable station when switch is on.
<b>WJE 886, 887</b>		
(3)	Press DME-1 selector to off; press DME-2 selector to on and adjust volume to suitable level.	Same as for step (2).
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(3)	Set VOICE/IDENT switch to VOICE position.	No DME tone.
<b>WJE 886, 887</b>		
(4)	Press DME-2 selector to off.	

**WJE 401-412, 414, 873-881, 883, 884, 892, 893**

G. Test Audio Integrating - VHF Navigation and DME

**NOTE:** If local VOR frequency cannot be obtained, set up signal generator, (Collins 479-2 or equivalent). (VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 2 or VHF NAVIGATION SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-51-00/201 Config 4) (DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 3 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 5 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 6 or DISTANCE MEASURING EQUIPMENT SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-52-00/201 Config 7)

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**WJE 401-412, 414, 873-881, 883, 884, 892, 893 (Continued)**

**Table 209**

Step	Operation	Desired Result
(1)	On Captain's and First Officer's VHF NAV control panels, select local approved VOR test frequency that coincides with DME crystal in test set or tune to same frequency as signal generator.	
<b>WJE 406</b>		
(2)	On convenient audio control panel depress VOR ILS DME control.	NAV and DME tones should be heard clearly and free of distortion (readjust volume if necessary).
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>		
(2)	On convenient audio control panel, place NAV-1 control to midrange, NAV-2 control to off, and VOICE/IDENT switch to IDENT position.	NAV and DME tones should be heard clearly and free of distortion (readjust volume if necessary).
<b>WJE 406</b>		
(3)	Depress VOR ILS DME control.	NAV and DME tones absent.
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>		
(3)	Set VOICE/IDENT switch to VOICE position, and then back to IDENT position.	Tones should be heard faintly, and then regain previous volume.
(4)	Place NAV-1 control to off, NAV-2 control to midrange and repeat steps (2) and (3).	Same as for steps (2) and (3).

**WJE ALL**

H. Test Audio Integrating - ADF System

**Table 210**

Step	Operation	Desired Result
<b>WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893</b>		
(1)	On ADF-1 control panel, tune local ADF station.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(1)	On ADF-1 control panel, use right hand frequency selector to tune local ADF station.	
<b>WJE 401-405, 407-412, 414, 873-881, 883, 884, 892, 893</b>		
(2)	On audio control panel, adjust ADF-1 volume control to midrange, ADF-2 control to off, and set VOICE/IDENT switch to IDENT position.	Voice signal should be faint or absent; range signal should be heard.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(2)	On audio control panel, set VOICE/IDENT switch to IDENT position.	Both voice and range signals heard at applicable station.

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

**Table 210 (Continued)**

Step	Operation	Desired Result
<b>WJE 886, 887</b>		
(2)	On audio control panel, set configuration of RANGE and VOICE control switches to enable "both" function (both on, or both off). Press ADF-1 selector to on and adjust volume to suitable level. Press ADF-2 volume control to off.	Both voice and range signals heard at applicable station.
<b>WJE 406</b>		
(2)	On audio control panel, place ADF-1 switch to up position.	Voice signal should be heard clear and free of distortion.
(3)	On audio control panel, depress VOICE ONLY switch.	Voice signal should become faint or disappear. VOICE ONLY switch illuminated.
<b>WJE 886, 887</b>		
(3)	Set VOICE control switch to on, and RANGE control to off.	Range signal should become faint or disappear and voice be heard at applicable station.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(3)	Set VOICE/IDENT switch to VOICE position.	Range signal should become faint or disappear and voice be heard at applicable station.
<b>WJE 401-405, 407-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>		
(4)	Repeat steps (1) through (3) using ADF-2 control panel, and ADF-2 switch on audio control panel.	Same as steps (2) and (3).
<b>WJE 886, 887</b>		
(4)	Set RANGE control switch to on, and VOICE control switch to off.	Voice signal should become faint or disappear and range signal be heard at applicable station.
<b>WJE 406</b>		
(4)	Depress VOICE ONLY switch.	Voice signal regained, light goes off.
(5)	Repeat steps (1) through (3) using ADF-2 control panel, and ADF-2 control on audio control panel.	Same as steps (2) and (3).
<b>WJE 886, 887</b>		
(5)	Press ADF-1 selector to off.	
(6)	Repeat steps (1) through (4) using ADF-2 control panel, and ADF-2 selector on audio control panel.	Same as steps (2) through (4).
(7)	Press ADF-2 selector control to off.	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE ALL

#### I. Test Audio Integrating - Marker Beacon

**Table 211**

Step	Operation	Desired Result
(1)	Set up Marker Beacon Oscillator.	
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>		
	(Packer Bell BC-376H)	
<b>WJE ALL</b>		
	(MARKER BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 34-31-00/201)	
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>		
(2)	On audio control panel, set MKR volume control to midrange.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(2)	On test oscillator, set MODULATION control to 400 Hz position.	Both blue indicator lights must come on, and 400 Hz tone heard in both cockpit speakers.
<b>WJE 886, 887</b>		
(2)	On Captain's and First Officer's audio control panels, press MKR selector to on, and adjust volume to suitable level.	
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>		
(3)	On Captain's and First Officer's cockpit speakers, set VOL to midrange.	
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(3)	On test oscillator, set MODULATION control to 1300 Hz position.	Both amber lights must come on, and 1300 Hz tone heard in both cockpit speakers.
<b>WJE 886, 887</b>		
(3)	On test oscillator, set MODULATION control to 400 Hz position.	Both blue indicator lights must come on, and 400 Hz tone heard in both cockpit speakers.
(4)	On test oscillator, set MODULATION control to 1300 Hz position.	Both amber lights must come on, and 1300 Hz tone heard in both cockpit speakers.
<b>WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891</b>		
(4)	On test oscillator, set MODULATION control to 3000 Hz position.	Both white indicator lights must come on, and 3000 Hz tone heard in both cockpit speakers.
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>		
(4)	On test oscillator, set MODULATION control to 400 Hz position.	Both blue indicator lights must come on, and 400 Hz tone heard in both cockpit speakers.
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893</b>		
(5)	On test oscillator, set MODULATION control to 1300 Hz position.	Both amber lights must come on, and 1300 Hz tone heard in both cockpit speakers.

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893 (Continued)

**Table 211 (Continued)**

Step	Operation	Desired Result
<b>WJE 886, 887</b>		
(5)	On test oscillator, set MODULATION control to 3000 Hz position.	Both white indicator lights must come on, and 3000 Hz tone heard in both cockpit speakers.
(6)	Operate MKR selector to off.	
<b>WJE 401-412, 414, 873-881, 883, 884, 892, 893</b>		
(6)	On test oscillator, set MODULATION control to 3000 Hz position.	Both white indicator lights must come on, and 3000 Hz tone heard in both cockpit speakers.

**WJE ALL**

J. Test Termination

- (1) Remove test equipment.
- (2) Return aircraft to required configuration.

EFFECTIVITY  
WJE ALL

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**23-50-00**

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## FLIGHT INTERPHONE AMPLIFIER - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and operational test for the flight interphone amplifier. The flight interphone amplifier is located in the forward right radio rack in the electrical/electronics compartment. Access to the flight interphone amplifier is through the compartment lower door.

### 2. Removal/Installation

- A. Remove Flight Interphone Amplifier

**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:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

- (2) Disconnect electrical connector from flight interphone amplifier.  
 (3) Loosen captive screws at top of flight interphone amplifier and lift amplifier case from bottom mounting plate.  
 (4) Remove screws securing amplifier bottom mounting plate to bracket.  
 (5) Remove amplifier bottom mounting plate and secure amplifier case to plate with captive screws.

- B. Install Flight Interphone Amplifier

**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:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

- (2) Loosen captive screws at top of amplifier and remove amplifier case from bottom mounting plate.  
 (3) Place amplifier bottom mounting plate on radio rack bracket and secure with attaching screws.  
 (4) Secure amplifier case with connector facing inboard to amplifier bottom mounting plate with captive screws.  
 (5) Connect electrical connector to flight interphone amplifier.  
 (6) Remove the safety tag and close this circuit breaker:

**LOWER EPC, XFER BUS**

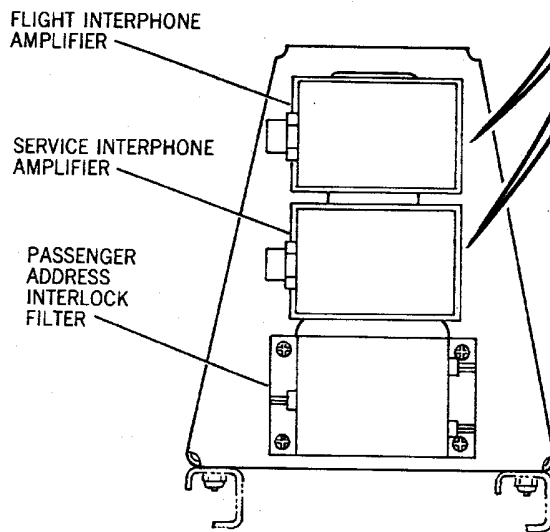
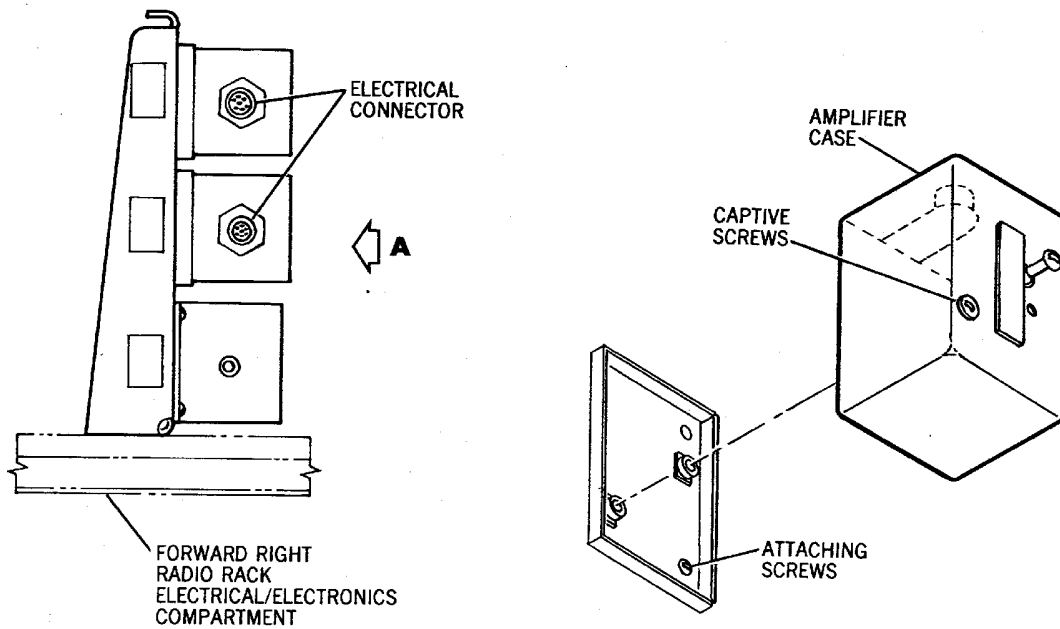
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

- (7) Check flight interphone amplifier output using captain and flight engineer audio equipment.  
 (8) Return airplane to required configuration.

EFFECTIVITY  
WJE ALL

**23-50-01**

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AIRCRAFT MAINTENANCE MANUAL**



**VIEW A**  
VIEW LOOKING FWD

BBB2-23-2A

**Flight Interphone Amplifier -- Removal/Installation**  
Figure 201/23-50-01-990-801

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

**23-50-01**

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## AUDIO CONTROL PANEL - MAINTENANCE PRACTICES

### 1. General

**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

- A. The audio control panels provide control for the audio integrating system. Panels are located on the Captain's console, first Officer's console, aft overhead switch panel, and electrical/electronics compartment right radio rack.

**WJE 407, 408, 411, 880**

- B. The audio control panels provide control for the audio integrating system. Panels are located on the pedestal, aft overhead switch panel, and electrical/electronics compartment right radio rack.

**WJE ALL**

- C. To check operation of the audio control panels following removal/installation it will be necessary to perform operational tests of the communication transceivers, navigation receivers, and the audio integrating system.
- D. The Maintenance Manual Sections containing these systems are as follows:

VHF Communications	VHF - MAINTENANCE PRACTICES, PAGEBLOCK 23-20-00/201
Public Address and Entertainment	PASSENGER ADDRESS AND ENTERTAINMENT - MAINTENANCE PRACTICES, PAGEBLOCK 23-30-00/201 Config 1
Audio Integrating	AUDIO INTEGRATING - MAINTENANCE PRACTICES, PAGEBLOCK 23-50-00/201
DME System	DISTANCE MEASURING EQUIPMENT SYSTEM, SUBJECT 34-52-00
Marker Beacon System	MARKER BEACON, SUBJECT 34-31-00
VHF Navigation	VHF NAVIGATION, SUBJECT 34-51-00
ADF SYSTEM	AUTOMATIC DIRECTION FINDING (ADF), SUBJECT 34-53-00

- E. Removal/Installation procedures are identical for all audio control panels except for location. Location of the audio control panels is as follows:

Aft Overhead Switch Panel
<b>WJE 407, 408, 411, 880</b>
Captain's Console
First Officer's Console
<b>WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891</b>
Electrical/Electronics Compartment (aft right radio rack)
<b>WJE ALL</b>

### 2. Removal/Installation Audio Control Panel

- A. Remove Audio Control Panel

EFFECTIVITY
WJE ALL

23-50-02

## 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) Open these circuit breakers and install safety tags:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

**WJE ALL**

- (2) On audio control panel, open Dzus fasteners.  
 (3) Remove control panel to expose electrical connectors and disconnect.
- B. Install Audio Control 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:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

**WJE ALL**

- (2) Connect audio control panel electrical connectors.  
 (3) Insert control panel into cavity and secure fasteners.  
 (4) Remove the safety tags and close these circuit breakers:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2



**23-50-02**



## MD-80 AIRCRAFT MAINTENANCE MANUAL

### OVERHEAD EMERGENCY DC BUS

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	10	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

**WJE 410**

A	11	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

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

(5) Perform operational tests as required.

**WJE 412, 414**

(6) Perform operational tests.

WJE

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WJE

WJE

WJE

(a) Tune in local frequencies as required to make sure the audio signals can be selected for the following systems:

- VHF-1, -2 (ATIS)
- NAV-1, -2
- DME-1, -2 (coupled to NAV-1, -2)
- ADF-1, -2

(b) Make sure that the VOICE/IDENT selection is operational with NAV signal input.

(c) Make sure sound is heard loud and clear on headphones, boom/headset phones and speaker.

(d) Communicate to other pilot's position on interphone using the headset.

(e) Make a VHF-1 call using the hand mic.

(f) Make VHF-2 call using the hand mic.

(g) Make a PA announcement using the hand mic.

(h) Make a Cabin Interphone announcement using the hand mic.

(i) Depress the Test pushbutton on the Control and Dimming Panel and listen for the three (3) Marker Beacon tones.

(j) Test the Oxygen Mask using interphone and radio switch.

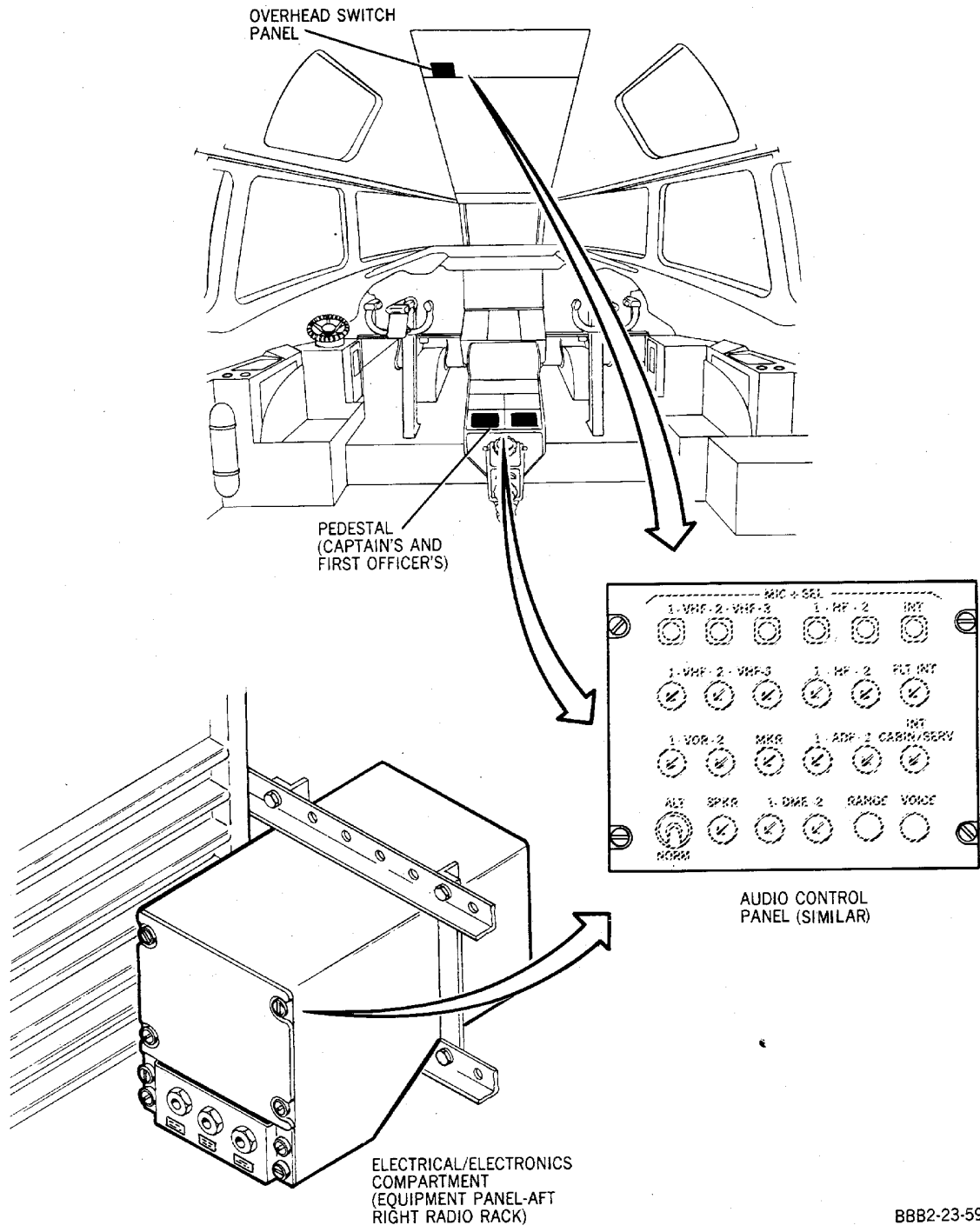
**WJE ALL**

EFFECTIVITY  
WJE ALL

**23-50-02**

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**



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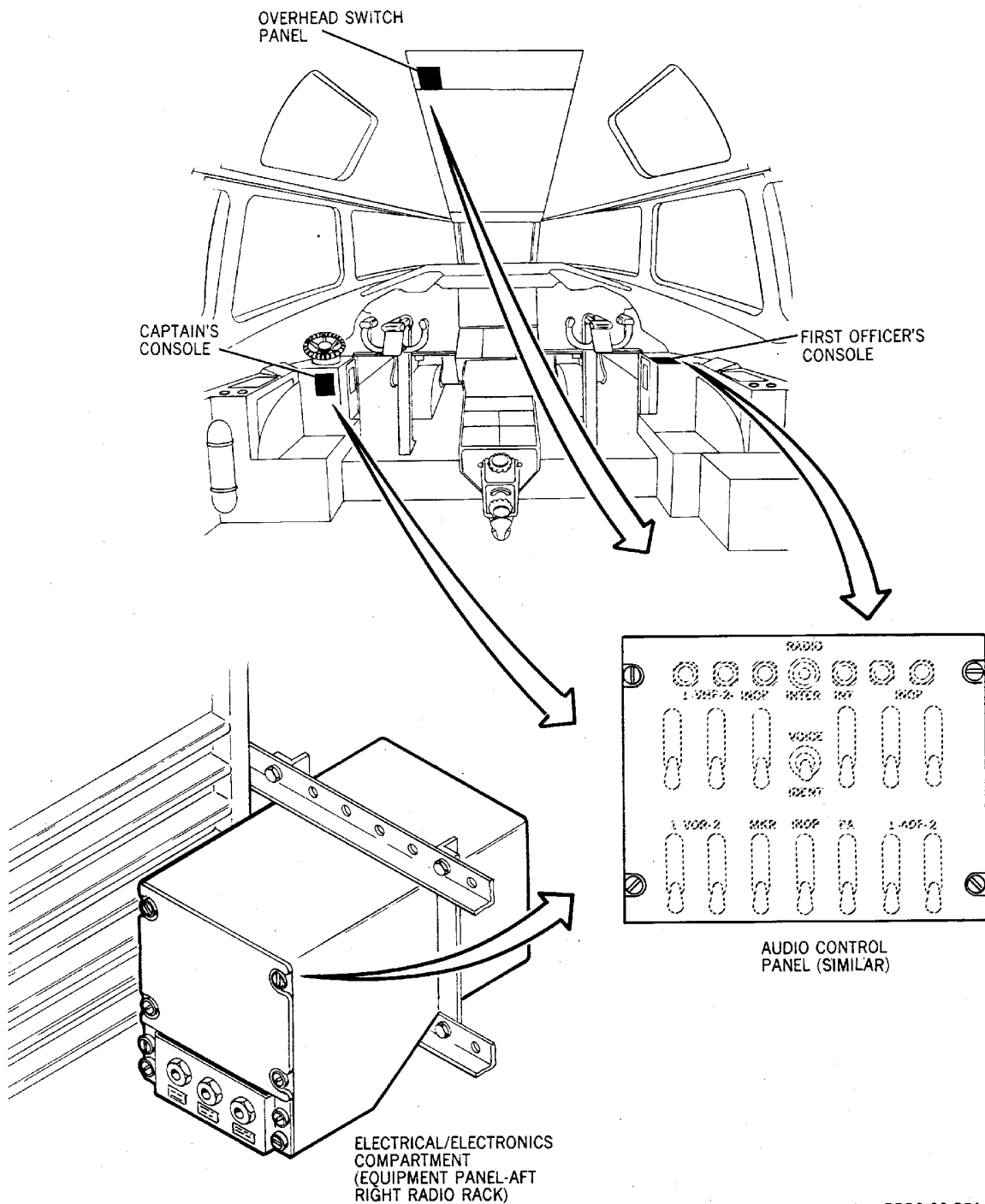
**Audio Control Panel -- Removal/Installation**  
Figure 201/23-50-02-990-806 (Sheet 1 of 2)

EFFECTIVITY  
WJE 407, 408, 411, 880

**23-50-02**

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BBB2-23-55A

**Audio Control Panel -- Removal/Installation**  
Figure 201/23-50-02-990-806 (Sheet 2 of 2)

**EFFECTIVITY**

WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893

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**23-50-02**

**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**FLIGHT COMPARTMENT SPEAKERS - MAINTENANCE PRACTICES**

**1. General**

- A. It is not necessary to perform an entire audio integrating adjustment/test when a speaker is replaced. Establish satisfactory output from replacement speaker, by operating interphone or communication system to ensure proper output of speaker.

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

- B. Removal/Installation procedures are identical for Captain and First Officer positions.

**WJE ALL**

**2. Removal/Installation Captain's Flight Compartment Speakers**

**WJE 407, 408, 411, 880**

- A. (Installed in HUD Provisions Panel) (Figure 201)

**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

Remove Speaker (Figure 201)

**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.

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

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

**WJE 407, 408, 411, 880**

- (2) Remove attaching screws and lower speaker until electrical connector is accessible.

**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

- (3) Remove speaker mounting plate attaching screws and lower speaker until electrical connector is accessible.

**WJE ALL**

- (4) Disconnect electrical connector.

**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

- (5) Remove speaker attaching screws and remove mounting plate from speaker.

**WJE ALL**

- B. Install Speaker (Figure 201)

EFFECTIVITY  
WJE ALL

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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:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

**WJE 407, 408, 411, 880**

- (2) Remove cover from back of speaker. Return cover and attaching screws to stock.

**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

- (3) Install mounting plate on speaker.

**WJE ALL**

- (4) Connect electrical connector.

**WJE 401-406, 409, 410, 412, 414-427, 429, 861-866, 868, 869, 871-879, 881, 883, 884, 886, 887, 891-893**

- (5) Install speaker assembly in opening in overhead panel, and secure speaker mounting plate with attaching screws.

**WJE 407, 408, 411, 880**

- (6) Install speaker in cavity in HUD housing, and secure with attaching screws.

**WJE ALL**

- (7) Remove the safety tags and close these circuit breakers:

**LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

**OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

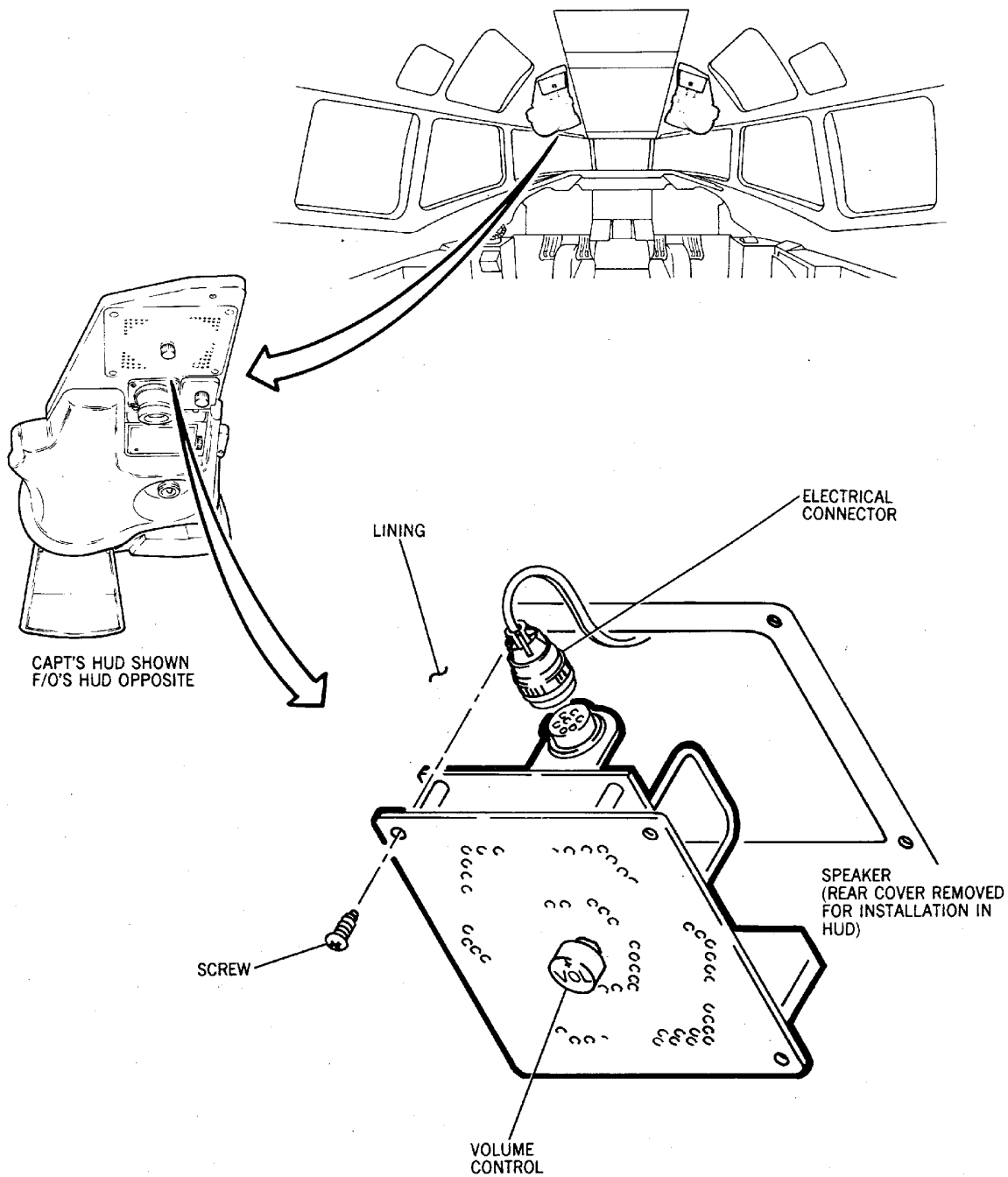
**WJE ALL**

- (8) Operate interphone or communication system to verify proper output of speaker.



**23-50-03**

# MD-80 AIRCRAFT MAINTENANCE MANUAL



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Flight Compartment Speaker -- Removal/Installation  
Figure 201/23-50-03-990-805 (Sheet 1 of 2)

EFFECTIVITY  
WJE 407, 408, 411, 880

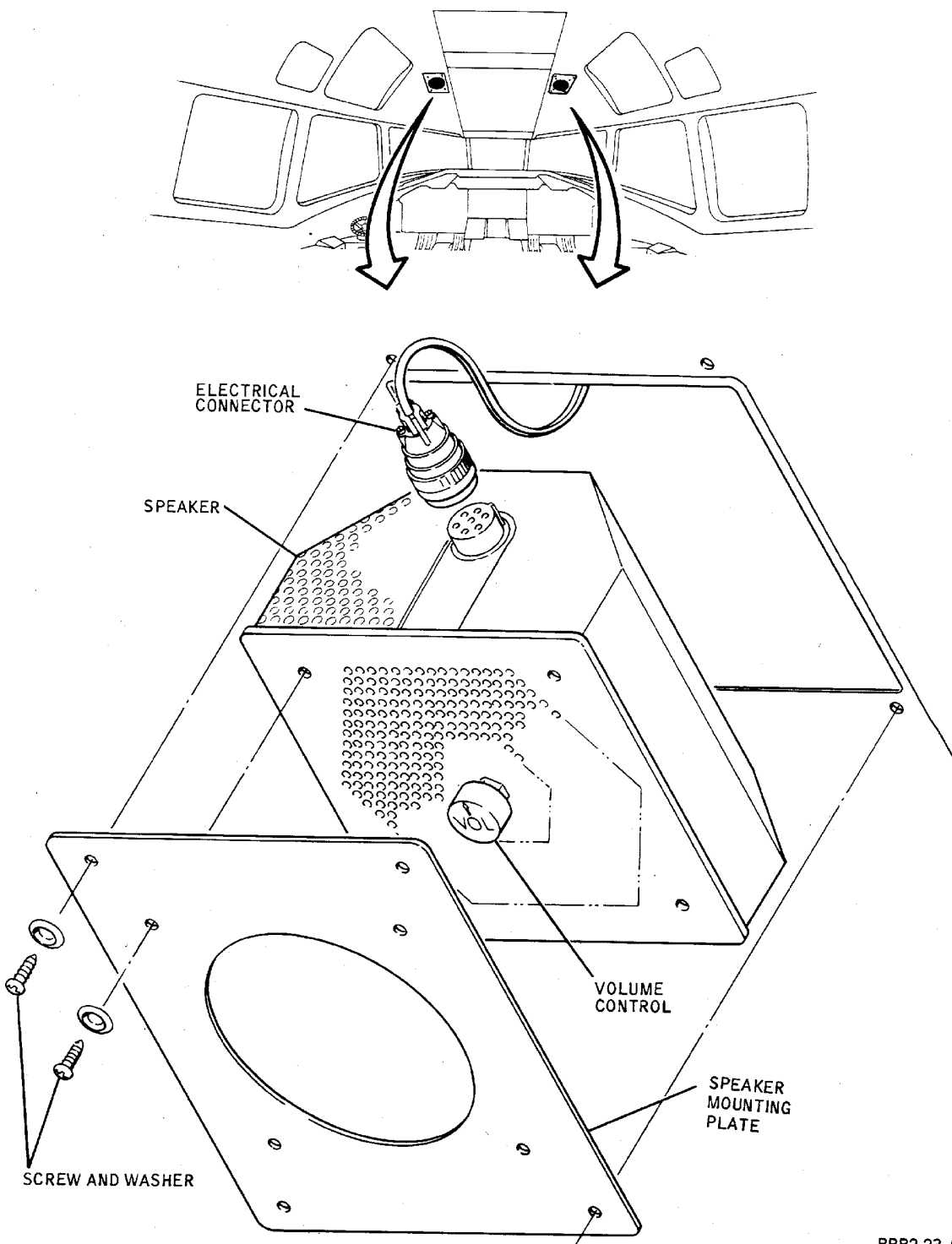
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BBB2-23-9A

**Flight Compartment Speaker -- Removal/Installation**  
Figure 201/23-50-03-990-805 (Sheet 2 of 2)

**EFFECTIVITY**

WJE 401-406, 409, 410, 412, 414-427, 429, 861-866,  
868, 869, 871-879, 881, 883, 884, 886, 887, 891-893

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## 23-50-03

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## RADIO/INTERPHONE SWITCH - MAINTENANCE PRACTICES

### 1. General

- A. A radio/interphone switch is installed on the outboard horn of the Captain's and First Officer's control wheels.
- B. The removal/installation procedures are identical for each switch.

### 2. Removal/Installation Radio/Interphone Switch

- A. Remove 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.

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

#### **LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

#### **OVERHEAD EMERGENCY DC BUS**

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	10	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

#### **WJE 410**

A	11	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

B	8	B10-7	VHF COMM-1
---	---	-------	------------

#### **WJE 410**

B	9	B10-7	VHF COMM-1
---	---	-------	------------

#### **UPPER EPC, LEFT RADIO DC BUS**

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

**WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883**

G	16	B10-176	VHF COMM-3
---	----	---------	------------

#### **UPPER EPC, RIGHT RADIO DC BUS**

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

#### **WJE ALL**

G	5	B10-44	VHF COMM-2
---	---	--------	------------

- (2) On control wheel, remove switch setscrew.
- (3) Pull switch outward until electrical connections are out of control wheel horn and accessible for removal.
- (4) Disconnect electrical connections.

- B. Install Switch

EFFECTIVITY  
WJE ALL

# 23-50-04

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:

### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1

### WJE 410

A	11	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

B	8	B10-7	VHF COMM-1
---	---	-------	------------

### WJE 410

B	9	B10-7	VHF COMM-1
---	---	-------	------------

### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

- (2) Connect electrical connections.  
 (3) Insert electrical connections and wiring into horn.  
 (4) Align locating key on switch with detent in horn and install setscrew.  
 (5) Remove the safety tags and close these circuit breakers:

### LOWER EPC, XFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1

### WJE 410

A	11	B10-47	FLIGHT INTERPHONE-1
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EFFECTIVITY  
WJE ALL

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### WJE 410 (Continued)

(Continued)

#### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
B	8	B10-7	VHF COMM-1
<b>WJE 410</b>			
B	9	B10-7	VHF COMM-1

#### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 875-879, 881, 883</b>			
G	16	B10-176	VHF COMM-3

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
G	5	B10-44	VHF COMM-2

### 3. Adjustment/Test Radio/Interphone Switch

#### A. Test Radio/Interphone Switch

- (1) Connect boom microphone and headset at position in which repair was made and establish two-way communication between CAPT (Captain) and First Officer (F/O) positions.
- (2) On cockpit speakers, set volume control to midrange.
- (3) On audio control panel, press INT microphone selector switch and set INT volume control to midrange.

#### **WJE 401-404, 407, 408, 410-412, 414, 874-880, 892, 893**

- (4) On control wheel, press and hold press-to-talk switch.

#### **WJE 405, 406, 409, 415-427, 429, 861-866, 868, 869, 871, 872, 881, 883, 884, 886, 887, 891**

- (5) On control wheel, press and hold press-to-talk switch to INTER (forward) position.

#### **WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893**

- (6) Speak into boom microphone. Clear audio should be available in headset and speakers should be muted. Release press-to-talk switch.

#### **WJE 886, 887**

- (7) Speak into boom microphone. Clear audio should be available in headset and speaker at communicating station should be muted. Release control wheel switch.

#### **WJE 405, 407-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873, 874, 877, 880, 884, 891-893**

- (8) On audio panel, press VHF-1 or -2 mic selector switch and position applicable VHF volume control to midrange.

#### **WJE 401-404, 406, 412, 414, 417, 419, 421, 423, 865, 869, 871, 872, 881, 883**

- (9) On audio panel, press VHF-1, -2, or -3 MIC SEL switch and applicable VHF volume control. Turn volume control to midrange.

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WJE ALL

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### WJE 401-404, 412, 414, 875, 876, 878, 879

- (10) On audio panel, press VHF-1, -2, or -3 microphone selector switch and position applicable VHF volume control lever to midrange.

### WJE 401-404, 407, 408, 410-412, 414, 873-880, 892, 893

- (11) On control wheel, press and hold press-to-talk switch. Establish two-way communication with radio tower. Clear audio should be available in headset and both speakers should be muted.

### WJE 405, 406, 409, 415-427, 429, 861-866, 868, 869, 871, 872, 881, 883, 884, 886, 887, 891

- (12) On control wheel, press and hold press-to-talk switch in RADIO (aft) position. Establish two-way communication with radio tower. Clear audio should be available in headset and both speakers should be muted.

### WJE 401-406, 409, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 881, 883, 884, 886, 887, 891

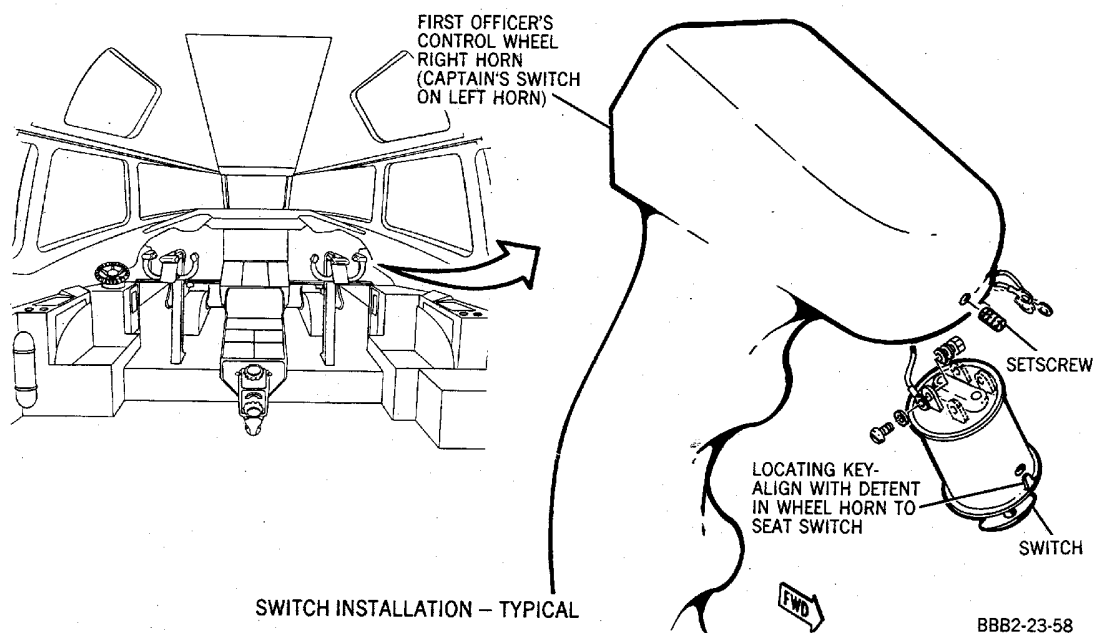
- (13) Release switch.

### WJE 407, 408, 410, 411, 873, 874, 880, 892, 893

- (14) Release switch. Audio side tone should be clear.

### WJE ALL

- (15) Return airplane to required configuration.



Radio/Interphone Switch - Removal/Installation  
Figure 201/23-50-04-990-801

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WJE ALL

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL  
JACK PANEL - MAINTENANCE PRACTICES**

**1. General**

**WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893**

- A. Two jack panels are provided in the flight compartment. The panels are located on the Captain's and First Officer's consoles. The jack panel provides receptacles for BOOM HEADSET and BOOM MICROPHONE. Two switches identified BOOM-MASK and NORMAL-MASK PA are provided for boom headset and microphone, oxygen mask microphone communications, or passenger address capabilities.

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

- B. Three jack panels are provided in the flight compartment. The panels are located on the Captain's and First Officer's consoles and at the Observer's position. The jack panel provides receptacles for HEADSET, BOOM MICR., MASK MICR., and HAND MICR. capabilities.

**WJE ALL**

**2. Removal/Installation Jack Panel**

- A. Remove jack panel

**WJE 412, 414-427, 429, 861-866, 868, 869, 871, 872, 891**

NOTE: Panel light circuit breakers are listed for Captain's, First Officer's and Observer's positions. Open only circuit breakers applicable to work area.

**WJE 401-411, 873-881, 883, 884, 886, 887, 892, 893**

NOTE: Panel light circuit breakers are listed for Captain's, and First Officer's positions. Open only circuit breakers applicable to work area.

**WJE ALL**

**WARNING**: TAG AND SAFETY CIRCUIT BREAKERS.

**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 DC BUS**

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

**WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893**

A	10	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

**WJE 410**

A	11	B10-47	FLIGHT INTERPHONE-1
---	----	--------	---------------------

**WJE ALL**

**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	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
---	----	--------	------------------------------------

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WJE ALL

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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

- (2) On jack panel, release fasteners and lift panel until electrical connector is accessible.
- (3) Disconnect electrical connector from jack panel and install dust caps.

#### B. Install Jack 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:

### OVERHEAD EMERGENCY DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1
<b>WJE ALL</b>			

### 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	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT

### 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 dust caps and connect electrical connector to jack panel.
- (3) Insert jack panel into console and lock fasteners.
- (4) 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>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1
<b>WJE ALL</b>			

### 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	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT

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WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 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

### 3. Adjustment/Test Jack Panel

#### A. Test Jack Panel

#### **WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893**

- (1) On jack panel at Captain's, First Officer's positions, connect headset and boom microphone to BOOM HEADSET and BOOM MICROPHONE receptacles.

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

- (2) On jack panel at Captain's, First Officer's and Observer's positions, connect hand microphones to HAND MICR. jacks.
- (3) Connect headsets to HEADSET jacks.

#### **WJE ALL**

- (4) On Captain's and First Officer's cockpit speakers, place volume control to mid position.
- (5) On Captain's and First Officer's audio control panel, make sure INT toggle switch is in INT position.

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

- (6) Connect boom microphones to BOOM MICR. and MASK MICR. connectors at each position.

#### **WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893**

- (7) On control wheel at Captain's position, press and hold press-to-talk switch and establish two-way communication between Captain's and First Officer's positions. Audio should be clear.

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

- (8) Speak into Captain's boom microphone and verify both cockpit speakers become muted.

#### **WJE 412, 414**

- WJE** (9) Speak into Captain's boom microphone and verify Captain's cockpit speaker becomes muted.

#### **WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893**

- (10) On control wheel at First Officer's position, place and hold press-to-talk switch position and establish two-way communication between First Officer's and Captain's positions.

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

- (11) On control wheel at First Officer's position, press and hold press-to-talk switch in INTER (forward) position.

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

- (12) Speak into First Officer's microphone and verify both cockpit speakers become muted.

#### **WJE 412, 414**

- WJE** (13) Speak into First Officer's microphone and verify First Officer's cockpit speaker becomes muted.
- WJE**

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WJE ALL

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

- (14) At Captain's position, actuate press-to-talk switch on hand microphone and establish two-way communication to First Officer's, Observer's, ground power panel, and avionics compartment positions.
- (15) On control wheel at Captain's position, place and hold press-to-talk switch in INTER (forward) position. Establish two-way communication between Captain's and First Officer's positions. Audio should be clear.

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

- (16) Speak into First Officer's microphone and verify both cockpit speakers become muted.

### WJE ALL

- (17) On Captain's audio panel, place and hold RADIO-INTER switch to INTER and establish two-way communication between Captain's and First Officer's positions. Audio should be clear.

### WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893

- (18) Speak into Captain's boom microphone and verify both cockpit speakers become muted. Release switch.

### WJE ALL

- (19) On First Officer's audio panel, place and hold RADIO-INTER switch to INTER. Establish two-way communication between First Officer's and Captain's positions. Audio should be clear.

### WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893

- (20) Speak into First Officer's boom microphone and verify both cockpit speakers become muted. Release switch.

### WJE ALL

- (21) Return aircraft to required configuration.

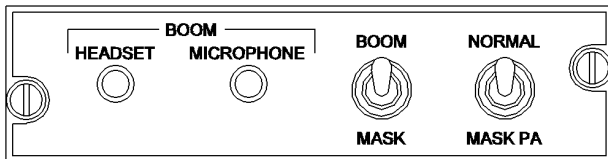
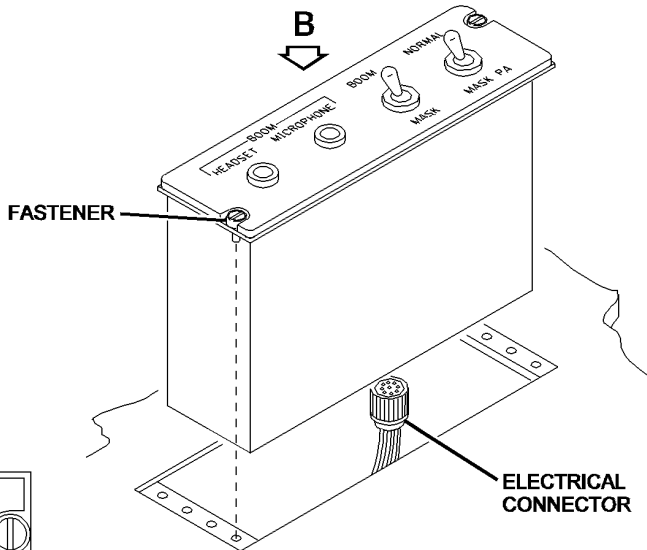
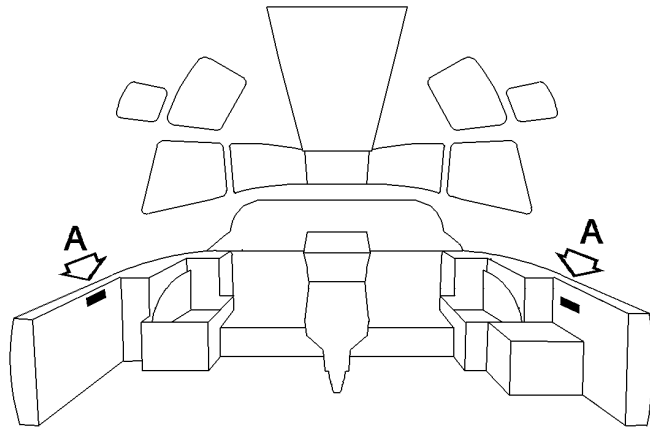
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WJE ALL

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**VIEW B**

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S0006531870V3

**Jack Panel - Removal/Installation  
Figure 201/23-50-05-990-801 (Sheet 1 of 3)**

EFFECTIVITY  
WJE 401-411, 873-881, 883, 884, 886, 887, 892, 893

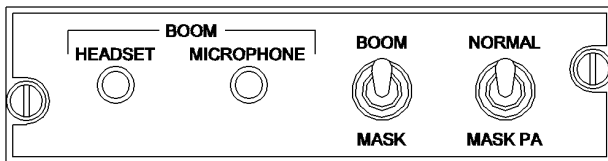
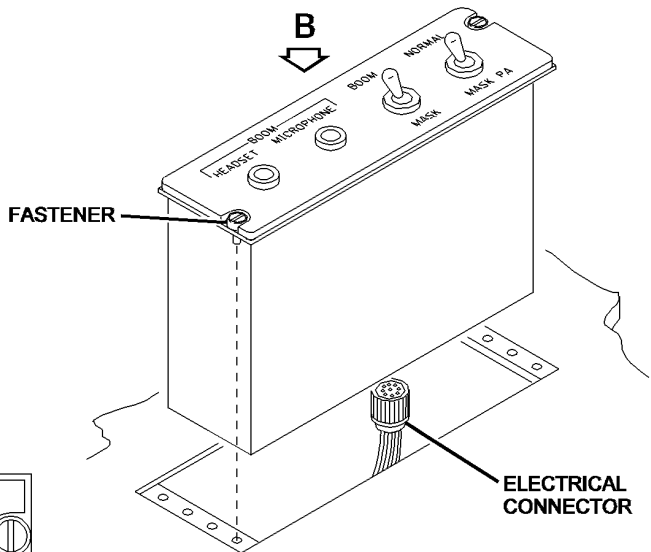
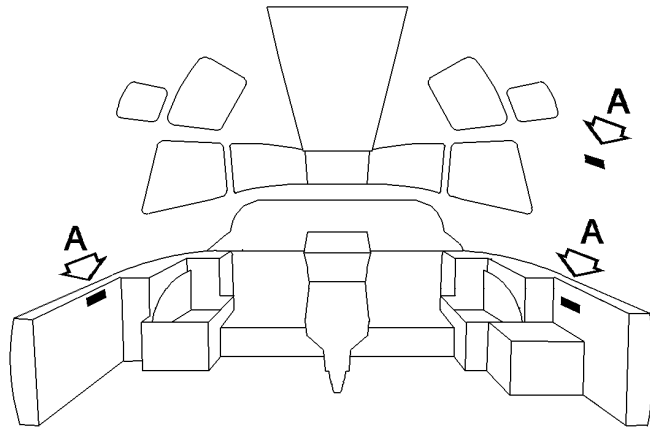
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**VIEW B**

**TYPICAL INSTALLATION  
VIEW A**

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WJE  
WJE

**Jack Panel - Removal/Installation  
Figure 201/23-50-05-990-801 (Sheet 2 of 3)**

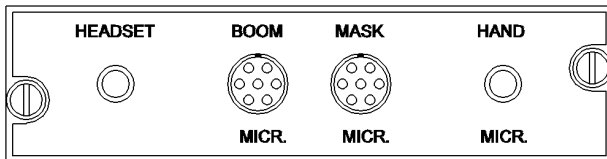
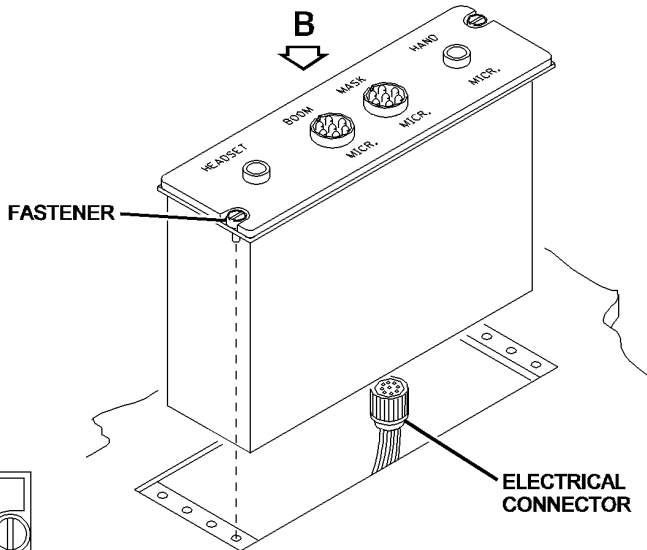
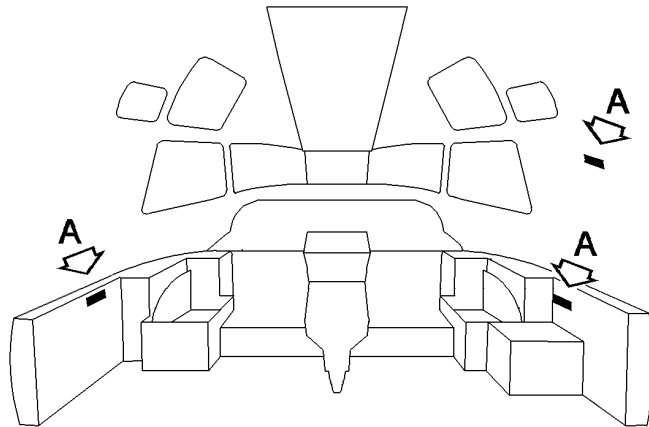
EFFECTIVITY  
WJE 412, 414

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**VIEW B**

**TYPICAL INSTALLATION  
VIEW A**

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**Jack Panel - Removal/Installation  
Figure 201/23-50-05-990-801 (Sheet 3 of 3)**

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

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### STATIC DISCHARGING - DESCRIPTION AND OPERATION

#### 1. General

- A. The static dischargers are used to dissipate the static electric charge that accumulates on the aircraft during flight. The electric charge is the result of the impingement of precipitation and dust particles in the atmosphere. The static dischargers dissipate the accumulated static charge in such a manner to reduce the noise generated by the associated corona discharge and to minimize the subsequent noise which is coupled into certain communication and navigation systems. The static dischargers are located on the tip and trailing edge of the wings, stabilizers, and the tail cone.
- B. There are two types of static dischargers: pin type (Figure 1) and carbon type (Figure 2). Pin type dischargers are yellow and have sharp pins near the tip. Carbon type dischargers are black and have a smooth carbon-epoxy tip. Both types are interchangeable and mount in the same type retainer.

#### 2. Static Discharger Components

##### A. Description

- (1) The Static Dischargers - The static dischargers are installed in two types of locations on the aircraft, the tip installations and the trailing edge installation (Figure 1). The two installations are very similar, except the trailing edge installation has a longer shaft. Each discharger is attached to a retainer, which is installed on the aircraft surface. The shaft of the static discharger is a molded nylon rod.

NOTE: The pin guard consists of molded nylon protrusions on the end of pin-type dischargers. The pin is located between the protrusions on the pin guard and is electrically bonded to the high resistance material of the discharger.

- (2) The Retainers - The retainers are a functional part of the static discharger. Retainers are attached to the aircraft surfaces with adhesive and rivets or screws on carbon composite surfaces. The retainers are installed without the discharger attached. During installation make certain the discharger is properly seated on the retainer before securing the set screw.

##### B. Operation

- (1) The static dischargers dissipate the static electric charge that accumulates on the aircraft during flight. The dischargers provide a means of controlling the points from which corona discharge occur by having a corona threshold level below that of any other point on the aircraft. The dischargers are also designed to provide decoupling of the discharge from aircraft antenna systems thus reducing the static noise coupled into the aircraft communication and navigation systems.

##### C. To Operate System

- (1) There are no operating controls or power required for the static dischargers to operate. The static dischargers function automatically when airflow is directed across the surface of the discharger tip. The airflow across the tip causes static electric charge built up on the aircraft skin to bleed off into the atmosphere.

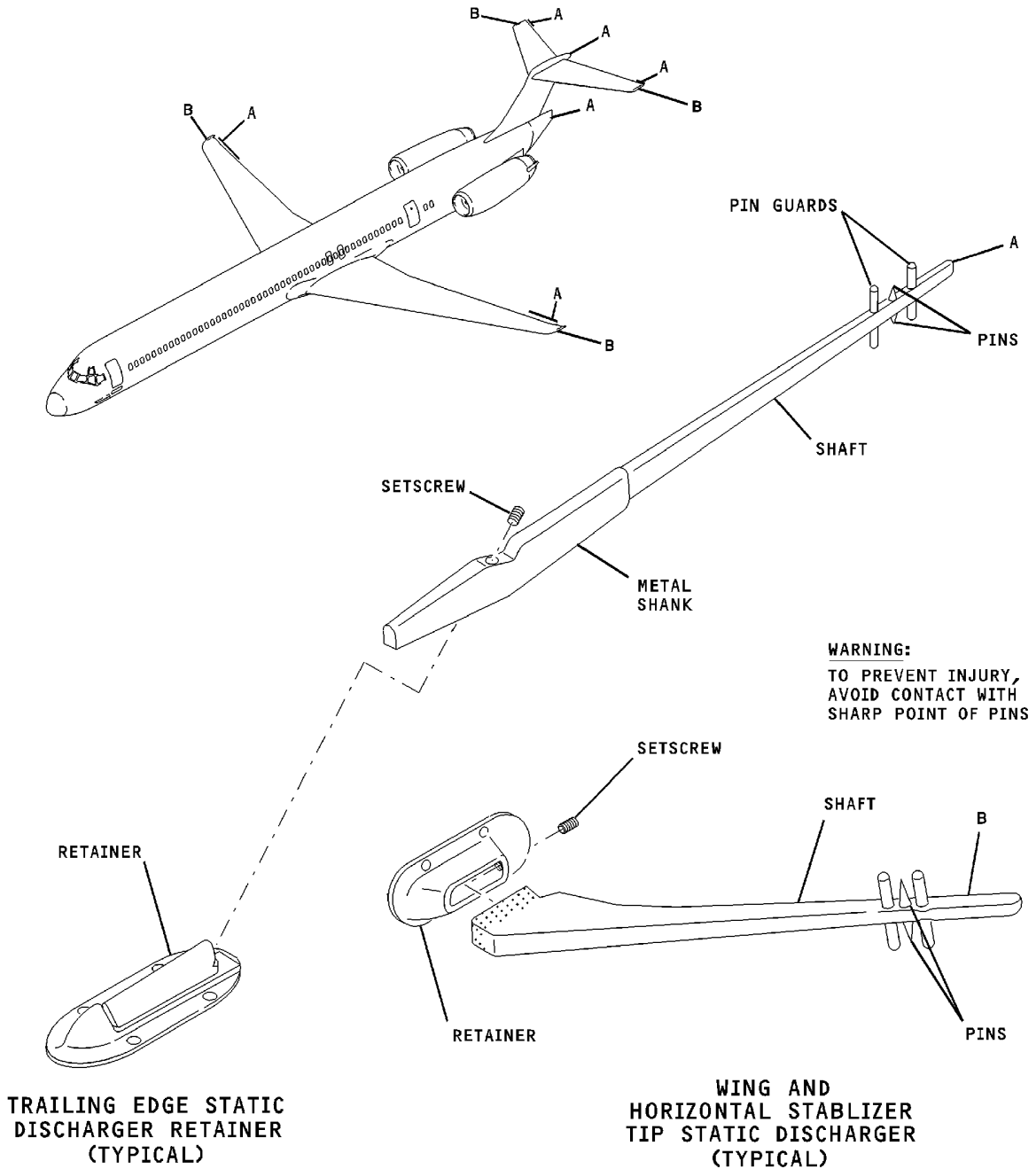
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CAG(IGDS)

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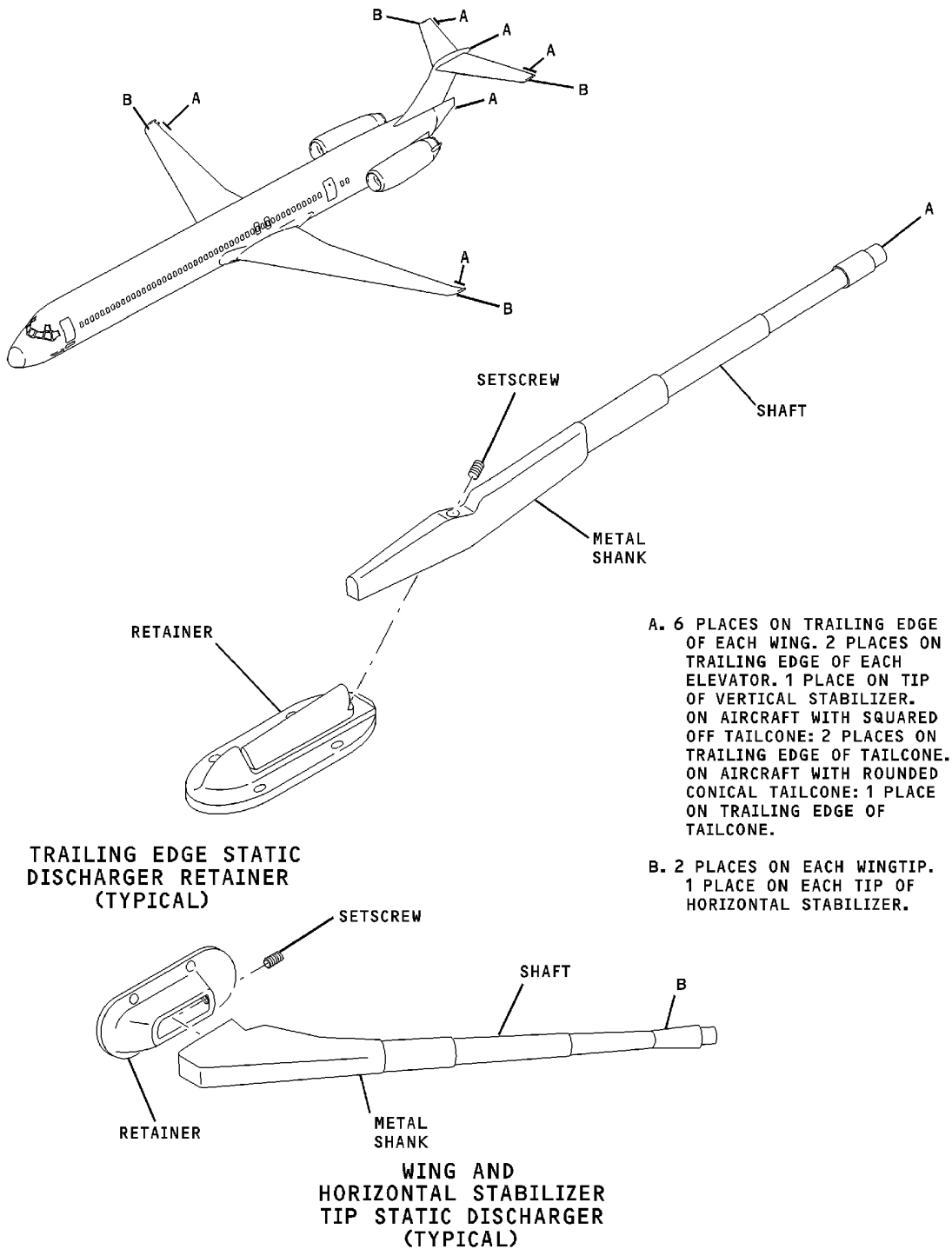
**Pin Type Static Discharger Installation  
Figure 1/23-60-00-990-801**

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CAG(IGDS)

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**Carbon Type Static Discharger Installation  
Figure 2/23-60-00-990-802**

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**AIRCRAFT MAINTENANCE MANUAL**  
**STATIC DISCHARGERS - ADJUSTMENT/TEST**

**1. General**

A. This section provides adjustment/test procedures for the static dischargers. The static dischargers are located along the trailing edge of the wings, and the vertical and horizontal stabilizers (Figure 501 and Figure 502).

**2. Equipment and Materials**

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

**Table 501**

Name and Number	Manufacturer
Megohmmeter, Model 1862-C	General Radio
Milliohmmeter, Model 673-D ( 0.001-100 milliohms)	Shallcross Mfg. Co.
Steel wool	Commercially available

**3. Adjustment/Test Static Dischargers**

**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

**WARNING:** THE MEGOHMMETER HAS A HIGH DC VOLTAGE OUTPUT. MAKE SURE THE TEST LEADS HAVE THE CORRECT INSULATION AND ARE CORRECTLY ATTACHED. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

**CAUTION:** DO NOT USE HIGH CURRENT TEST SETS. HEAT CAUSED BY CONTINUOUS HIGH CURRENT FLOW CAN DAMAGE ADHESIVE BONDING. BE CAREFUL WHEN YOU ATTACH THE TEST CLIPS TO THE DISCHARGER PINS. THIS CAN CAUSE DAMAGE TO THE DISCHARGER PINS OR THEY CAN BEND.

A. Test Dischargers

(1) Tip Installed Dischargers, Internal Resistance Check

- (a) On pin type dischargers (Figure 503), check internal resistance between the discharger pins and the retainer. Carefully connect one test lead of the megohmmeter to a discharger pin and the other test lead from the megohmmeter to the retainer. Resistance should be 6 to 120 megohms.
- (b) On carbon type dischargers (Figure 504), check internal resistance between the carbon tip and the metal shank. Carefully connect one test lead from the megohmmeter to the metal shank and the other test lead from the megohmmeter to a pad of steel wool pressed against the carbon tip of the discharger. Resistance should be 6 to 120 megohms.

On carbon type dischargers only, the resistance between the discharger and aircraft structure must be checked (Figure 505). Connect one test lead from the milliohmmeter to the discharger metal shank and the other test lead from the milliohmmeter to a close by, unpainted point on metal aircraft structure or skin. Resistance should be 100 milliohms (0.1 ohms) maximum. If resistance is out of limits, the retainer and discharger may require cleaning or replacement.

(2) Trailing Edge Installed Dischargers, Internal Resistance Check.

EFFECTIVITY WJE ALL
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**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

**WARNING:** THE MEGOHMMETER HAS A HIGH DC VOLTAGE OUTPUT. MAKE SURE THE TEST LEADS HAVE THE CORRECT INSULATION AND ARE CORRECTLY ATTACHED. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

- (a) On pin type dischargers (Figure 506), check internal resistance between the discharger pins and the metal shank. Carefully connect one test lead of the megohmmeter to a discharger pin and the other test lead from the megohmmeter to the metal shank of the discharger. Resistance should be 6 to 200 megohms.
  - (b) On carbon type dischargers (Figure 507), check internal resistance between the carbon tip and the metal shank. Carefully connect one test lead from the megohmmeter to the metal shank and the other test lead to a pad of steel wool pressed against the carbon tip of the discharger. Resistance should be 6 to 120 megohms.
- (3) Trailing Edge Installed Dischargers To Aircraft Structure Resistance Check.

**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

- (a) On trailing edge installed dischargers mounted on aluminum surfaces, the resistance between the discharger and aircraft structure must be checked (Figure 508). Connect one test lead from the milliohmmeter to the discharger metal shank and the other test lead from the milliohmmeter to a close by, unpainted point on metal aircraft structure or skin. Resistance should be 100 milliohms (0.1 ohms) maximum. If resistance is out of limits, the retainer and discharger may require cleaning or replacement.
  - (b) On trailing edge installed dischargers mounted on carbon epoxy surfaces, the resistance between the discharger and aircraft structure must be checked (Figure 510). Connect one test lead from the milliohmmeter to the discharger metal shank and the other test lead from the milliohmmeter to a close by, unpainted point on metal aircraft structure or skin. Resistance should be 5 to 10 ohms. If resistance is out of limits, the retainer and discharger may require cleaning or replacement.
- (4) Retainer Installation Resistance Check

**NOTE:** Trailing edge retainers installed on aluminum surfaces are checked by the same procedures as wingtip and horizontal stabilizer tip retainers.

- (a) On retainers mounted on aluminum surfaces check installation resistance between the retainer and the aluminum surface it is mounted to. Connect one milliohmmeter test lead to the retainer and the other test lead to an unpainted point on the aluminum surface. Resistance should be 100 milliohms (0.1 ohms) maximum. If installation resistance is found to be out of limits, the retainer should be replaced (Figure 509).

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- (b) On retainers mounted on carbon epoxy surfaces check installation resistance between the the retainer and the nearest metal aircraft structure. Connect one milliohmmeter test lead to the retainer and the other test lead to an unpainted point on metal aircraft structure. In-service retainers should have bond resistance of 10 ohms maximum. Newly installed retainers should have bond resistance of 5 ohms maximum. If installation resistance is found to be out of limits, the retainer should be replaced Figure 510.

NOTE: Retainer installation resistance is measured between the retainer and metal aircraft structure. The resistance should be checked with a milliohmmeter for accuracy.

NOTE: On aircraft with carbon epoxy ailerons and elevators, make sure retainer installation resistance measurement is made between aircraft metal structure and the retainer and not between the retainer and the carbon epoxy skin of the aileron. The resistance should be checked with a milliohmmeter for accuracy.

NOTE: A new retainer installation resistance of greater than 5 ohms on carbon epoxy ailerons, indicates retainer is not properly installed.

EFFECTIVITY  
WJE ALL

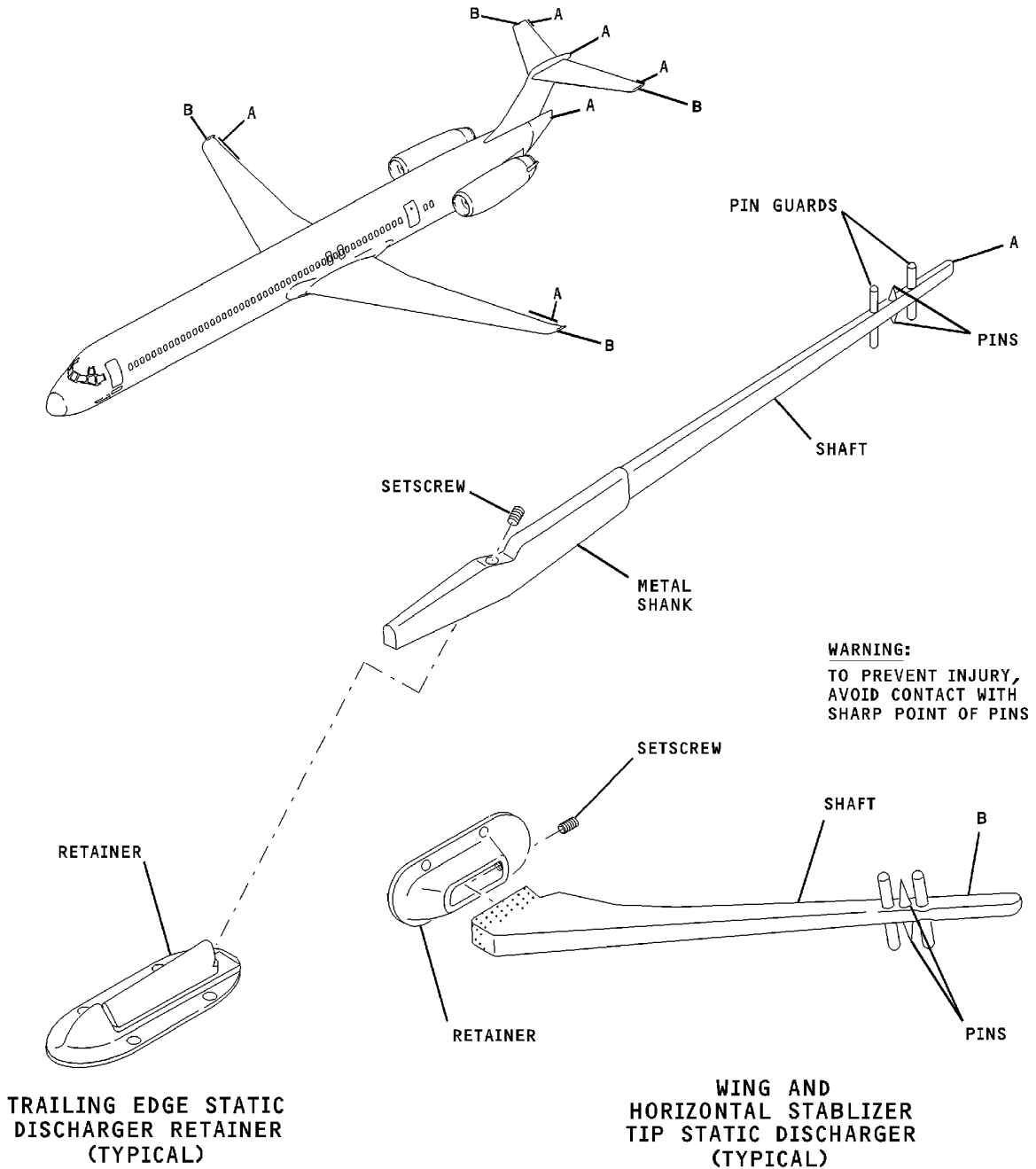
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**TRAILING EDGE STATIC DISCHARGER RETAINER (TYPICAL)**

**WING AND HORIZONTAL STABILIZER TIP STATIC DISCHARGER (TYPICAL)**

CAG(IGDS)

BBB2-23-575A

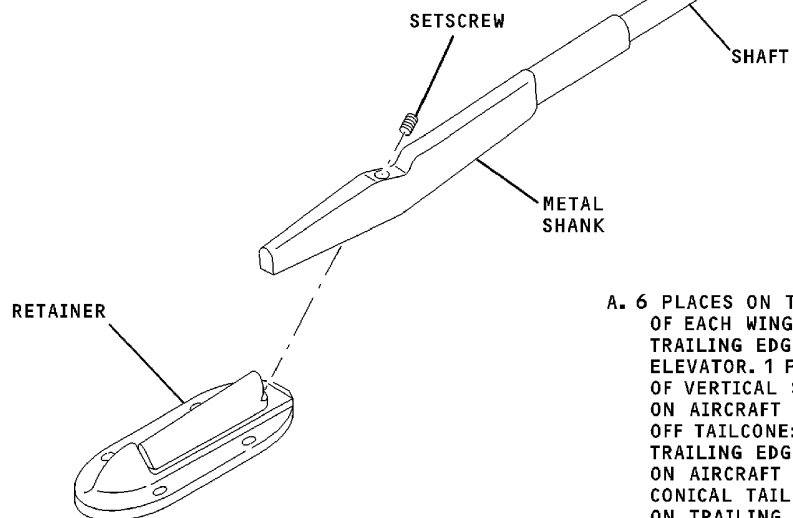
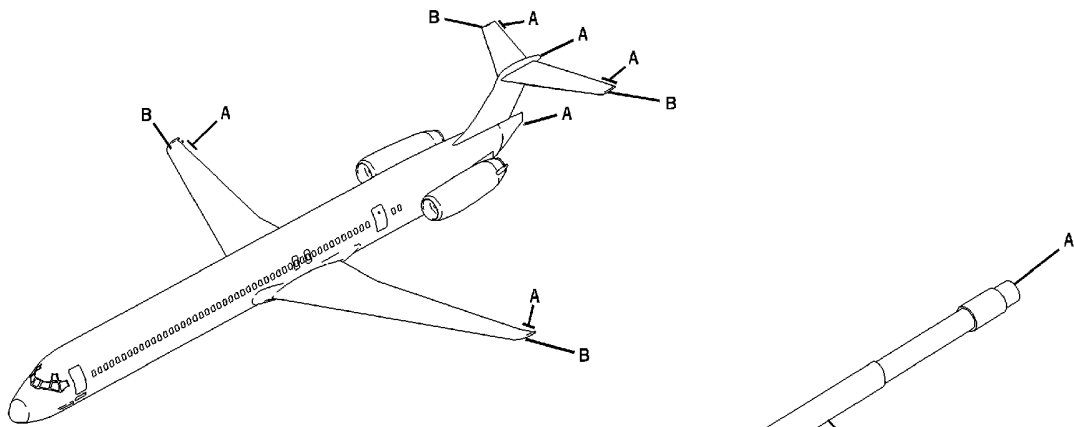
**Pin Type Static Discharger Installation  
Figure 501/23-60-00-990-806**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

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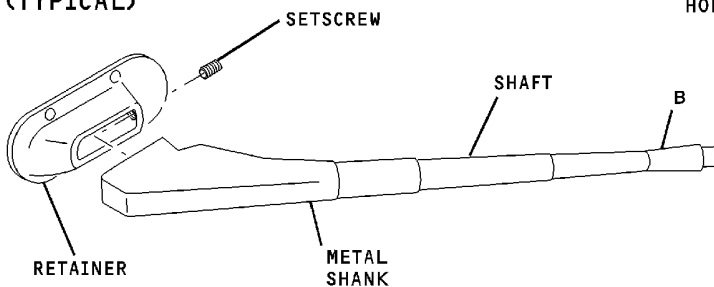
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**TRAILING EDGE STATIC  
DISCHARGER RETAINER  
(TYPICAL)**

**A. 6 PLACES ON TRAILING EDGE  
OF EACH WING. 2 PLACES ON  
TRAILING EDGE OF EACH  
ELEVATOR. 1 PLACE ON TIP  
OF VERTICAL STABILIZER.  
ON AIRCRAFT WITH SQUARED  
OFF TAILCONE: 2 PLACES ON  
TRAILING EDGE OF TAILCONE.  
ON AIRCRAFT WITH ROUNDED  
CONICAL TAILCONE: 1 PLACE  
ON TRAILING EDGE OF  
TAILCONE.**

**B. 2 PLACES ON EACH WINGTIP.  
1 PLACE ON EACH TIP OF  
HORIZONTAL STABILIZER.**



**WING AND  
HORIZONTAL STABILIZER  
TIP STATIC DISCHARGER  
(TYPICAL)**

CAG(IGDS)

BBB2-23-374C

**Carbon Type Static Discharger Installation  
Figure 502/23-60-00-990-808**

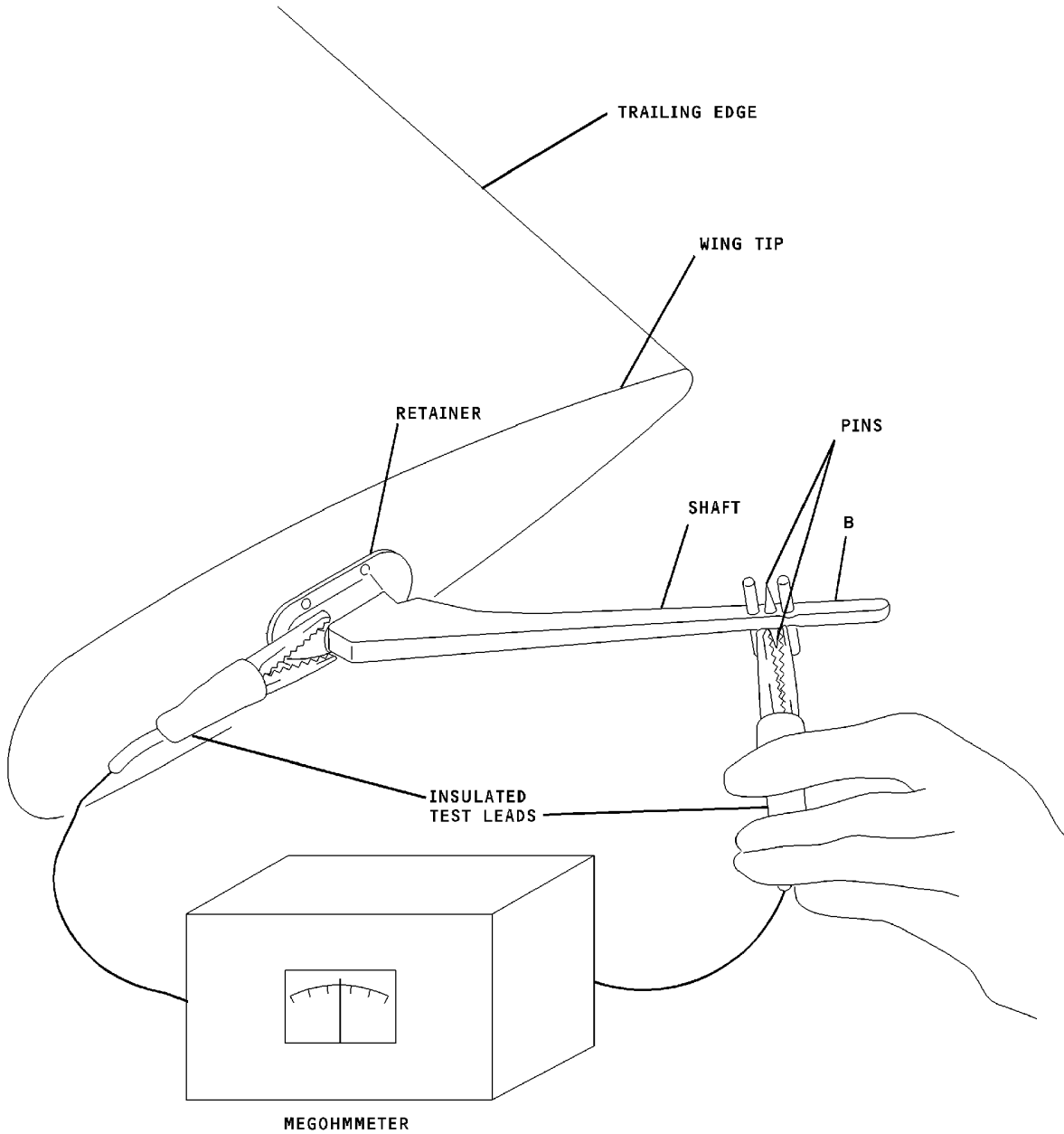
EFFECTIVITY  
WJE ALL

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CAG(IGDS)

BBB2-23-303A

**Pin Type Tip Mounted Static Discharger Internal Resistance Test  
Figure 503/23-60-00-990-809**

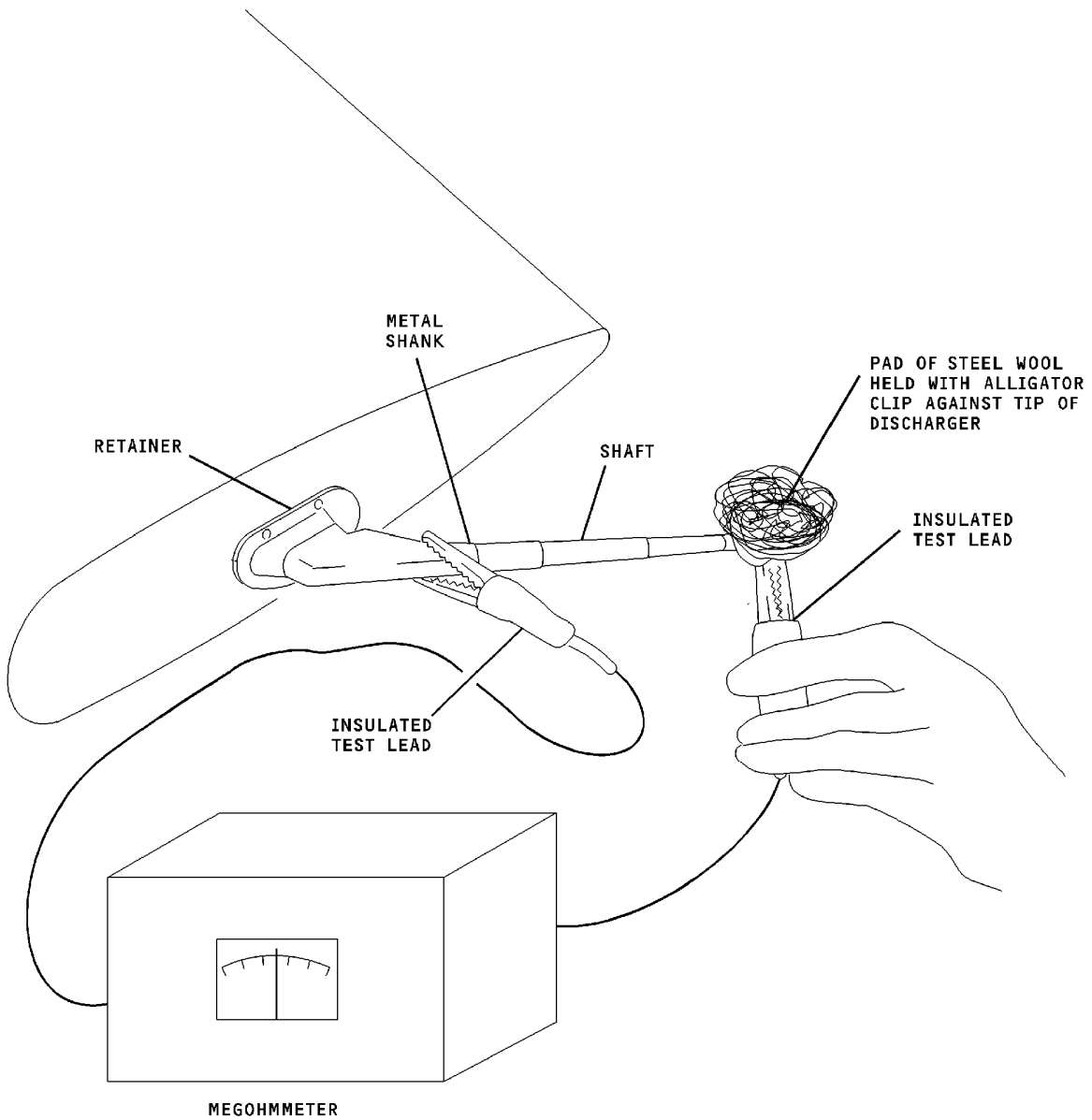
EFFECTIVITY  
WJE ALL

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CAG(IGDS)

BBB2-23-307A

**Carbon Type Tip Mounted Static Discharger Internal Resistance Test  
Figure 504/23-60-00-990-811**

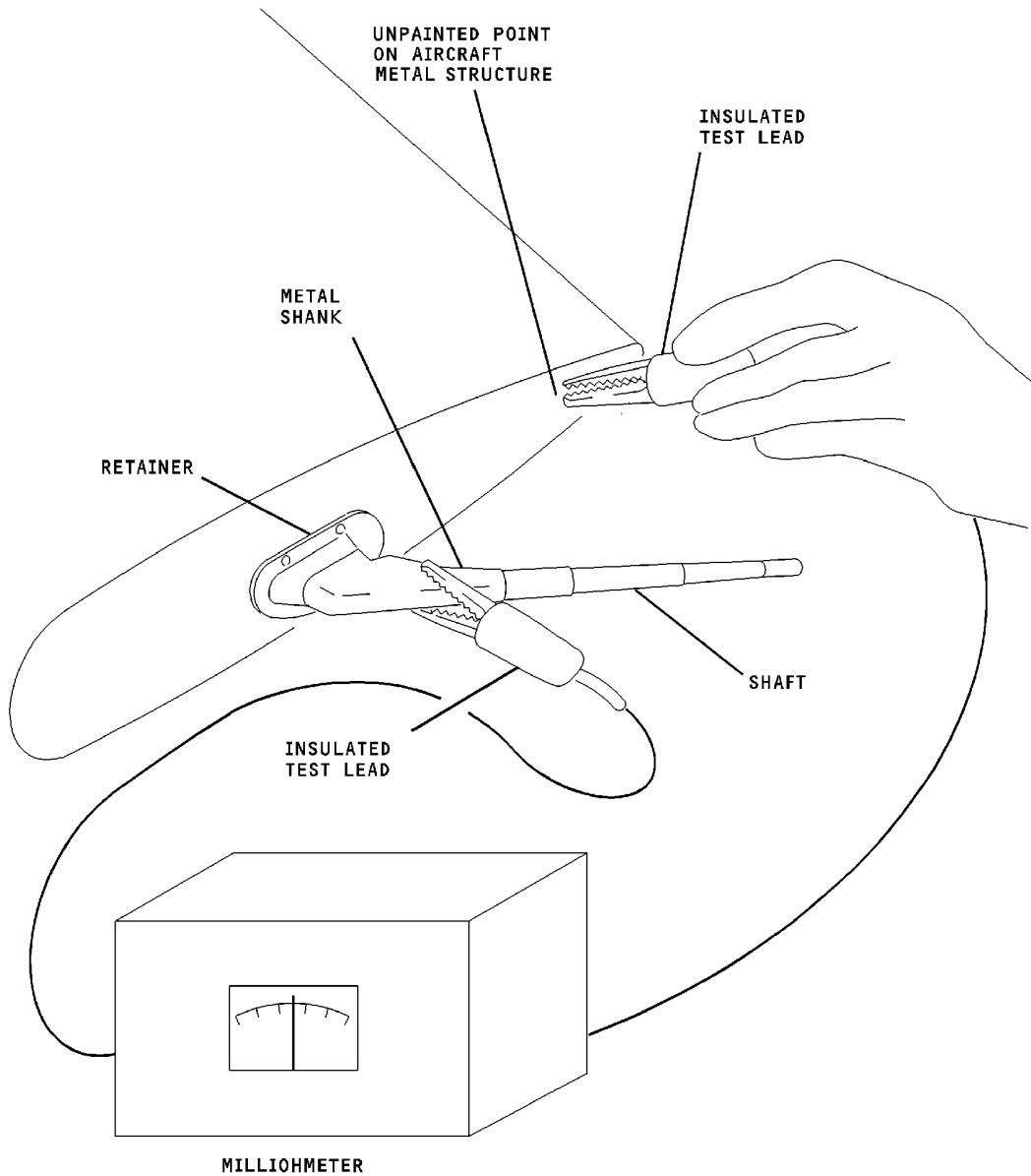
EFFECTIVITY  
WJE ALL

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CAG(IGDS)

BBB2-23-345E

**Carbon Type Tip Mounted Static Discharger To Aircraft Structure Resistance Test  
Figure 505/23-60-00-990-812**

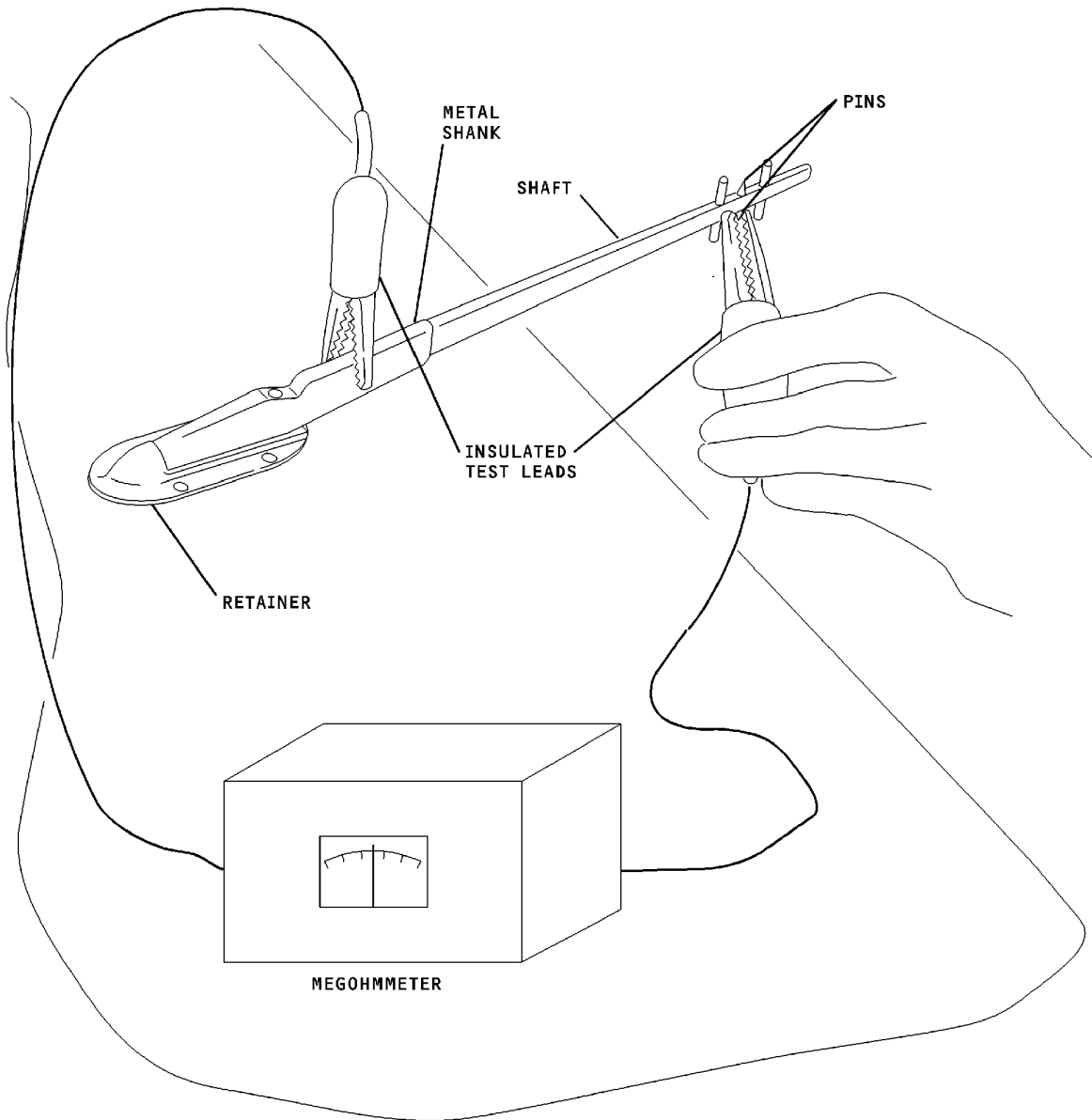
EFFECTIVITY  
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CAG(IGDS)

BBB2-23-308A

**Pin Type Trailing Edge Mounted Static Discharger Internal Resistance Test  
Figure 506/23-60-00-990-813**

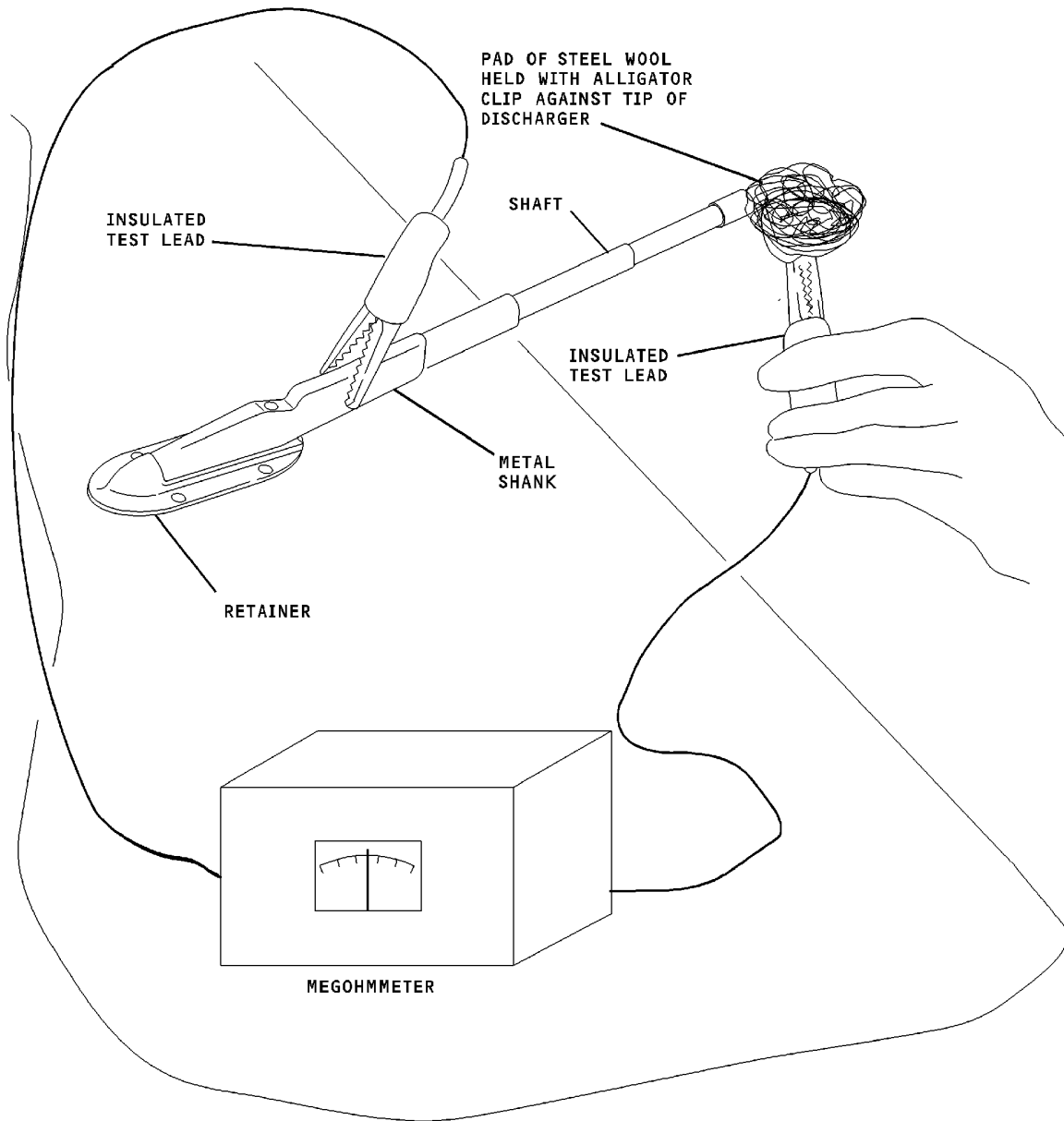
EFFECTIVITY  
WJE ALL

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CAG(IGDS)

BBB2-23-309A

**Carbon Type Trailing Edge Mounted Static Discharger Internal Resistance Test**  
**Figure 507/23-60-00-990-814**

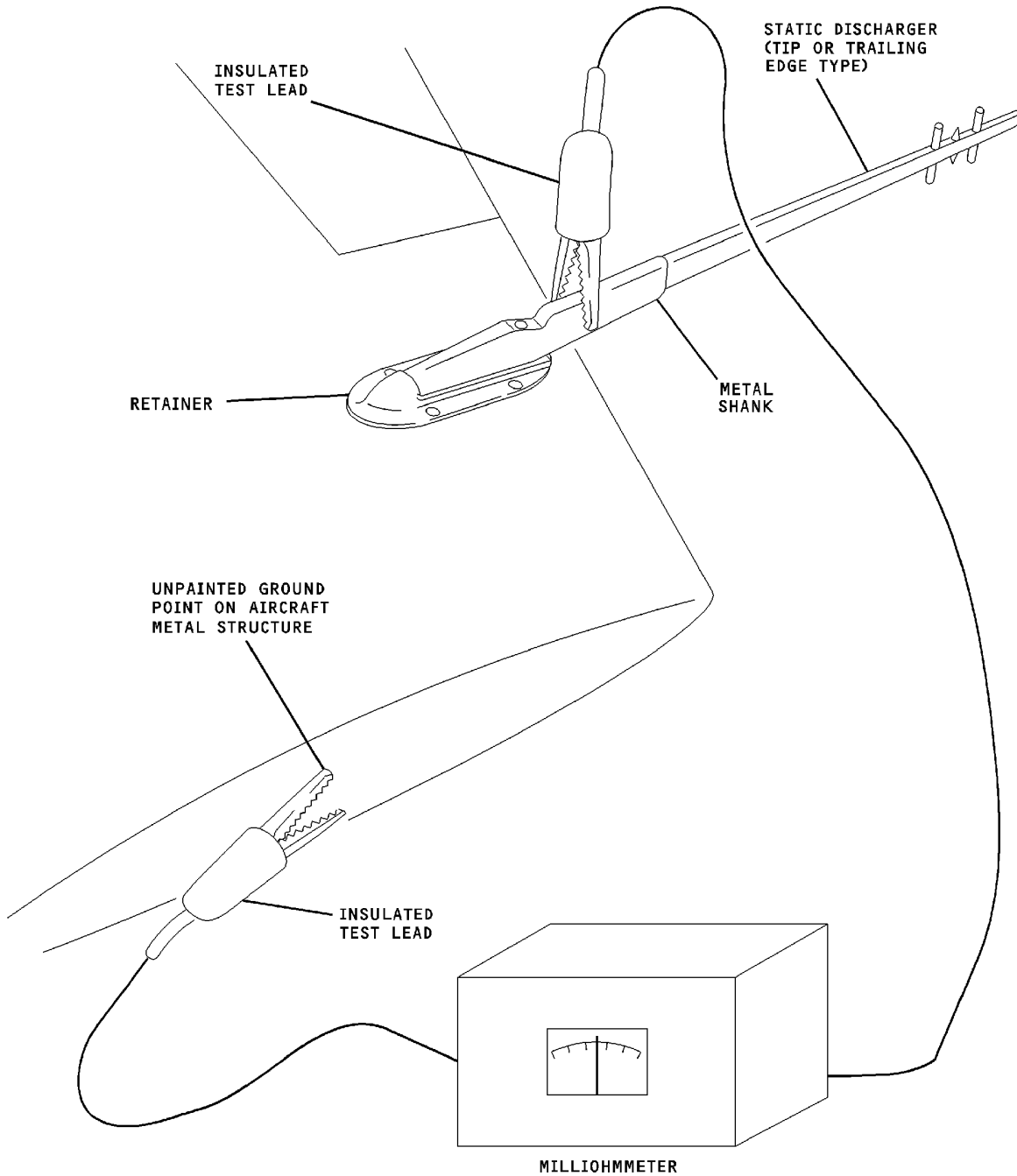
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CAG(IGDS)

BBB2-23-344A

**Typical Trailing Edge Mounted Static Discharger To Aircraft Structure Resistance Test  
Figure 508/23-60-00-990-816**

EFFECTIVITY  
WJE ALL

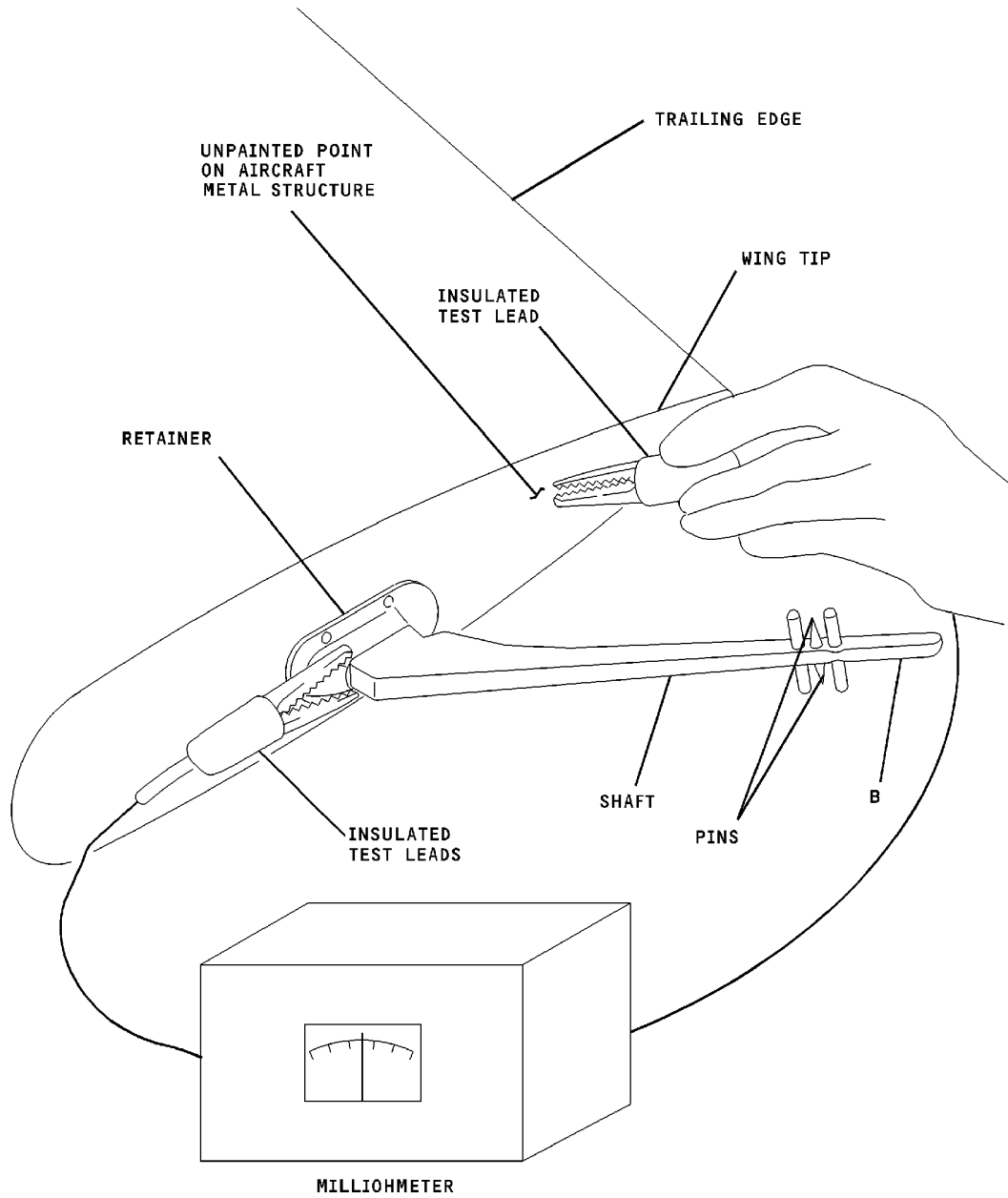
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CAG(IGDS)

BBB2-23-348A

**Typical Retainer Installed On Aluminum Surface Resistance Test  
Figure 509/23-60-00-990-817**

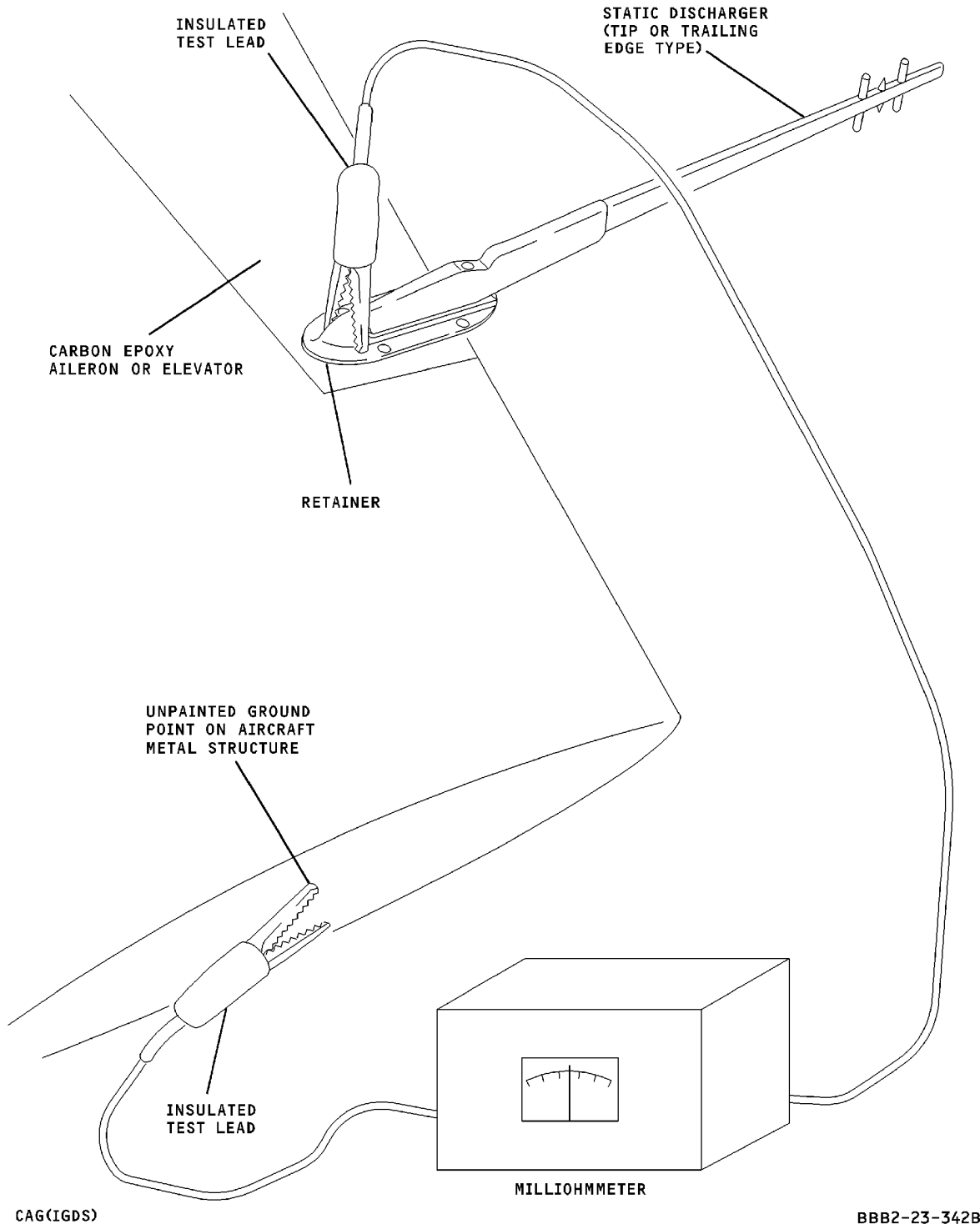
EFFECTIVITY  
WJE ALL

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**Typical Trailing Edge Retainer Mounted On Carbon-Epoxy Surface Resistance Test**  
Figure 510/23-60-00-990-820

EFFECTIVITY  
WJE ALL

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**STATIC DISCHARGING - ADJUSTMENT/TEST**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 23-60-00-720-801**

**2. Functional Check Static Discharging Capability**

NOTE: This procedure is a scheduled maintenance task.

**A. Equipment and Materials**

**Table 501**

Name and Number	Manufacturer
Megohmmeter, Model 1862-C	General Radio
Milliohmmeter, Model 673-D (0.001-100 milliohms)	Shallcross Mfg. Co.
Steel wool	Commercially available

NOTE: It is possible that some materials in the Consumable Materials chart 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.

**B. Static Discharging Capability Functional Check**

SUBTASK 23-60-00-720-001

**WARNING**: DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

**WARNING**: THE MEGOHMMETER HAS A HIGH DC VOLTAGE OUTPUT. MAKE SURE THE TEST LEADS HAVE THE CORRECT INSULATION AND ARE CORRECTLY ATTACHED. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

**CAUTION**: DO NOT USE HIGH CURRENT TEST SETS. HEAT CAUSED BY CONTINUOUS HIGH CURRENT FLOW CAN DAMAGE ADHESIVE BONDING. BE CAREFUL WHEN YOU ATTACH THE TEST CLIPS TO THE DISCHARGER PINS. THIS CAN CAUSE DAMAGE TO THE DISCHARGER PINS OR THEY CAN BEND.

- (1) Do a functional check of the tip installed dischargers internal resistance.
  - (a) On pin type dischargers (Figure 501), check internal resistance between the discharger pins and the retainer. Carefully connect one test lead of the megohmmeter to a discharger pin and the other test lead from the megohmmeter to the retainer. Resistance should be 6 to 120 megohms.

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- (b) On carbon type dischargers (Figure 502), check internal resistance between the carbon tip and the metal shank. Carefully connect one test lead from the megohmmeter to the metal shank and the other test lead from the megohmmeter to a pad of steel wool pressed against the carbon tip of the discharger. Resistance should be 6 to 120 megohms. On carbon type dischargers only, the resistance between the discharger and aircraft structure must be checked (Figure 503). Connect one test lead from the milliohmmeter to the discharger metal shank and the other test lead from the milliohmmeter to a close by, unpainted point on metal aircraft structure or skin. Resistance should be 100 milliohms (0.1 ohms) maximum. If resistance is out of limits, the retainer and discharger may require cleaning or replacement.

SUBTASK 23-60-00-720-002

**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

**WARNING:** THE MEGOHMMETER HAS A HIGH DC VOLTAGE OUTPUT. MAKE SURE THE TEST LEADS HAVE THE CORRECT INSULATION AND ARE CORRECTLY ATTACHED. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

- (2) Do a functional check of the trailing edge installed dischargers internal resistance.
- (a) On pin type dischargers (Figure 504), check internal resistance between the discharger pins and the metal shank. Carefully connect one test lead of the megohmmeter to a discharger pin and the other test lead from the megohmmeter to the metal shank of the discharger. Resistance should be 6 to 200 megohms.

SUBTASK 23-60-00-720-003

**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

**WARNING:** THE MEGOHMMETER HAS A HIGH DC VOLTAGE OUTPUT. MAKE SURE THE TEST LEADS HAVE THE CORRECT INSULATION AND ARE CORRECTLY ATTACHED. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

- (3) Do a functional check of the trailing edge installed dischargers internal resistance.
- (a) On carbon type dischargers (Figure 505), check internal resistance between the carbon tip and the metal shank. Carefully connect one test lead from the megohmmeter to the metal shank and the other test lead to a pad of steel wool pressed against the carbon tip of the discharger. Resistance should be 6 to 120 megohms.

SUBTASK 23-60-00-720-004

**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

- (4) Do a functional check of the trailing edge installed dischargers internal resistance.
- (a) On trailing edge installed dischargers, the resistance between the discharger and aircraft structure must be checked (Figure 506). Connect one test lead from the milliohmmeter to the discharger metal shank and the other test lead from the milliohmmeter to a close by, unpainted point on metal aircraft structure or skin. Resistance should be 100 milliohms (0.1 ohms) maximum. If resistance is out of limits, the retainer and discharger may require cleaning or replacement.

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SUBTASK 23-60-00-720-005

- (5) Do a functional check of the retainer installation resistance.

NOTE: Trailing edge retainers installed on aluminum surfaces are checked by the same procedures as wingtip and horizontal stabilizer tip retainers.

- (a) On retainers mounted on aluminum surfaces check installation resistance between the retainer and the aluminum surface it is mounted to. Connect one milliohm meter test lead to the retainer and the other test lead to an unpainted point on the aluminum surface. Resistance should be 100 milliohms (0.1 ohms) maximum. If installation resistance is found to be out of limits, the retainer should be replaced (Figure 507).

SUBTASK 23-60-00-720-006

- (6) Do a functional check of the retainer installation resistance.

- (a) On retainers mounted on carbon epoxy surfaces check installation resistance between the retainer and the nearest metal aircraft structure. Connect one milliohm meter test lead to the retainer and the other test lead to an unpainted point on metal aircraft structure. In-service retainers should have bond resistance of 10 ohms maximum. Newly installed retainers should have bond resistance of 5 ohms maximum. If installation resistance is found to be out of limits, the retainer should be replaced (Figure 508).

NOTE: Retainer installation resistance is measured between the retainer and metal aircraft structure. The resistance should be checked with a milliohm meter for accuracy.

NOTE: On aircraft with carbon epoxy ailerons and elevators, make sure retainer installation resistance measurement is made between aircraft metal structure and the retainer and not between the retainer and the carbon epoxy skin of the aileron. The resistance should be checked with a milliohm meter for accuracy.

NOTE: A new retainer installation resistance of greater than 5 ohms on carbon epoxy ailerons, indicates retainer is not properly installed.

———— **END OF TASK** ————

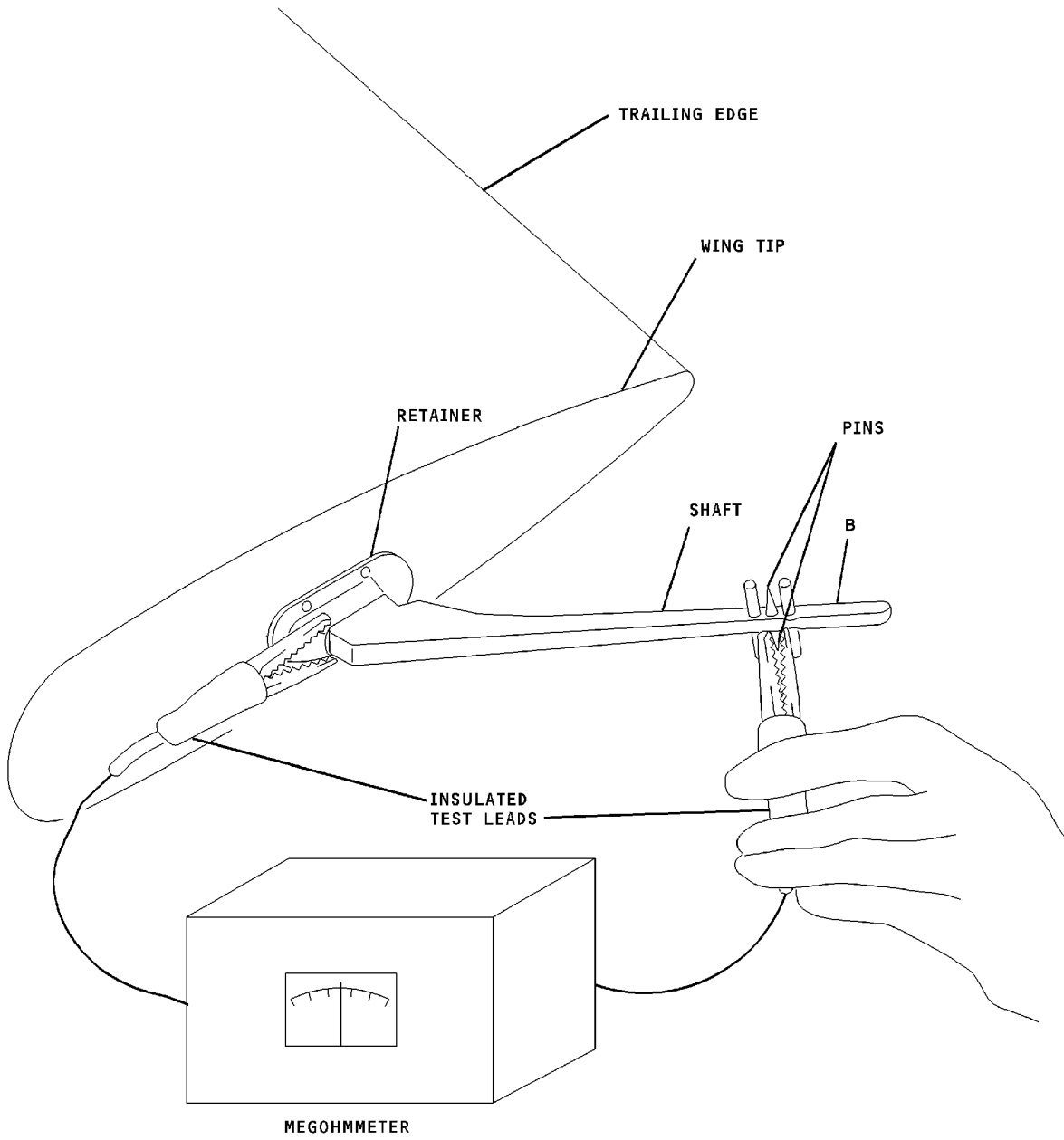
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CAG(IGDS)

BBB2-23-303A

**Pin Type Tip Mounted Static Discharger Internal Resistance Test  
Figure 501/23-60-00-990-824**

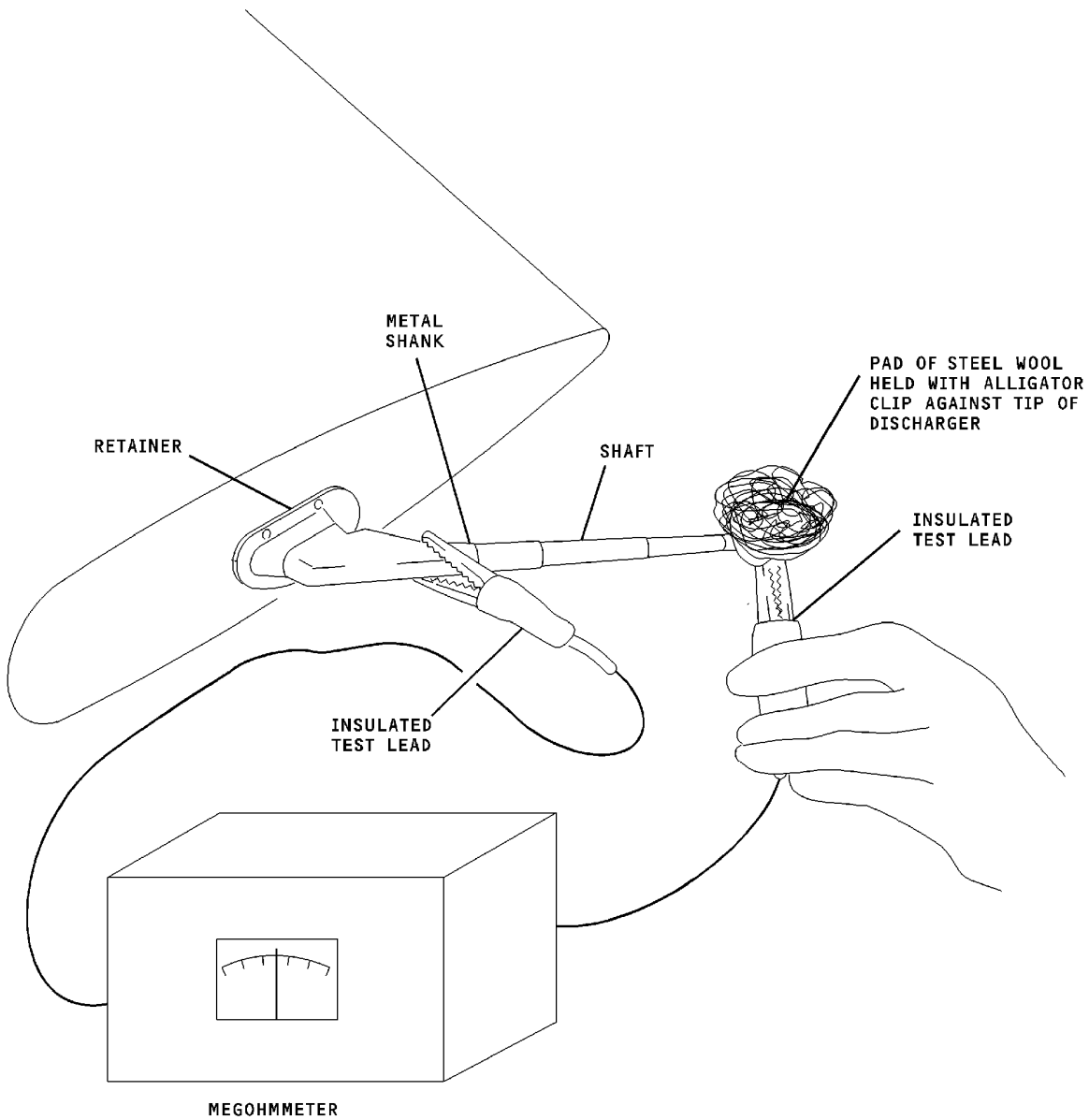
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# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-23-307A

**Carbon Type Tip Mounted Static Discharger Internal Resistance Test**  
**Figure 502/23-60-00-990-826**

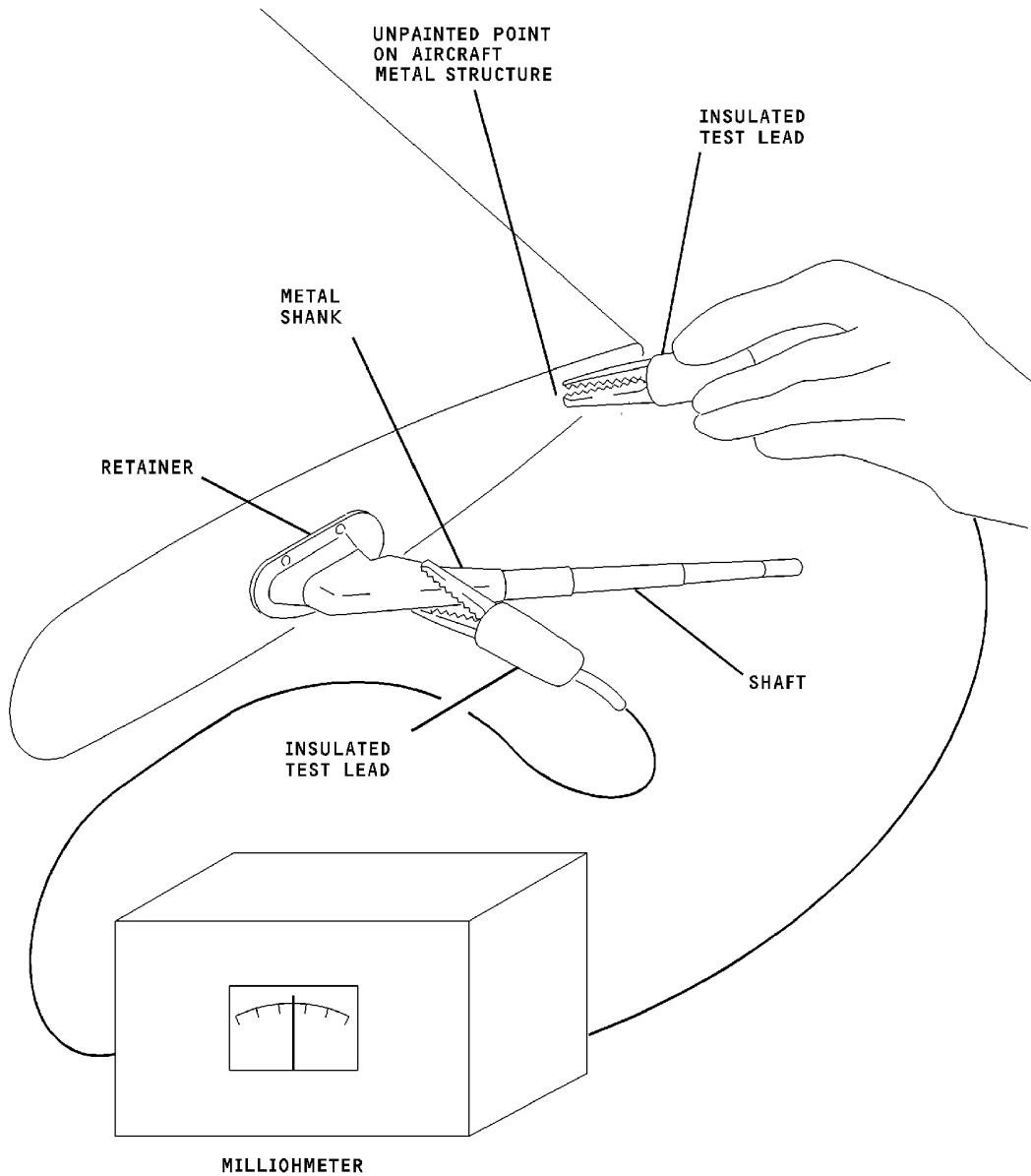
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CAG(IGDS)

BBB2-23-345E

**Carbon Type Tip Mounted Static Discharger To Aircraft Structure Resistance Test  
Figure 503/23-60-00-990-827**

EFFECTIVITY  
WJE ALL

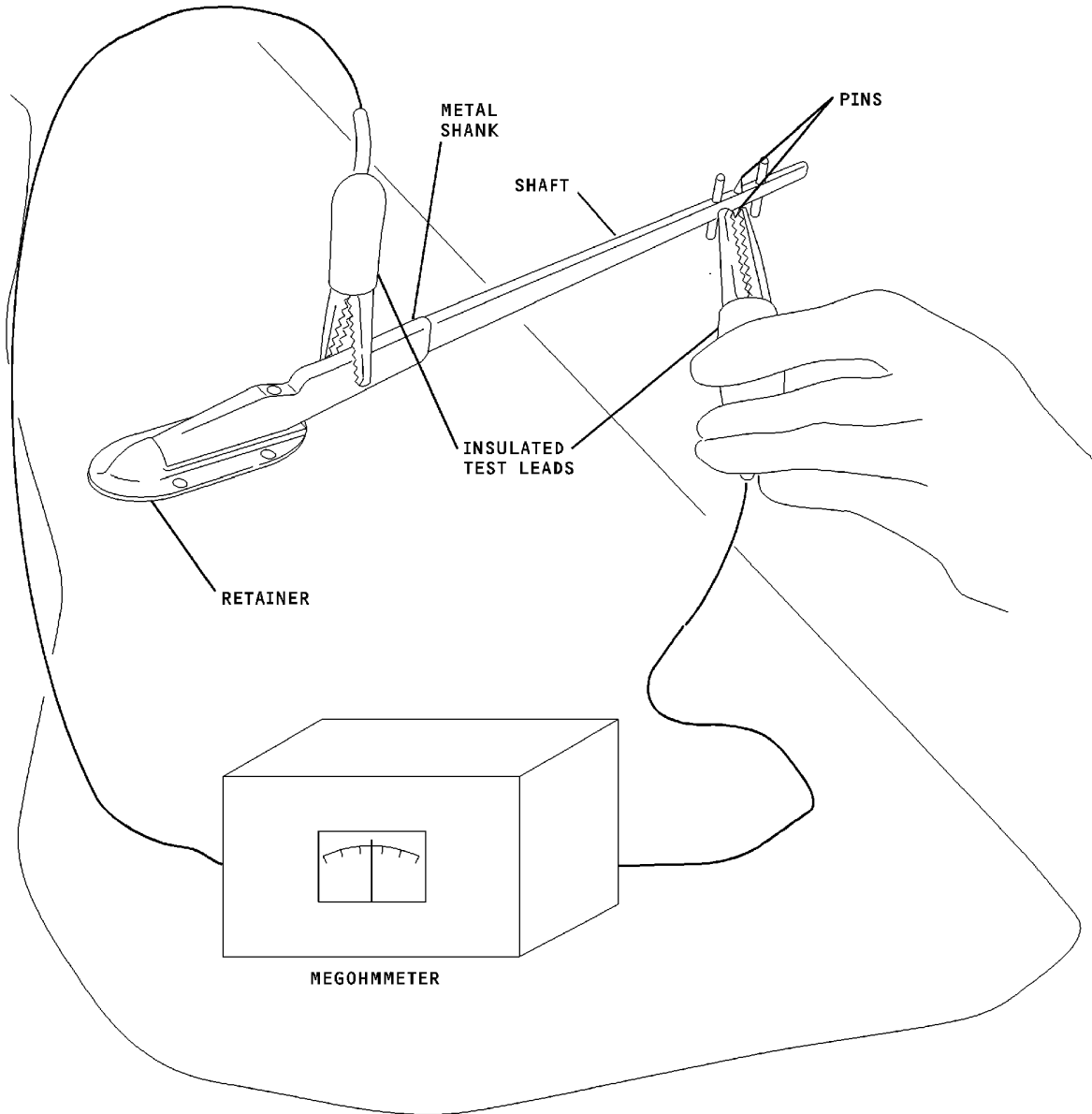
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# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-23-308A

**Pin Type Trailing Edge Mounted Static Discharger Internal Resistance Test  
Figure 504/23-60-00-990-828**

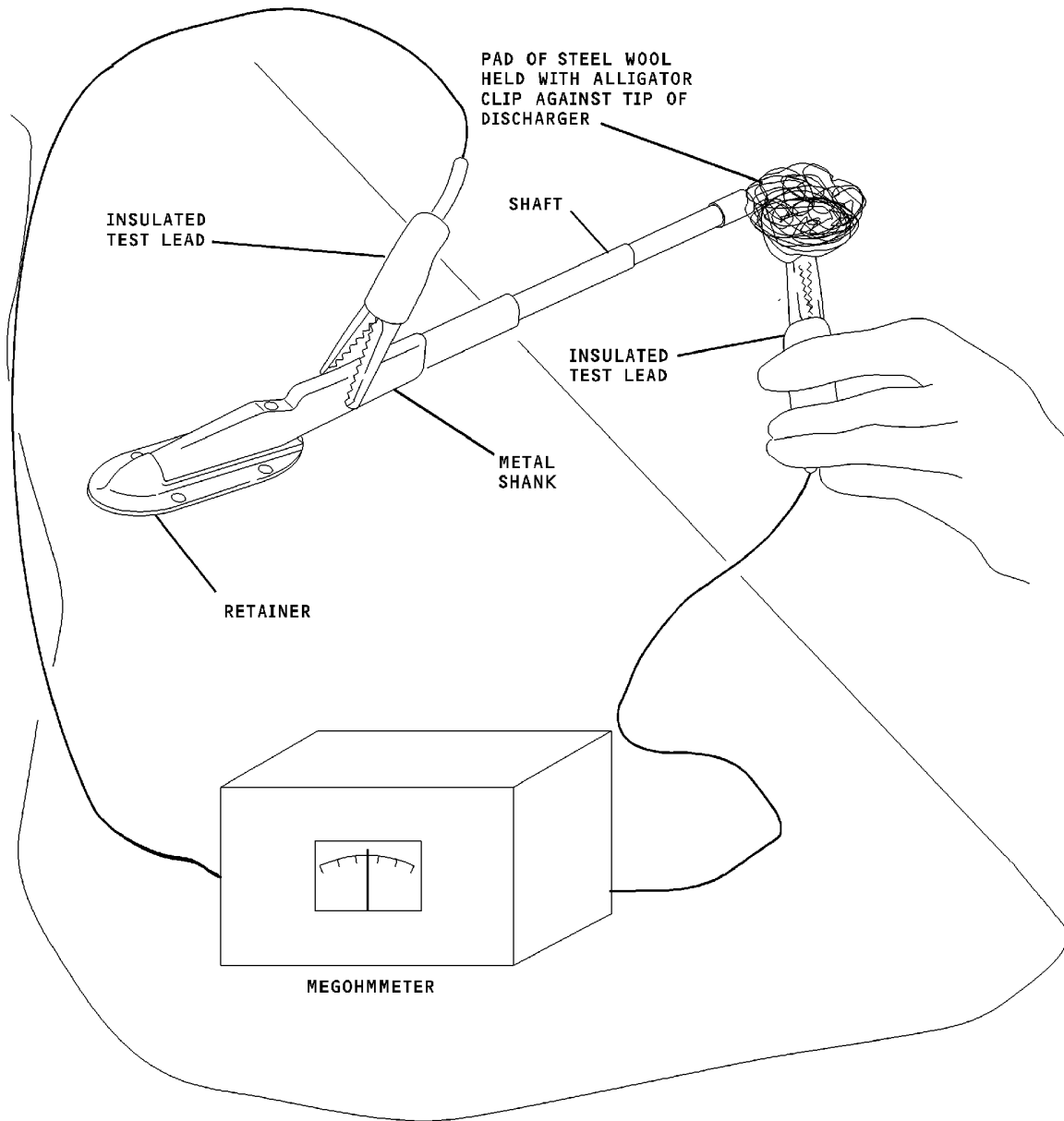
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CAG(IGDS)

BBB2-23-309A

**Carbon Type Trailing Edge Mounted Static Discharger Internal Resistance Test**  
**Figure 505/23-60-00-990-830**

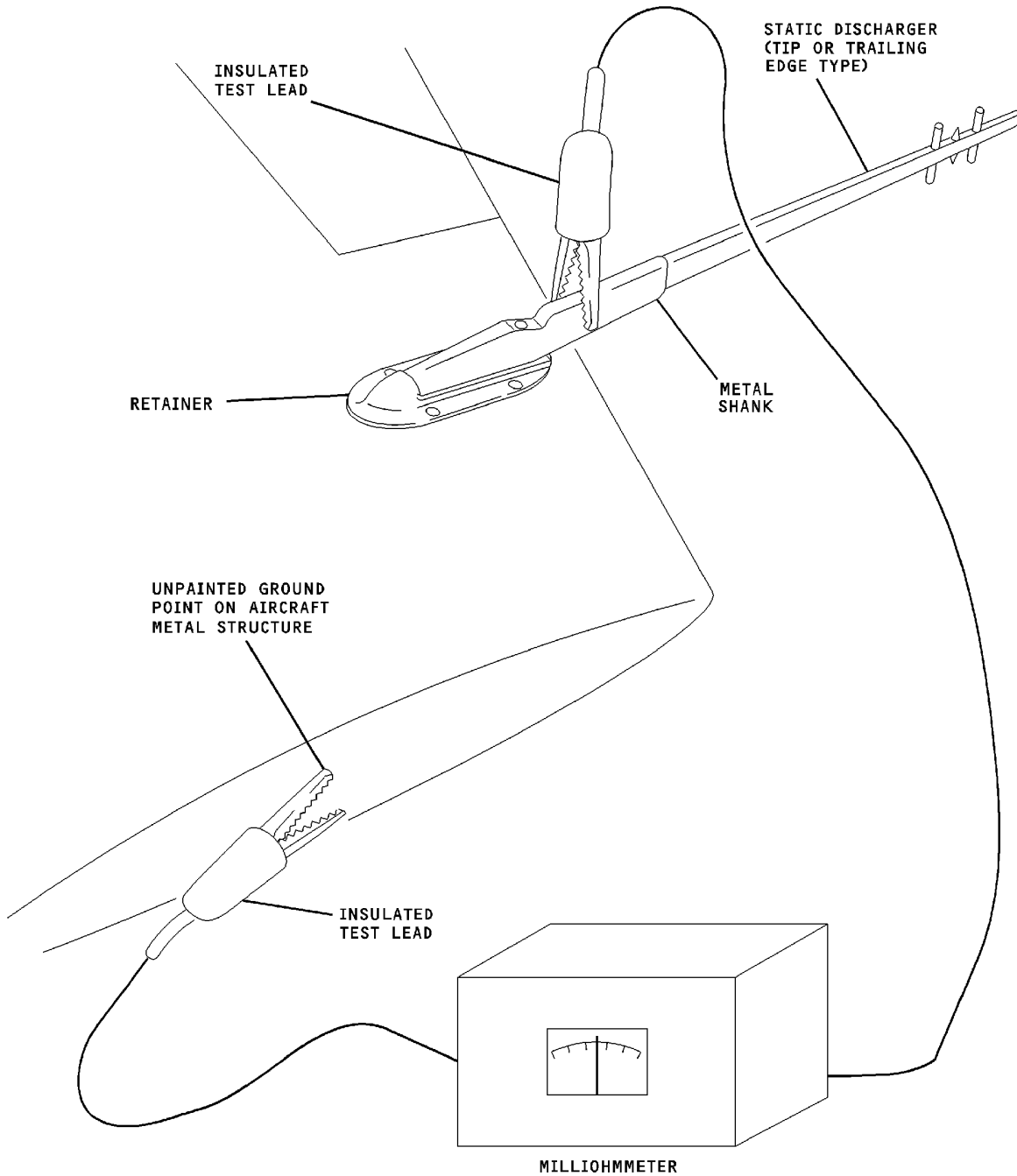
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CAG(IGDS)

BBB2-23-344A

**Typical Trailing Edge Mounted Static Discharger To Aircraft Structure Resistance Test  
Figure 506/23-60-00-990-832**

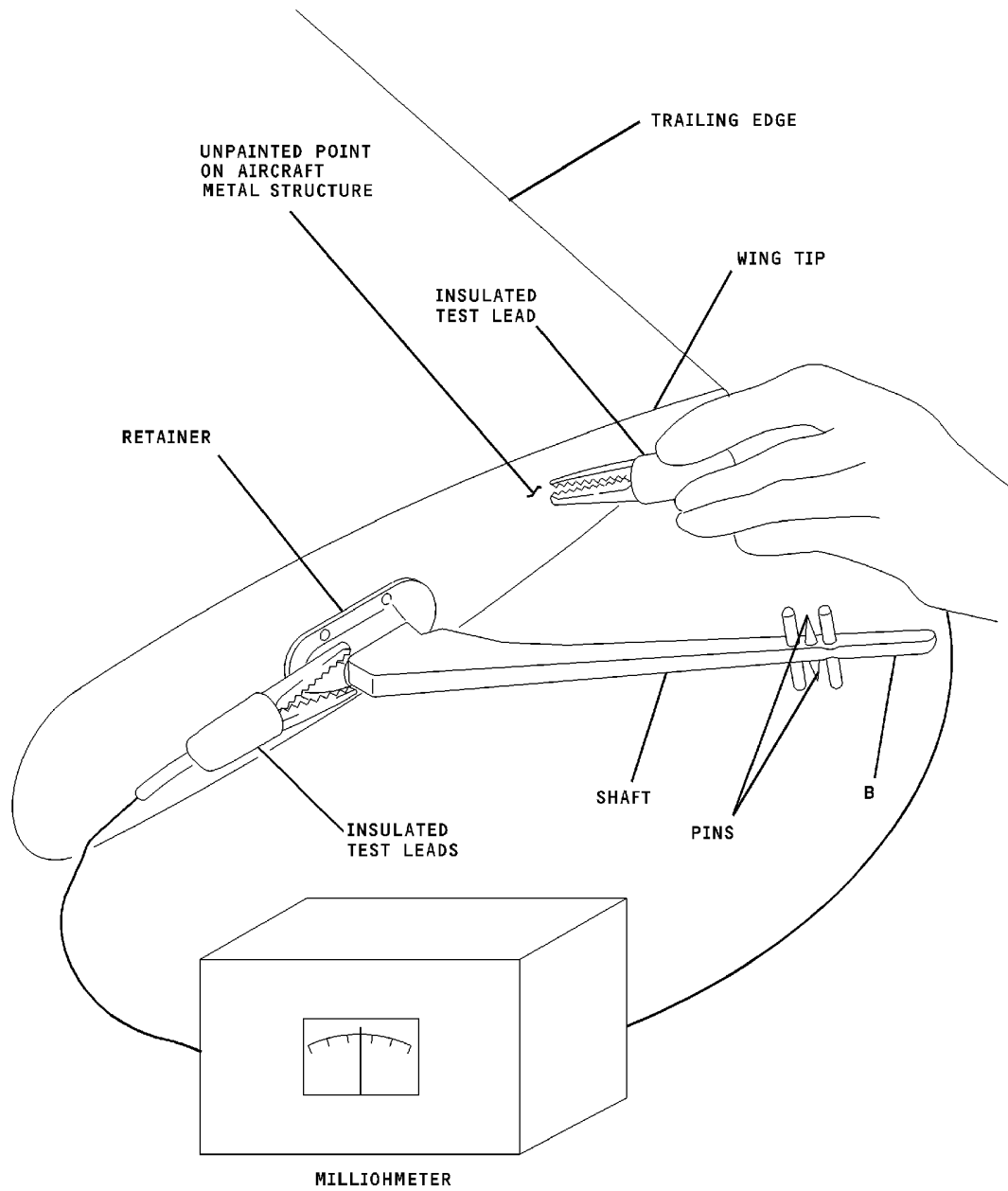
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CAG(IGDS)

BBB2-23-348A

**Typical Retainer Installed On Aluminum Surface Resistance Test  
Figure 507/23-60-00-990-833**

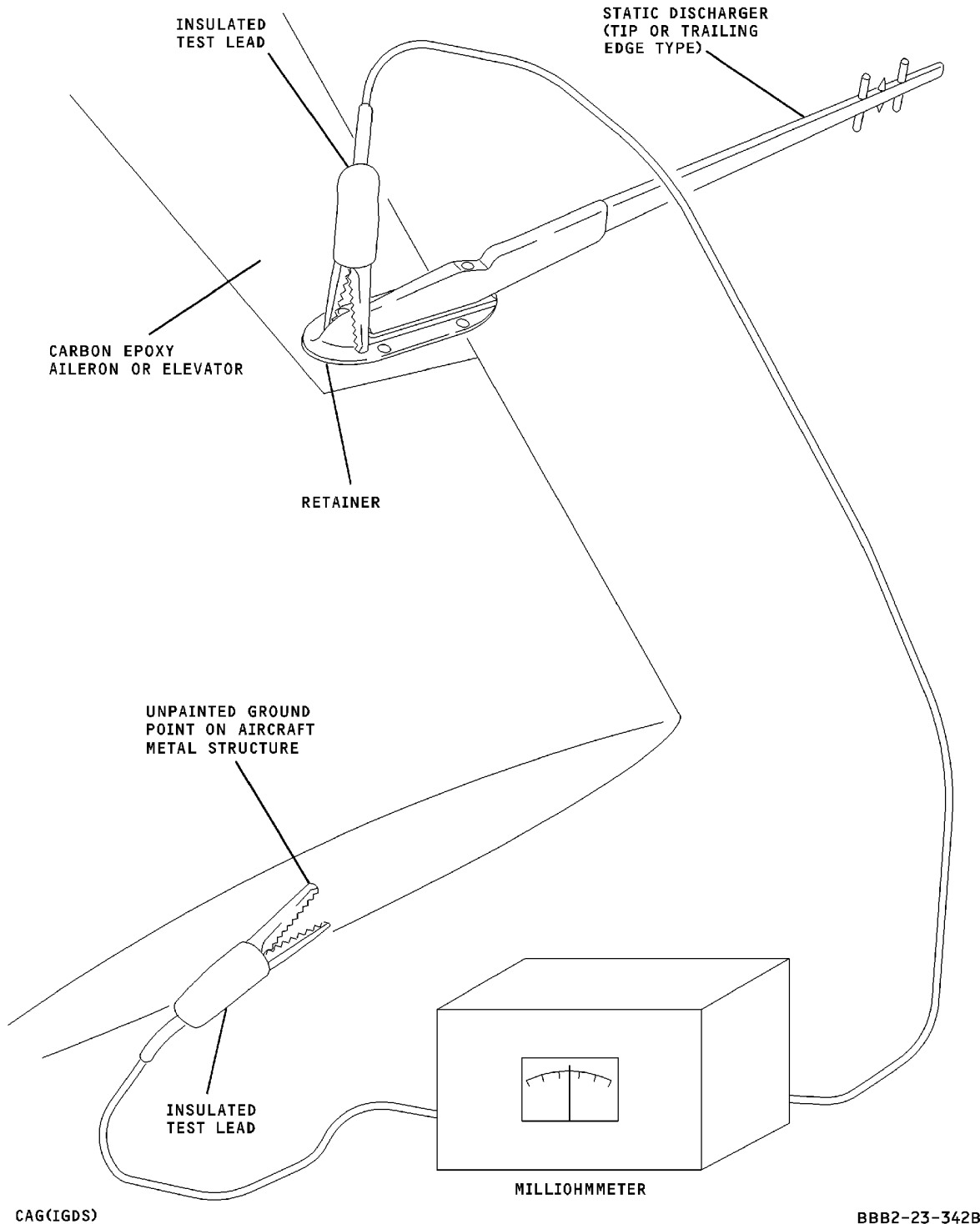
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**Typical Trailing Edge Retainer Mounted On Carbon-Epoxy Surface Resistance Test**  
**Figure 508/23-60-00-990-834**

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## STATIC DISCHARGERS - REMOVAL/INSTALLATION

### 1. General

- A. This section provides removal/installation procedures for the static dischargers. The static dischargers are located along the trailing edge of the wings, and the vertical and horizontal stabilizers (Figure 401 and Figure 402).
- B. The discharger is attached to the retainer by a set screw. The discharger should be removed when working on the retainers to prevent damage to the discharger.
- C. The retainers are attached to aircraft structure with rivets, on aluminum surfaces or screws, on carbon epoxy ailerons. The retainer must be installed directly against the parent material of the carbon epoxy aileron, then sealed around the edge of the retainer. A low bond resistance must be maintained between the retainers and the aircraft skin to prevent radio noise interference.

### 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 401**

Name and Number	Manufacturer
Cleaner, Hand Wipe Brulin MP 1793 DPM 6380-1	Brulin & Company, Inc. Richmond, CA
Cleaner, Hand Wipe, EPA 2000, DPM 6380-2 or Cleaner/Solvent, handwipe, bulk, DPM 6380-4	DPM 6380-2 is superseded by DPM 6380-4, however the DPM 6380-2 can be used until supplies are depleted.  Contec, Inc., Spartanburg, SC
Cleaner, Hand Wipe PF Degreaser DPM 6380-3	P-T Technologies, Inc. Safety Harbor, FL
Paper, abrasive, Wet-or-dry 400-600 grade DPM 5695-6	3M Los Angeles, CA
Sealant, PR1422 B-2 DPM 2082	Products Research & Chemical Corp.

### 3. Removal/Installation Static Discharger

- A. Remove Discharger (Figure 401 and Figure 402)

**WARNING:** DO NOT TOUCH THE SHARP POINTS OF THE PINS. THIS WILL PREVENT INJURY TO PERSONS.

- (1) Loosen setscrew.
- (2) Lift discharger away from retainer.

- B. Install Discharger (Figure 401 and Figure 402)

NOTE: Retainer to discharger mating surfaces must be clean and free of all paint, dirt, oil, or other contaminants.

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- (1) Position discharger on retainer. Avoid contact with sharp point of pins near tip of discharger (for pin type dischargers).
- (2) Install setscrew and tighten securely.

**NOTE:** Do not overtighten.

C. Remove Static Discharger Retainer

- (1) Remove attaching rivets or screws.
- (2) Remove retainer from structure.

D. Install Static Discharger Retainer On Aluminum Surfaces (Figure 403 and Figure 405)

**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:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A REDUCER, 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:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, 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.

EFFECTIVITY  
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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### (WARNING PRECEDES)

**WARNING:** HANDWIPE CLEANER/SOLVENT IS AN AGENT THAT IS FLAMMABLE AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER/SOLVENT 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/SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS'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.

- (1) Clean structure and retainer faying surfaces with hand wipe cleaner, DPM 6380-1, DPM 6380-2, or DPM 6380-3, DPM 6380-4 and carborundum paper to ensure proper electrical bond.
- (2) Sand faying surfaces with 400 to 600 grit carborundum paper to remove surface gloss.
- (3) Remove sanding dust with a clean dry cloth.

**WARNING:** LOW VISCOSITY POLYSULFIDE SEALANT IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LOW VISCOSITY POLYSULFIDE SEALANT IS USED.

- GAS/AIR MIXTURE MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LOW VISCOSITY POLYSULFIDE SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS 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:** APPLY THE SEALANT IMMEDIATELY. THE SEALANT WILL PREVENT CONTAMINATION CAUSED BY ALUMINUM OXIDE.

- (4) Apply thin layer of sealant on faying surface of aluminum surface and retainer.

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- (5) Place retainer in position and install rivets or screws, as applicable.
- (6) Apply sufficient sealant around the edge of the retainer to create a fillet.
- (7) Excess sealant may be removed while wet by using a cloth dampened with solvent.
- (8) Cure sealant for 72 hours at 70° to 85°F.

**NOTE:** The entire cure cycle of the sealant need not be complete prior to placing the aircraft in service. Time between installation and departure will be sufficient to prevent erosion of the sealant.

**NOTE:** The two steps that follow apply only if it is desired to accelerate cure cycle time.

- (9) Cure sealant for 1 hour at 70° to 85°F.
  - (10) Apply heat with heat gun or heat lamp and maintain structure temperature of 145°F for 8 hours.
  - (11) Install wingtip, vertical stabilizer tip, or horizontal stabilizer tip, if applicable.
  - (12) Install static discharger. (Paragraph 3.B.)
  - (13) Perform Static Discharging Adjustment/Test. (STATIC DISCHARGERS - ADJUSTMENT/TEST, PAGEBLOCK 23-60-00/501)
  - (14) Return aircraft to required configuration.
- E. Install Static Discharger Retainer On Carbon Epoxy Ailerons And Elevators (Figure 404)

**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:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A REDUCER, 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.

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### (WARNING PRECEDES)

**WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, 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:** HANDWIPE CLEANER/SOLVENT IS AN AGENT THAT IS FLAMMABLE AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER/SOLVENT 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/SOLVENT 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) Clean structure and retainer faying surfaces with hand wipe cleaner, DPM 6380-1, DPM 6380-2, or DPM 6380-3, DPM 6380-4 and carborundum paper to ensure proper electrical bond.
- (2) Sand faying surfaces with 400 to 600 grit carborundum paper to remove surface gloss.
- (3) Remove sanding dust with a clean dry cloth.
- (4) Install screws, astrostrike and retainer.

**NOTE:** Do not use impact, air, or power screw drivers when installing the screws in the aileron.

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**WARNING:** LOW VISCOSITY POLYSULFIDE SEALANT IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LOW VISCOSITY POLYSULFIDE SEALANT IS USED.

- GAS/AIR MIXTURE MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LOW VISCOSITY POLYSULFIDE SEALANT 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:** APPLY THE SEALANT IMMEDIATELY. THE SEALANT WILL PREVENT CONTAMINATION CAUSED BY ALUMINUM OXIDE.

- (5) Apply sufficient sealant only around the edge of the retainer.
- (6) Excess sealant may be removed while wet by using a cloth dampened with solvent.
- (7) Cure sealant for 72 hours at 70° to 85°F.

**NOTE:** The entire cure cycle of the sealant need not be complete prior to placing the aircraft in service. Time between installation and departure will be sufficient to prevent erosion of the sealant.

**NOTE:** The two steps that follow apply only if it is desired to accelerate cure cycle time.

- (8) Cure sealant for 1 hour at 70° to 85°F.
- (9) Apply heat with heat gun or heat lamp and maintain structure temperature of 145°F for 8 hours.
- (10) Install wingtip, vertical stabilizer tip, or horizontal stabilizer tip, if applicable.
- (11) Install static discharger. (Paragraph 3.B.)
- (12) Perform Static Discharging Adjustment/Test. (STATIC DISCHARGERS - ADJUSTMENT/TEST, PAGEBLOCK 23-60-00/501)
- (13) Return aircraft to required configuration.

### F. Wings Astrostrike Conductor Installation for Static Discharger

**NOTE:** With Service Bulletin 57-202 incorporated, the following procedure applies. On some aircraft the astrostrike conductor was omitted. This procedure adds the astrostrike conductor to give a better electrical bond.

- (1) Remove attaching rivets or screws (Figure 404).
- (2) Remove retainer from structure.
- (3) Fabricate astrostrike conductor as shown in Figure 404.
- (4) Install astrostrike conductor for static dischargers as shown in Figure 404.

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(5) Install retainer and retained attaching parts.

**WARNING:** LOW VISCOSITY POLYSULFIDE SEALANT IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LOW VISCOSITY POLYSULFIDE SEALANT IS USED.

- GAS/AIR MIXTURE MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LOW VISCOSITY POLYSULFIDE SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.

**WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS 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) Install fasteners using PR 1422 B-1/2 sealant.

(7) Perform Static Discharging Adjustment/Test. (STATIC DISCHARGERS - ADJUSTMENT/TEST, PAGEBLOCK 23-60-00/501)

(8) Return aircraft to required configuration and remove tools and equipment.

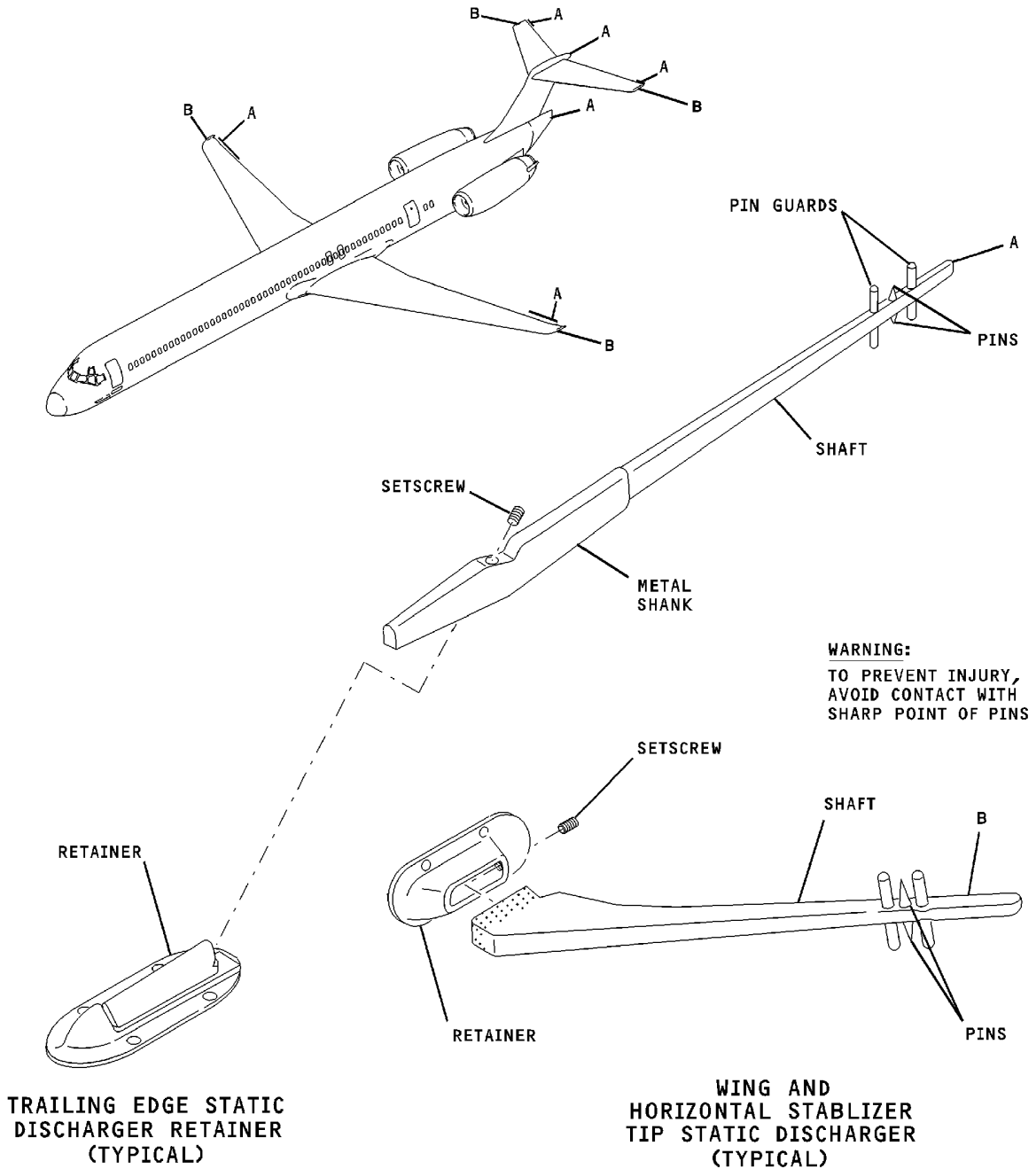
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**TRAILING EDGE STATIC DISCHARGER RETAINER (TYPICAL)**

**WING AND HORIZONTAL STABILIZER TIP STATIC DISCHARGER (TYPICAL)**

CAG(IGDS)

BBB2-23-575A

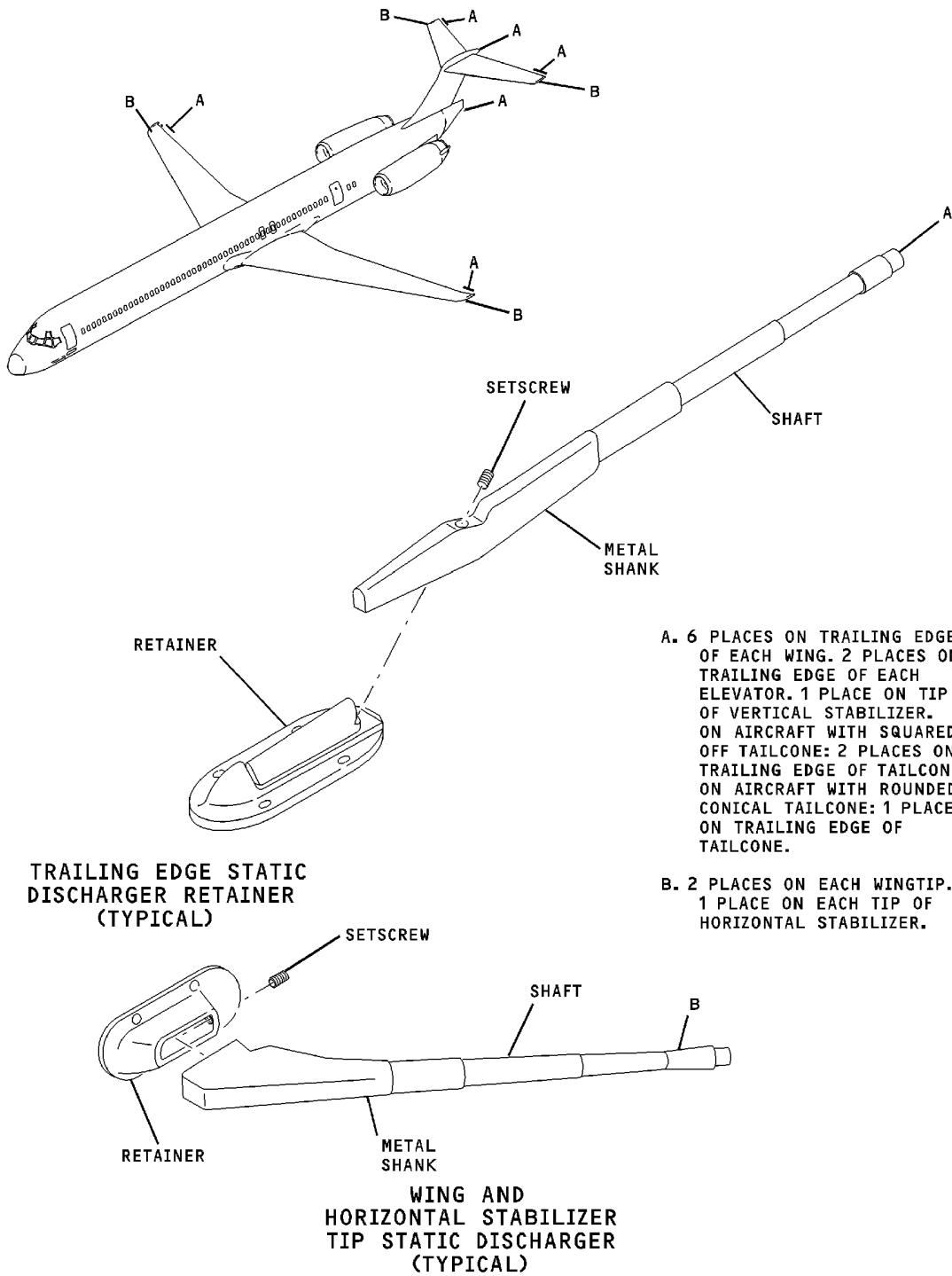
**Pin Type Static Discharger Installation  
Figure 401/23-60-01-990-801**

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CAG(IGDS)

BBB2-23-374C

**Carbon Type Static Discharger Installation  
Figure 402/23-60-01-990-802**

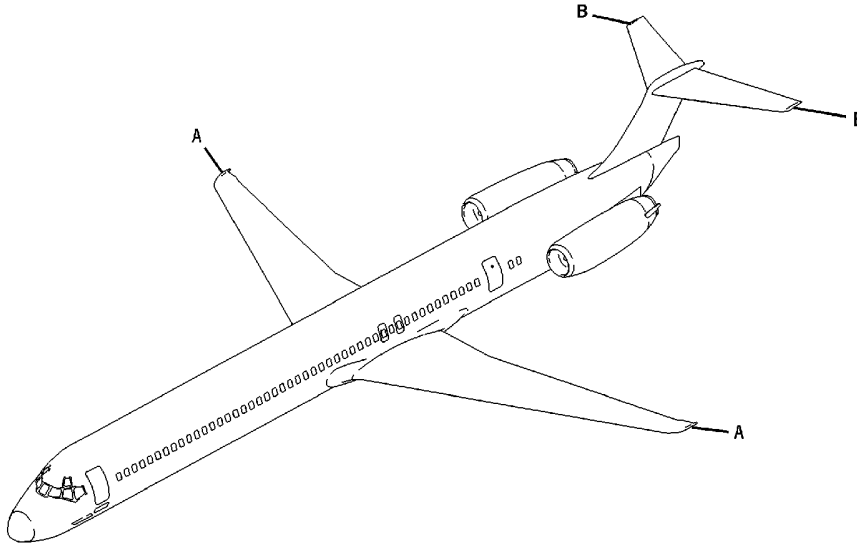
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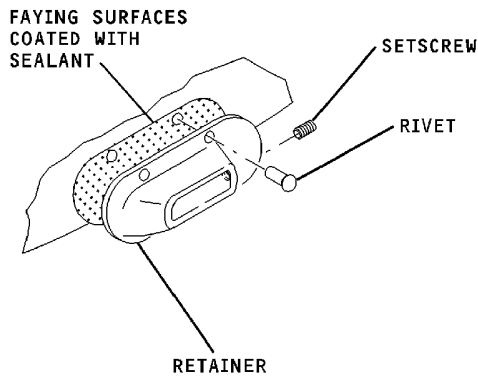
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- A. 2 PLACES ON EACH WING TIP.
- B. 1 PLACE ON EACH TIP OF HORIZONTAL STABILIZER.



CAG(IGDS)

BBB2-23-295A

## Wing And Horizontal Stabilizer Tip Mounted Retainer - Installation Figure 403/23-60-01-990-803

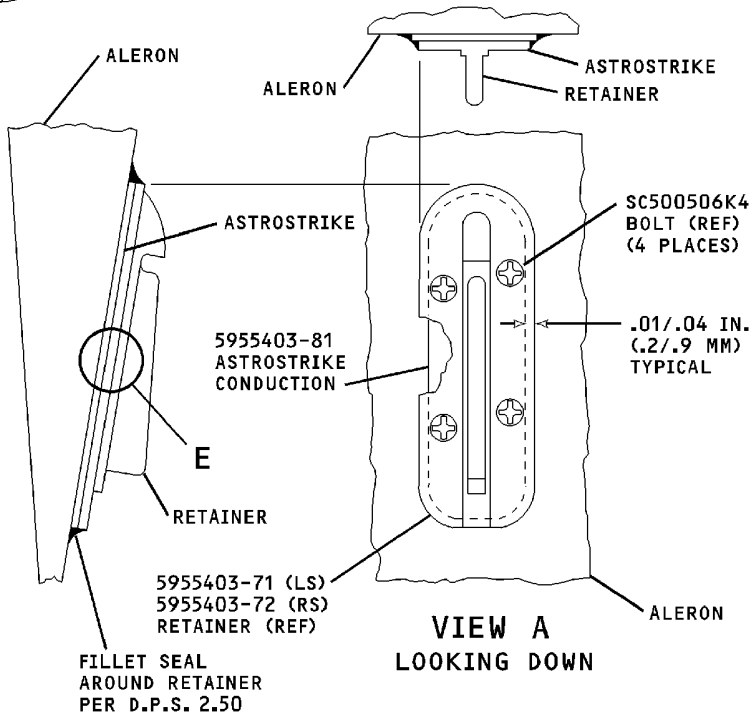
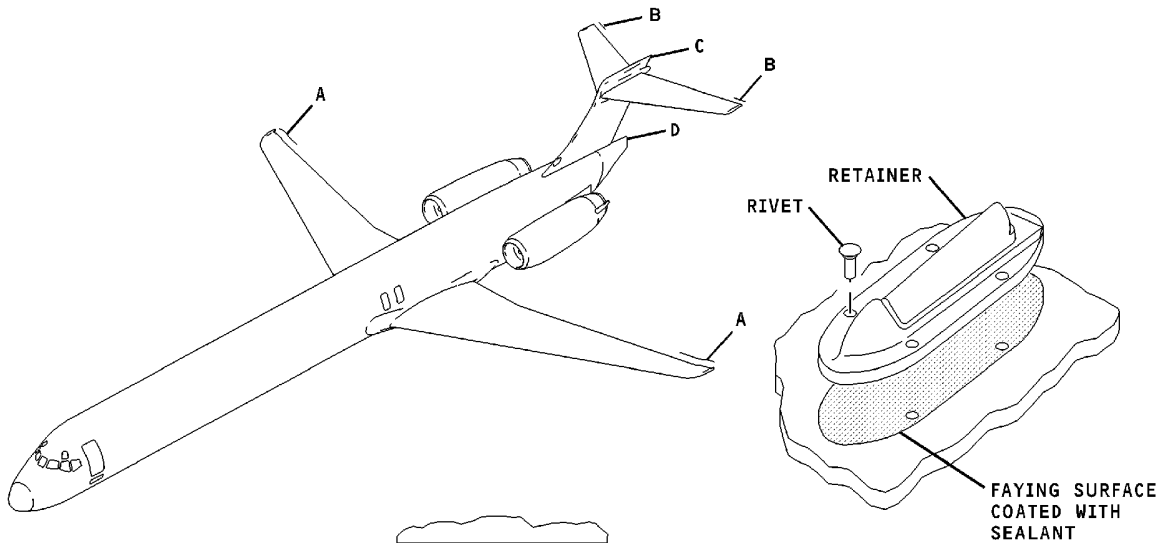
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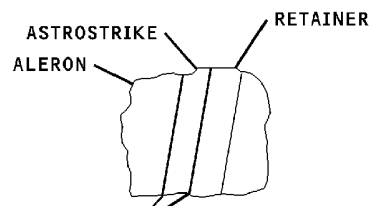
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- A. ON AIRCRAFT WITH ALUMINUM AILERONS: 6 PLACES ON TRAILING EDGE OF EACH WING. ON AIRCRAFT WITH CARBON COMPOSITE AILERONS: 4 PLACES ON TRAILING EDGE OF EACH WING.
- B. 2 PLACES ON TRAILING EDGE OF EACH ELEVATOR.
- C. 1 PLACE ON TIP OF VERTICAL STABILIZER.
- D. ON AIRCRAFT WITH SQUARED OFF TAILCONE: 2 PLACES ON TRAILING EDGE OF TAILCONE. ON AIRCRAFT WITH ROUNDED CONICAL TAILCONE: 1 PLACE ON TRAILING EDGE OF TAILCONE.

**VIEW A  
(SIDE)**



PR-1422 B-1/2  
SEALANT

**VIEW E**

BBB2-23-292B

**NOTE:** APPLY A THIN LAYER OF SEALANT BETWEEN -81 AND AILERON SKIN AND -81 AND -71 AND -72 RETAINER

CAG(IGDS)

**Trailing Edge Mounted Retainer Installation For Carbon Epoxy Surfaces  
Figure 404/23-60-01-990-804**

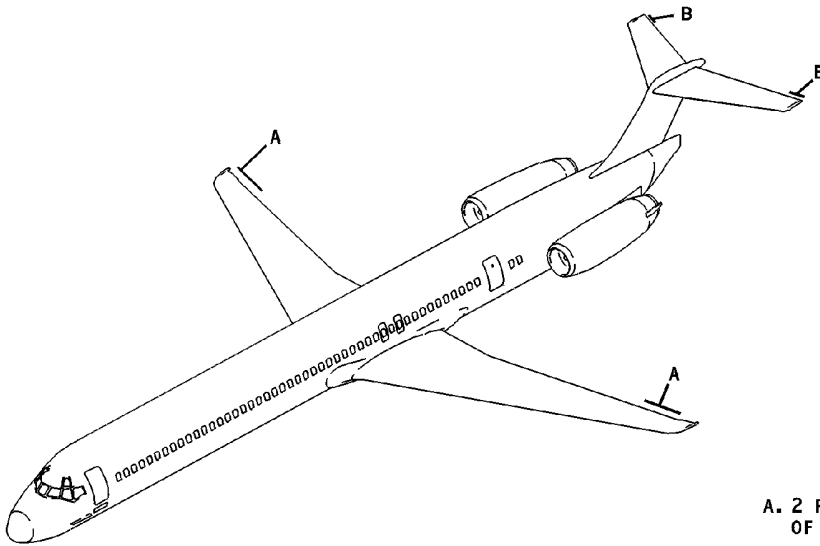
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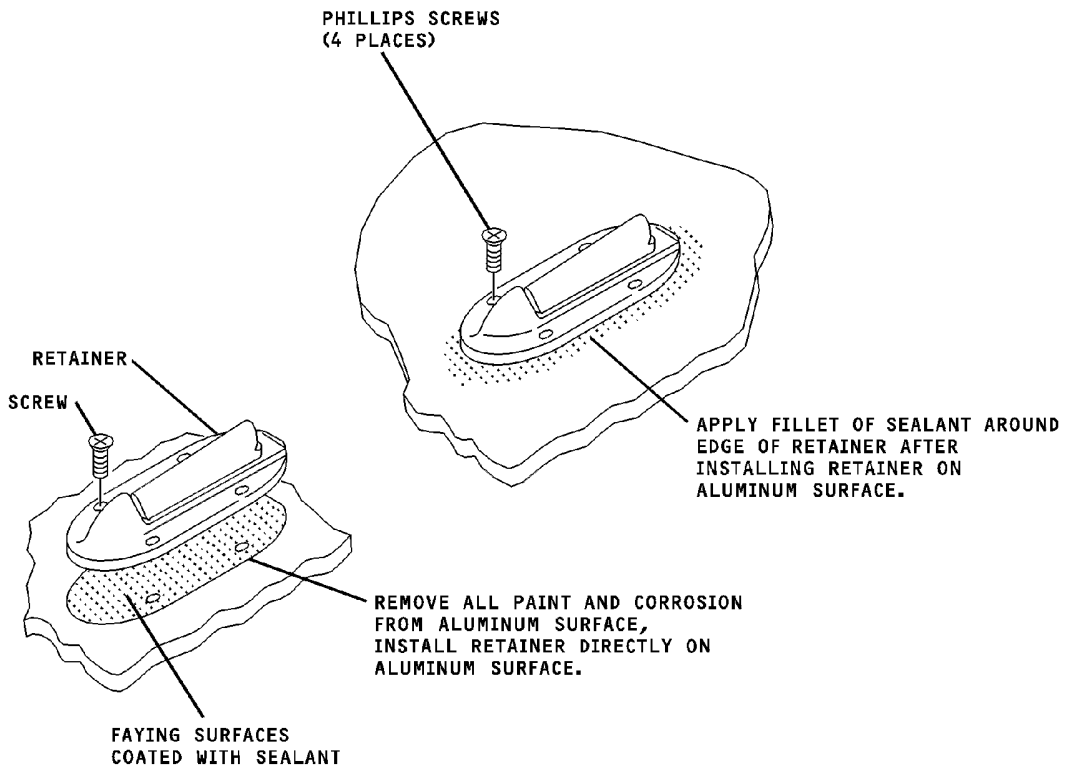
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- A. 2 PLACES ON TRAILING EDGE OF EACH AILERON.
- B. 2 PLACES ON TRAILING EDGE OF EACH ELEVATOR.



CAG(IGDS)

BBB2-23-834A

**Trailing Edge Mounted Retainer Installation For Aluminum Surfaces  
Figure 405/23-60-01-990-805**

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## STATIC DISCHARGERS - INSPECTION/CHECK

### 1. General

- A. This section provides inspection/check procedures for the static dischargers. The static dischargers are located along the trailing edge of the wings, and the vertical and horizontal stabilizers (Figure 601 and Figure 602).
- B. The discharger is attached to the retainer by a set screw. The discharger should be removed when working on the retainers to prevent damage to the discharger.

### 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 601**

Name and Number	Manufacturer
Cleaner, Hand Wipe Brulin MP 1793 DPM 6380-1	Brulin & Company, Inc. Richmond, CA
Cleaner, Hand Wipe EPA 2000 DPM 6380-2 or Cleaner/Solvent, handwipe, bulk, DPM 6380-4	DPM 6380-2 is superseded by DPM 6380-4, however the DPM 6380-2 can be used until supplies are depleted.  Contec, Inc., Spartanburg, SC
Cleaner, Hand Wipe PF Degreaser DPM 6380-3	P-T Technologies, Inc. Safety Harbor, FL
Paper, abrasive, Wet-or-dry 400-600 grade DPM 5695-6	3M Los Angeles, CA
Sealant, PR1422 B-2 DPM 2082	Products Research & Chemical Corp.

### 3. Inspection/Check Static Dischargers

- A. Check
  - (1) Make visual check to determine all static dischargers are secure in retainers. Tighten loose screws. Replace broken or missing dischargers.
  - (2) Where applicable, check discharger for broken, blunt, or bent pins. Replace dischargers showing such condition.

NOTE: Discharger is useable if bent pin tip can be straightened and resistance remains in tolerance. (STATIC DISCHARGERS - ADJUSTMENT/TEST, PAGEBLOCK 23-60-00/501)

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- (3) Check all dischargers for lightning damage as evidenced by burning and roughening of the surface of the dischargers. Check trailing edge dischargers for pitting of metal shank. If any damage is apparent, perform adjustment/test to determine if discharger meets in-service resistance tolerances. Discharger is useable if within tolerance and pins are sharp. (STATIC DISCHARGERS - ADJUSTMENT/TEST, PAGEBLOCK 23-60-00/501)

NOTE: Lightning damage is likely to occur to trailing edge dischargers near wingtips and tips of horizontal stabilizer.

NOTE: If the elevator outboard static wick has suffered a lightning strike resulting in damage to the retainer, doubler, and/or the tip end, a temporary repair approved for 48 hours may be accomplished as follows and using Figure 603.

- (a) Remove/trimoff the retainer and upper half of the doubler.  
(b) Remove/replace the three rivets where the doubler attaches to the elevator skin.

**WARNING:** LOW VISCOSITY POLYSULFIDE SEALANT IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN LOW VISCOSITY POLYSULFIDE SEALANT IS USED.

- GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LOW VISCOSITY POLYSULFIDE SEALANT 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:** APPLY THE SEALANT IMMEDIATELY. THE SEALANT WILL PREVENT CONTAMINATION CAUSED BY ALUMINUM OXIDE.

- (c) If the tip end is damaged at the aft end as is typical, apply a small amount of PR-1422 sealant to protect from water ingress into the elevator trailing edge.
- (d) Apply a 6 inch piece of speed tape wide enough to cover the lower half of the doubler as shown in Figure 603.
- (e) Rebalancing of the elevator is not required as the weight removed is nearly equal to the weight gained by the repair.
- (f) After the 48 hour period from the time of repair, accomplish permanent repair by replacement of damaged parts and rebalancing the elevator.
- (4) Check static discharger retainers and doublers for corrosion. If corrosion is apparent, perform adjustment/test to determine if retainer meets in-service resistance tolerances. (STATIC DISCHARGERS - ADJUSTMENT/TEST, PAGEBLOCK 23-60-00/501)

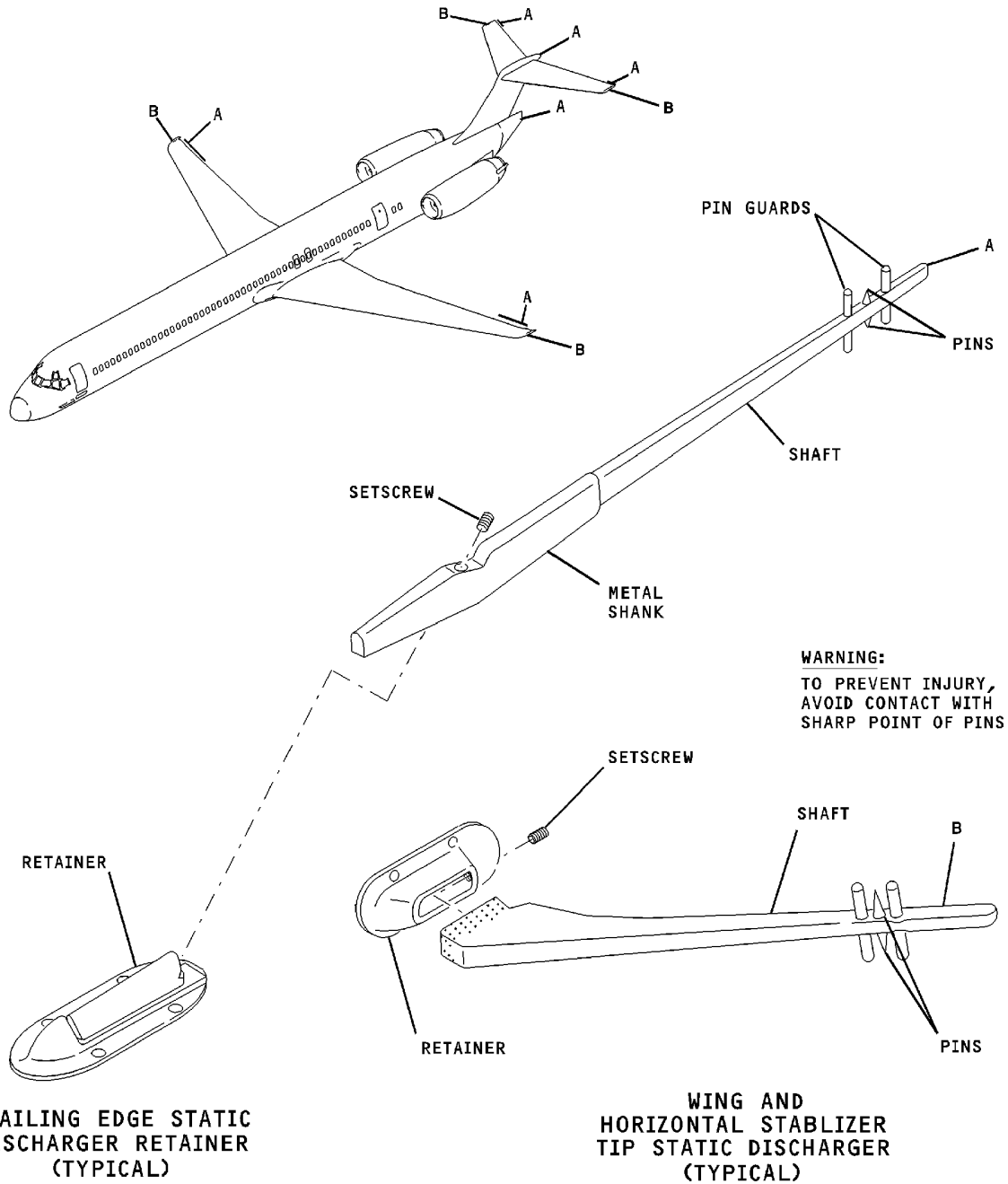
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**TRAILING EDGE STATIC DISCHARGER RETAINER (TYPICAL)**

**WING AND HORIZONTAL STABILIZER TIP STATIC DISCHARGER (TYPICAL)**

CAG(IGDS)

BBB2-23-575A

**Pin Type Static Dischargers  
Figure 601/23-60-01-990-809**

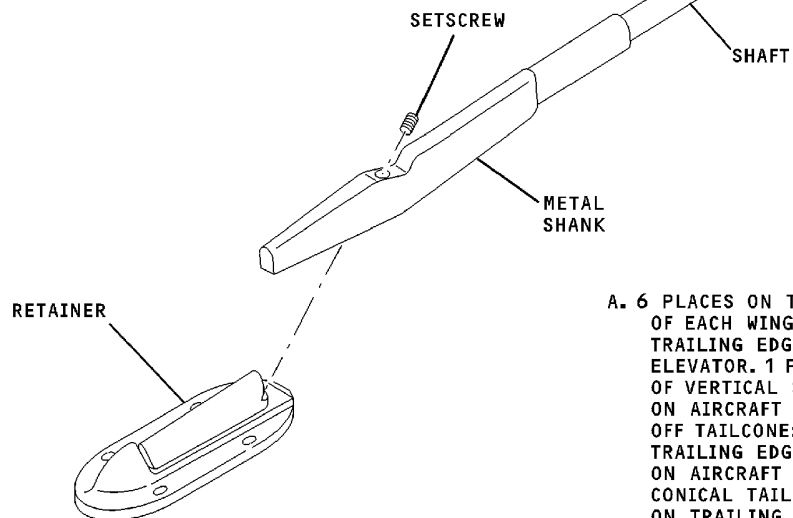
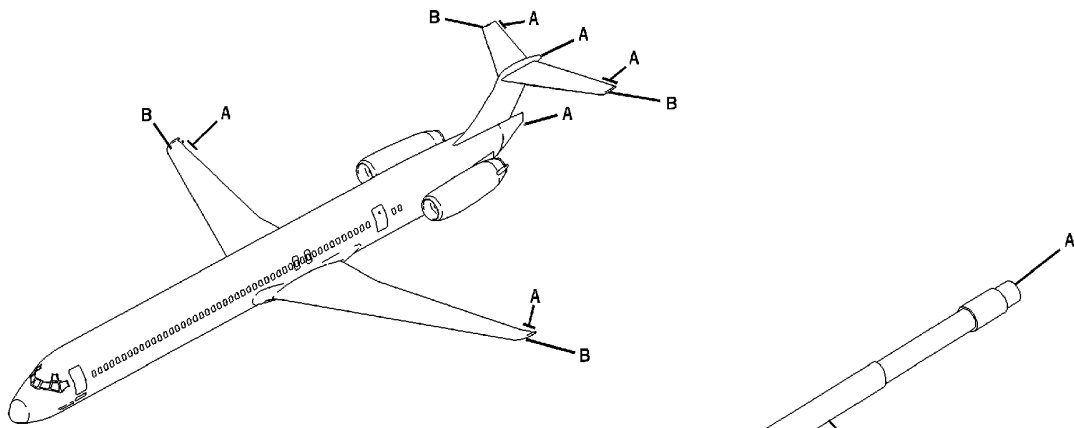
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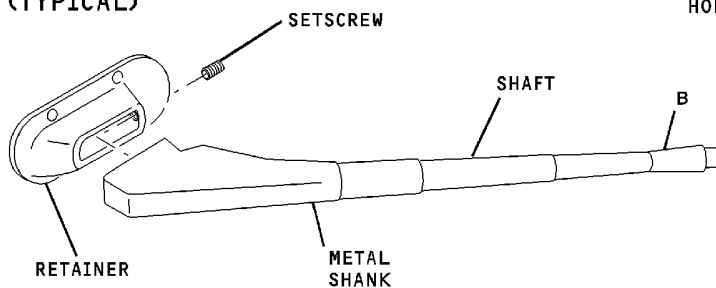
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**TRAILING EDGE STATIC DISCHARGER RETAINER (TYPICAL)**

**A. 6 PLACES ON TRAILING EDGE OF EACH WING. 2 PLACES ON TRAILING EDGE OF EACH ELEVATOR. 1 PLACE ON TIP OF VERTICAL STABILIZER. ON AIRCRAFT WITH SQUARED OFF TAILCONE: 2 PLACES ON TRAILING EDGE OF TAILCONE. ON AIRCRAFT WITH ROUNDED CONICAL TAILCONE: 1 PLACE ON TRAILING EDGE OF TAILCONE.**

**B. 2 PLACES ON EACH WINGTIP. 1 PLACE ON EACH TIP OF HORIZONTAL STABILIZER.**



**WING AND HORIZONTAL STABILIZER TIP STATIC DISCHARGER (TYPICAL)**

CAG(IGDS)

BBB2-23-374C

**Carbon Type Static Dischargers  
Figure 602/23-60-01-990-810**

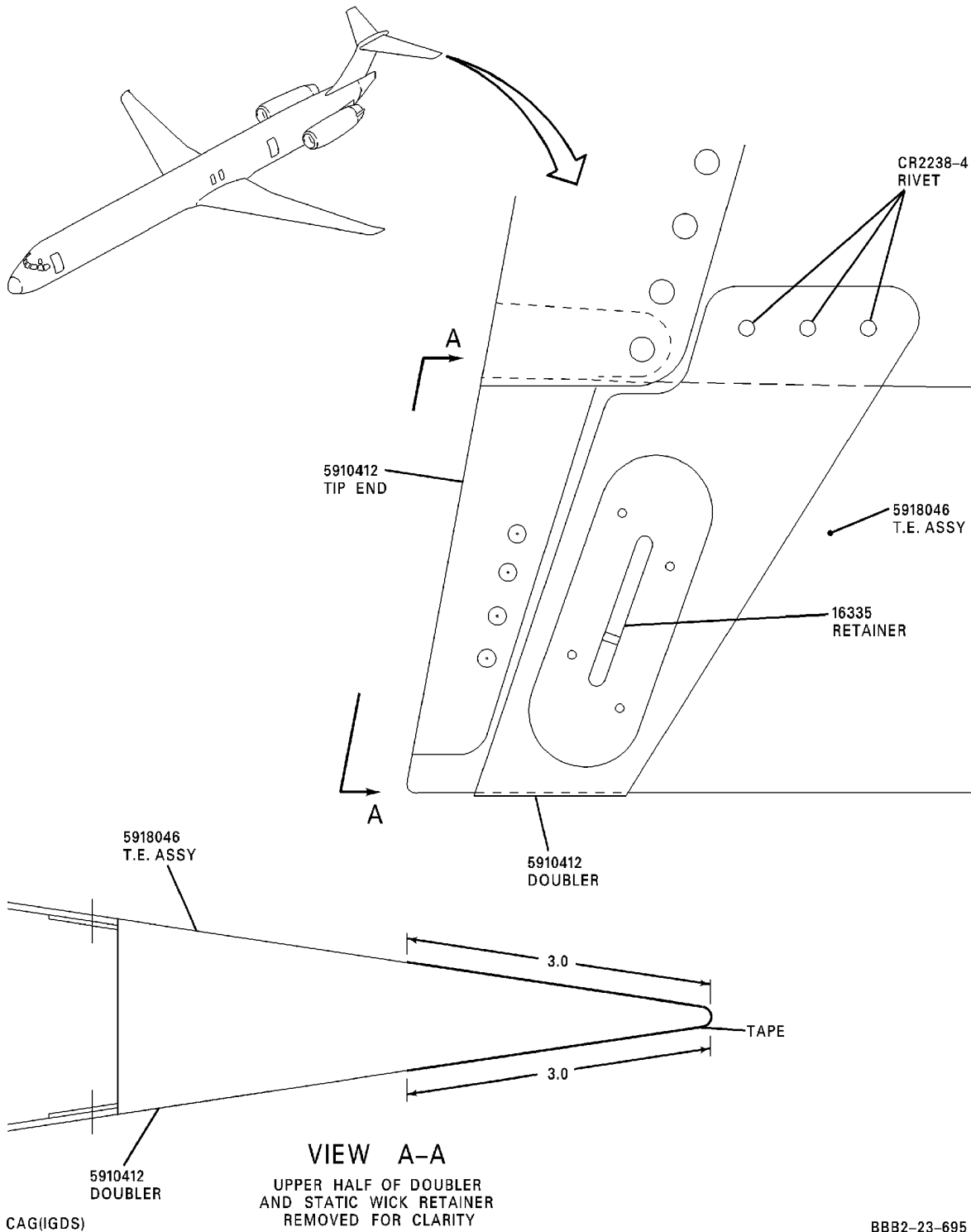
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**Elevator Outboard Static Wick - Removal/Installation After Lightning Strike  
Figure 603/23-60-01-990-812**

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**VOICE RECORDERS - DESCRIPTION AND OPERATION**

**1. General**

**WJE 405-411, 873, 874, 880, 884, 892, 893**

- A. The Voice Recorder system provides simultaneous recording, on four independent channels, of flight crew communications. Channel 1 records the service interphone audio or the passenger-address sidetone which is sent to the receiver of the aft pedestal handset; channel 2 records the output of the first officer's audio control panel, that also drives his headset and cockpit speaker; channel 3 similarly records the output of the captain's audio control panel; channel 4 records all cockpit audio that is picked up by an open microphone in the microphone monitor on the forward overhead switch panel. The four channels record separately and simultaneously; thus, audio from channels 1, 2, and 3 is kept separate from cockpit noise and aural warning. The system continuously records the four channels on a 30-minute bidirectional magnetic tape. The recorder erases as it records so that the last half hour of recording is retained on the tape. Playback of the tape in the aircraft is not possible. The recorded conversations can be quickly and completely erased, when the aircraft has docked. The voice recorder system consists of two major units: the voice recorder, located in the aft cargo compartment, and the voice recorder microphone monitor, located on the forward overhead switch panel.

**WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 881, 883, 886, 887, 891**

- B. The Voice Recorder system picks up, amplifies, and records all flight crew communications as well as noise, tones, and conversation within the cockpit areas. All radio and interphone communications from captain's, and first officer's audio control panels are fed into two channels of the voice recorder. PA sidetone and service interphone audio from the pedestal handset are recorded on a third channel. A fourth channel records all cockpit audio picked up by the microphone in the microphone monitor on the forward overhead switch panel. The four channels record separately and simultaneously. Thus audio from the two audio panels is kept separate from cockpit noise. The system continuously records the four channels on an endless magnetic tape so that a record is always available for analysis following an in-flight incident. The recorder erases as it records so that the last half hour of recording is retained on the tape. Playback of the tape in the aircraft is not possible. The recorded conversations can be quickly and completely erased, when the aircraft has docked, eliminating the possibility of unauthorized access to the record. The voice system consists of two major units: the voice recorder, located in the aft cargo compartment, and the voice recorder microphone monitor, located on the forward overhead switch panel. (Figure 1)

**WJE ALL**

**2. Voice Recorder System Components**

- A. Description

**WJE 405-411, 873, 874, 880, 884, 892, 893**

- (1) Voice Recorder - the voice recorder is housed in a 1/2 ATR short unit. The voice recorder consists of a power supply, four record amplifiers, a bias oscillator, tape reels, a tape drive motor, a bulk erase circuit, monitor amplifiers, and an armored enclosure. The enclosure contains the recording tape, the erase, record and monitor heads, directional sensors and bulk erase coil. Thermal and impact protection is provided by the enclosure, which is designed to resist shock or crush load and to protect the record from accidental erasure. The front panel contains a push-to-test switch, a headset jack, and a status light. Electronic components are contained on separate modules that are mounted on the recorder subassembly chassis.

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WJE ALL

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**WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 881, 883, 886, 887, 891**

- (2) Voice Recorder - The voice recorder is housed in a 1/2 ATR short unit. The recorder contains all of the recording circuits, including the tape transport, tape drive mechanism, and the self-test circuits. The voice recorder consists of a power supply, four record amplifiers, a 65 KHz bias/erase circuit, a tape transport, a monitor amplifier, a 600 Hz self-test circuit, and a headset jack. The tape transport is contained in a protective enclosure that is resistant to a crash environment. The electronic circuits are assembled on circuit boards. Each card plugs into a mating connector, which is part of the wiring harness. A ground control relay and the parking brake switch interlock the bulk erase circuit to prevent activation of the erase circuit during flight.

**WJE 405-411, 873, 874, 880, 884, 892, 893**

- (3) Voice Recorder Microphone Monitor - the voice recorder microphone monitor contains an area microphone, a microphone amplifier, a push-to-test switch, a monitor meter, an erase switch, and a headset jack. The area microphone picks up oral conversation, which is applied to the microphone amplifier. The test switch activates a 400 Hz test signal to check the operation of the record channels. When the test switch is pressed, the monitor meter provides a visual indication of record operation. An audible test indication is available through the headset jack. The erase switch functions to erase the tape, only when the aircraft is on the ground and the parking brake is set.

**WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 881, 883, 886, 887, 891**

- (4) Voice Recorder Microphone Monitor - The voice recorder microphone monitor unit contains an area microphone, a microphone amplifier, a push-to-test switch, a monitor meter, an erase switch, and a headset jack. The area microphone picks up all sounds within the cockpit, which is applied to the microphone amplifier. The test switch activates a 600 Hz test signal which is applied to each channel in sequence, beginning with channel one. The monitor amplifier picks up the sequenced test signals and passes the signals to the meter circuit where a Go or No-Go indication is given. An audible test indication is available at the headset jack. The erase switch functions to erase the tape, only when the aircraft is on the ground and the parking brake is set.
- (5) Acoustic Underwater Locator Beacon Assembly - This unit is a battery powered device which radiates a pulsed acoustic signal into the surrounding water upon activation of its water-sensitive switch. The beacon consists of a self contained battery, electronic module and transducer. The battery is shock mounted and separated from the electronic module by a bulkhead built into the case. The battery is accessible by removal of an O-ring sealed end cover. The opposite end of the beacon contains the Teflon insulated water-sensitive switch.

**WJE ALL**

B. Operation

**WJE 405-411, 874, 880, 884, 892, 893**

- (1) The voice recorder system operation is continuous, when power is applied to the electrical buses and the voice recorder circuit breaker is closed. The recording system contains four identical recording channels. All channels are independent and are separated at the inputs by isolation transformers.

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WJE ALL

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### WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 881, 883, 886, 887, 891

- (2) The voice recorder system operation is continuous when power is applied to the electrical buses and the voice recorder circuit breaker is closed. The recording system contains four identical recording channels. All channels are independent and are separated at the inputs by isolation transformers. The monitor amplifier functions to pick up recorded signals through the monitor pickup head, amplify the signals, and present them at the headset jack for continuous and simultaneous playback of all four recorded tracks. The monitor amplifier is also used in conjunction with the test circuit.
- (3) When the test switch located on the microphone monitor is pressed, the 600 Hz test tone generator is activated. The output of the test tone generator is applied to a ring counter and gate. The test tone from the ring counter is time sequenced to each recording channel for approximately 0.8 second. The amplifiers receive the tone, amplify and transmit the tone to the channel heads where it is recorded on the tape. The monitor amplifier picks up the sequenced test tones and feeds the signals to the meter circuit where a Go or No-Go indication is given. Due to the short time interval between each channel receiving the test tone, the meter needle rises to an indication but does not completely fall to a zero level, indicating in an oscillating manner. In the event of a channel failure the meter needle will indicate a definite No-Go condition. Testing the system does not interrupt the normal recording operation.

### WJE 405-411, 873, 874, 880, 884, 892, 893

- (4) The operation monitor is used to check the entire recording process: bias, erase, and record currents for each channel, tape condition, and tape movement. During monitor operation, a 400 Hz signal is fed into the record amplifier inputs and recorded on the tape. The monitor head picks up signals from all four tracks, which are amplified to a sufficient level to drive a 600 ohm headset. The monitor signal recorded on the tape is heard as a 400 Hz tone. The monitor signal is further amplified and detected to drive current through the meter on the microphone monitor and light on the voice recorder.
- (5) Pressing the test switch on the microphone monitor or recorder for 1/2 second energizes the test circuit of the recorder. The 400 Hz test signal is applied to the record amplifiers and is stored on all four tracks of the tape. Due to the time the test switch is pressed, tape speed, and the distance between the staggered recording/monitor heads, the test tone will be monitored as 2 Test Tones. Each tone will cause the monitor meter needle to deflect into the green area then drop to zero. The status light on the recorder will come on and go out with each tone indication.

NOTE: On older models of the microphone monitor panel, the meter will deflect into a white zone to indicate a "GO" condition. Newer models will deflect into a green zone.

- (6) The bulk erase function will operate only when the aircraft is on the ground and the parking brake is set. To operate the bulk erase function, press the erase switch on the microphone monitor for approximately 7 seconds. Erasure of the tape is monitored with headset connected to either the voice recorder jack or the microphone monitor jack; a 400 Hz tone should be heard.

### WJE 401-404, 412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-879, 881, 883, 886, 887, 891

- (7) The erase function will operate only when the aircraft is on the ground and the parking brake is set. To operate the bulk erase function, press the erase button on the microphone monitor, for approximately 2 seconds.

### WJE ALL

#### C. To Operate System

- (1) There is no ON-OFF power switch for the voice recorder system. The system is continuously operating when the electrical bus is energized and the circuit breaker is closed.

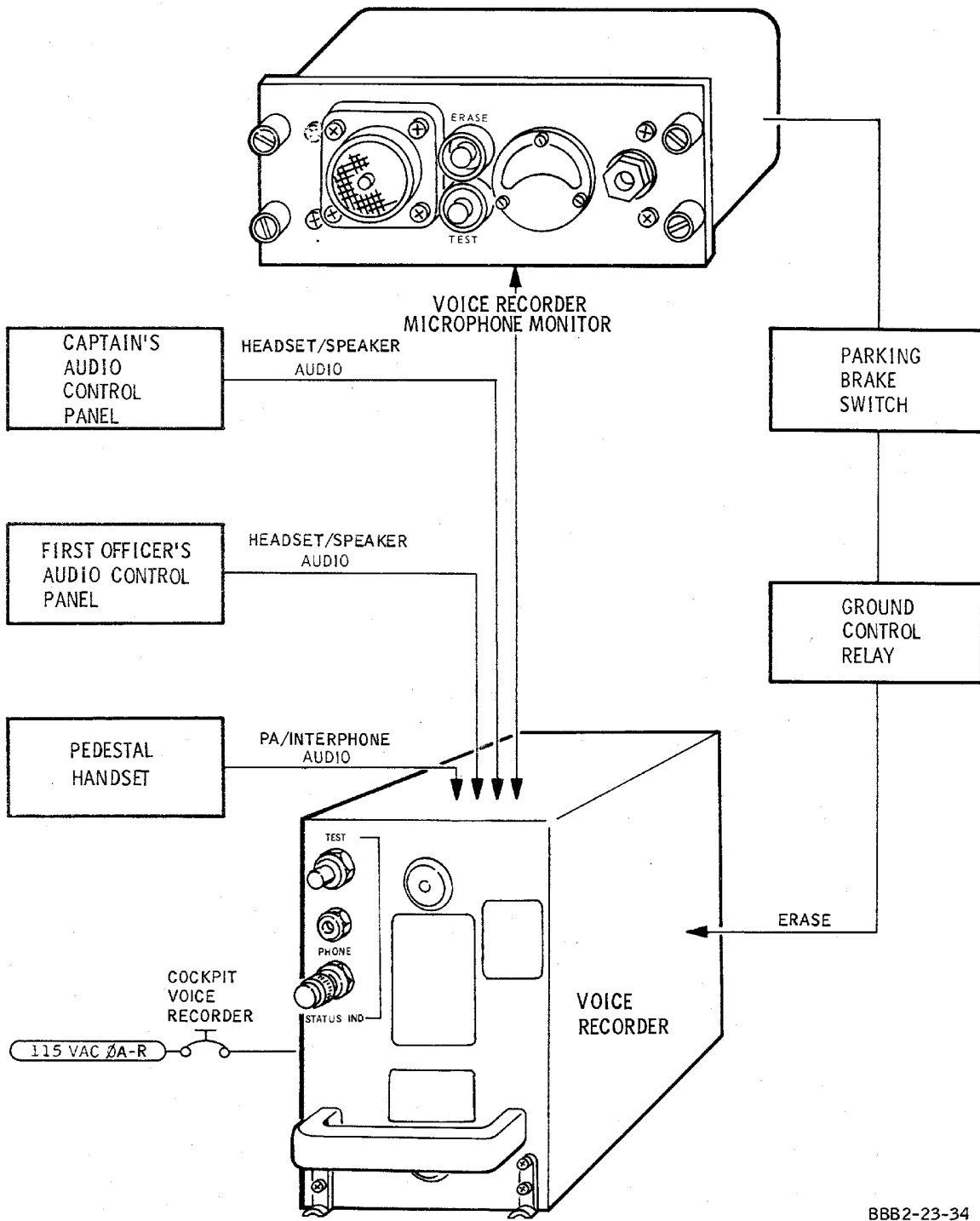
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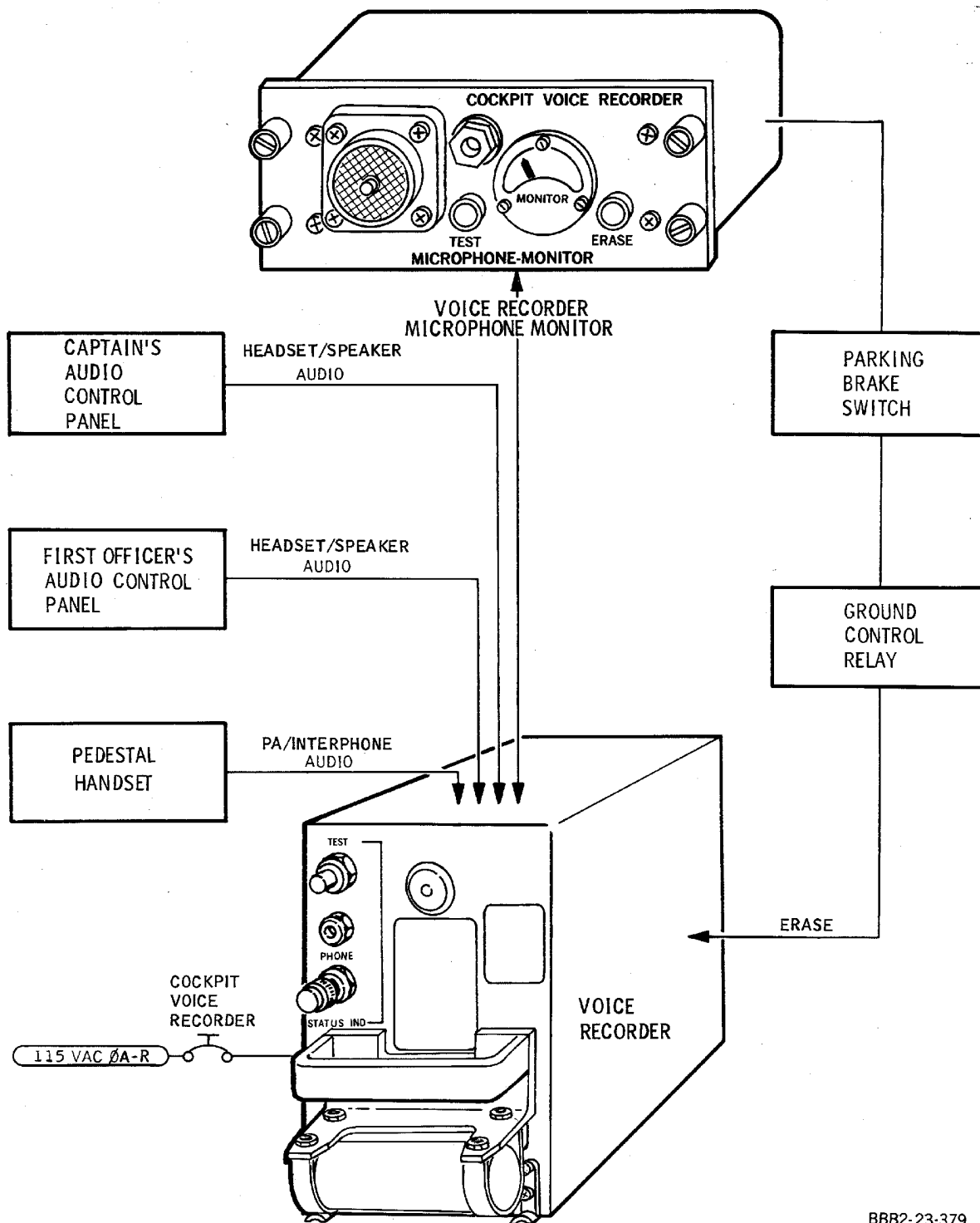
**Voice Recorder System -- Functional Diagram**  
Figure 1/23-70-00-990-804 (Sheet 1 of 3)

EFFECTIVITY  
WJE 407, 408, 411, 880

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Voice Recorder System -- Functional Diagram  
Figure 1/23-70-00-990-804 (Sheet 2 of 3)

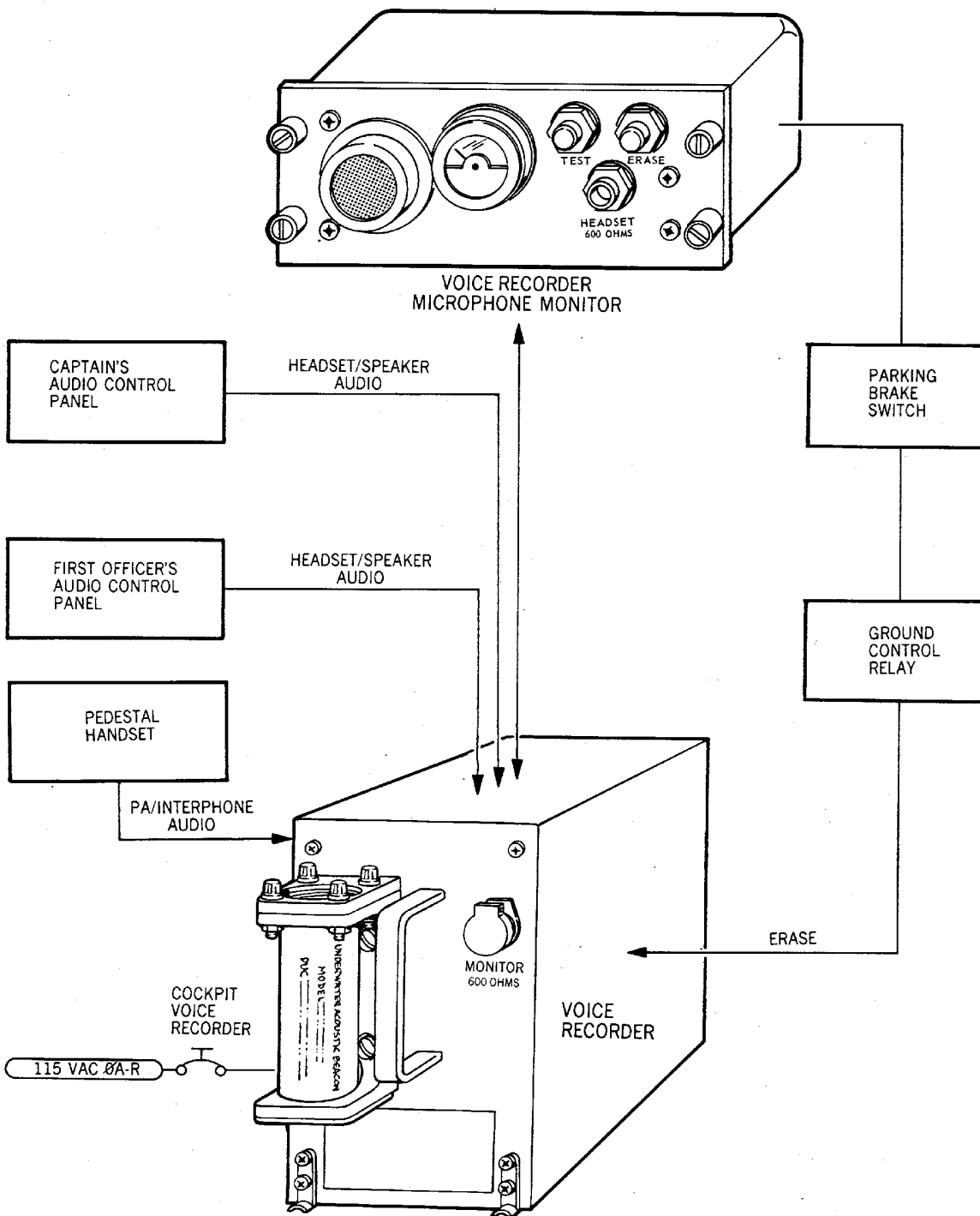
EFFECTIVITY  
WJE 405, 406, 409, 410, 874, 884, 892, 893

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**Voice Recorder System -- Functional Diagram**  
Figure 1/23-70-00-990-804 (Sheet 3 of 3)

**EFFECTIVITY**  
WJE 401-404, 412, 414-427, 429, 861-866, 868, 869,  
871, 872, 875-879, 881, 883, 886, 887, 891

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**VOICE RECORDER - TROUBLE SHOOTING**

**1. General**

- A. Trouble Shooting procedures provided in this section are basic procedures for isolating and correcting a faulty voice recorder system in the aircraft.
- B. The basic causes of a faulty system operation are generally: faulty aircraft wiring or faulty line replaceable units (LRU).
- C. By using the basic check procedures, coordinated with the system schematic contained in this section, quick isolation and correction of the problem can be accomplished.
- D. The major components of the system are the microphone monitor and the voice recorder. The system interfaces with the passenger address, and the flight and service interphone systems. In Trouble Shooting, some checks may have to be made in those systems components and wiring.
- E. The voice recorder system components are located as follows:

**Table 101**

Component	Location
Microphone Monitor	Flight Compartment Overhead Switch Panel
Voice Recorder	Aft Cargo Compartment, R.H. Tunnel

The circuit breaker is located as follows:

**UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

**2. Equipment and Materials**

NOTE: Equivalent substitutes may be used in place of the following listed item.

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 102**

Name and Number	Manufacturer
Multimeter 2000A	Data

**3. Trouble Shooting Voice Recorder**

- 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. LRUs are voice recorder, microphone monitor, and audio control panels.

**Table 103 Trouble Shooting Voice Recorder**

Step	Procedure	Correction
(1)	Check for proper power sources at main buses, circuit breakers, and input and output at LRUs.	Correct main power supply to buses, replace faulty circuit breakers, wires, or LRUs.
(2)	Check for proper grounds at LRUs. 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 LRUs.

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**Table 103 Trouble Shooting Voice Recorder (Continued)**

<b>Step</b>	<b>Procedure</b>	<b>Correction</b>
(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 a continuity.	Repair or replace faulty wiring, terminal junctions, relays, or associated items in aircraft wiring.
(4)	Replace suspected faulty LRUs or component with a known operational unit.	Replace faulty LRUs or components.

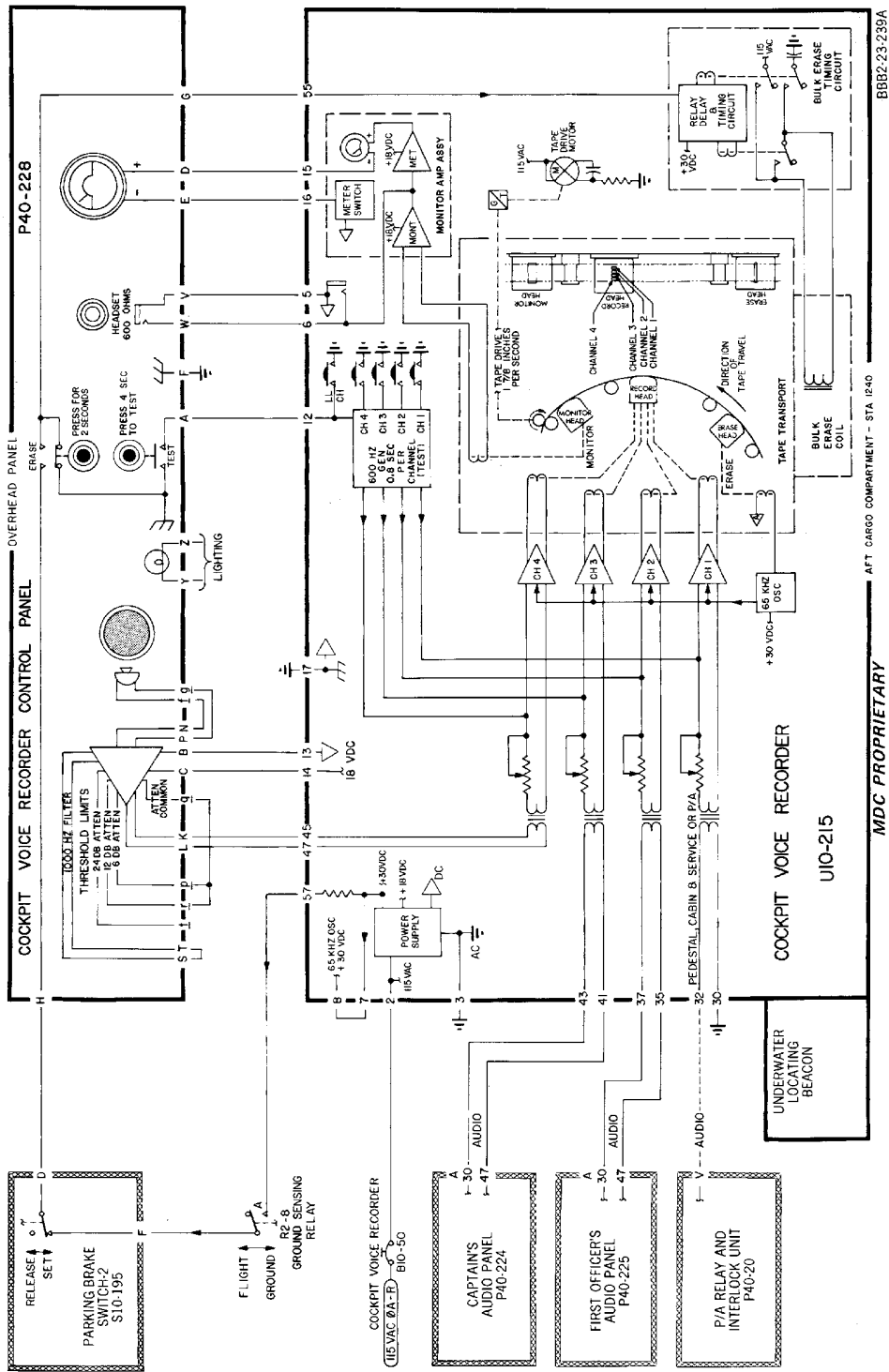
EFFECTIVITY  
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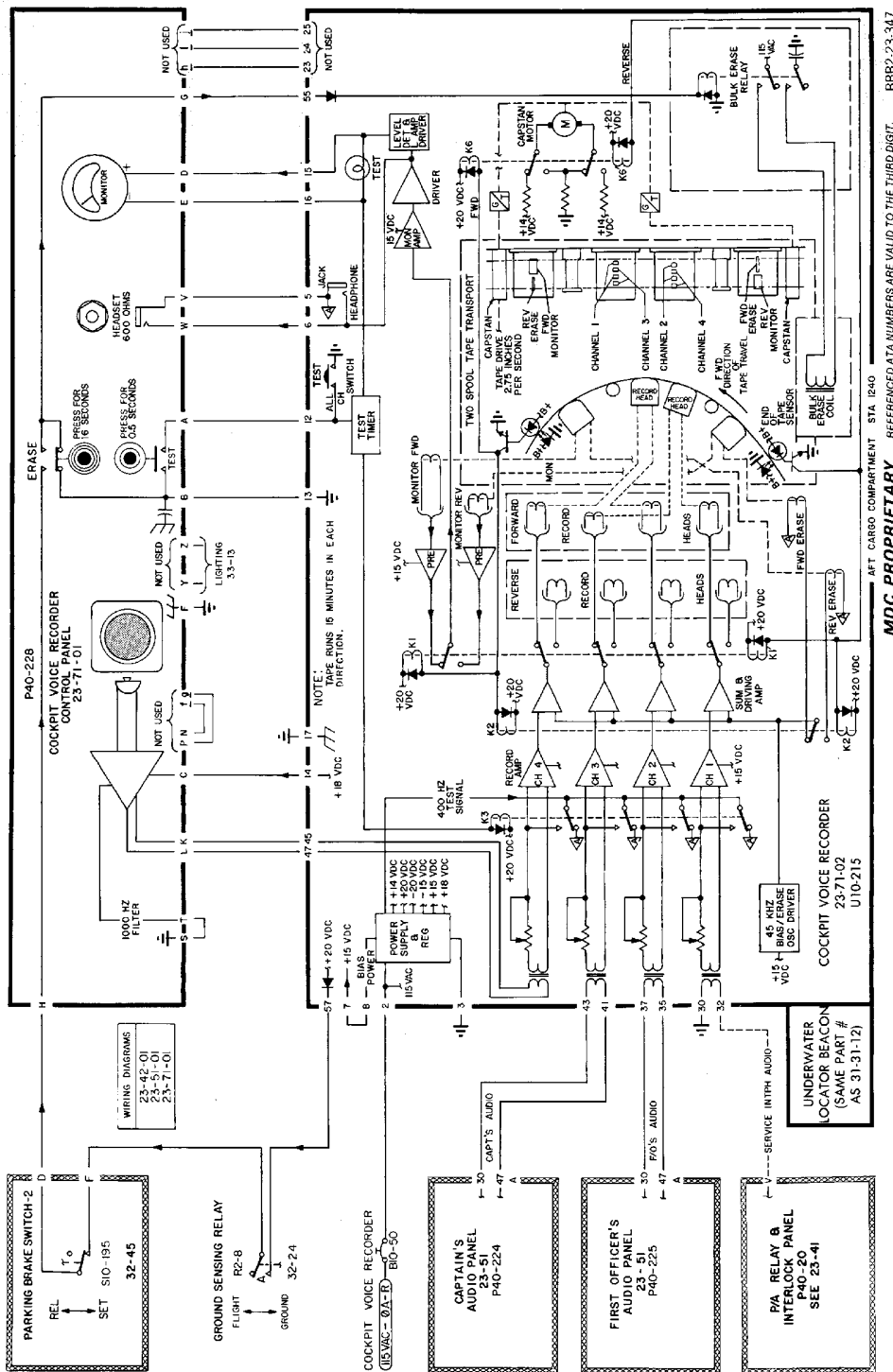


Cockpit Voice Recorder System -- Schematic  
Figure 101/23-70-00-990-805 (Sheet 1 of 6)

EFFECTIVITY  
WJE 880

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Cockpit Voice Recorder System -- Schematic  
Figure 101/23-70-00-990-805 (Sheet 2 of 6)

EFFECTIVITY  
WJE 415-427, 429, 861-866, 868, 869, 871-874, 891

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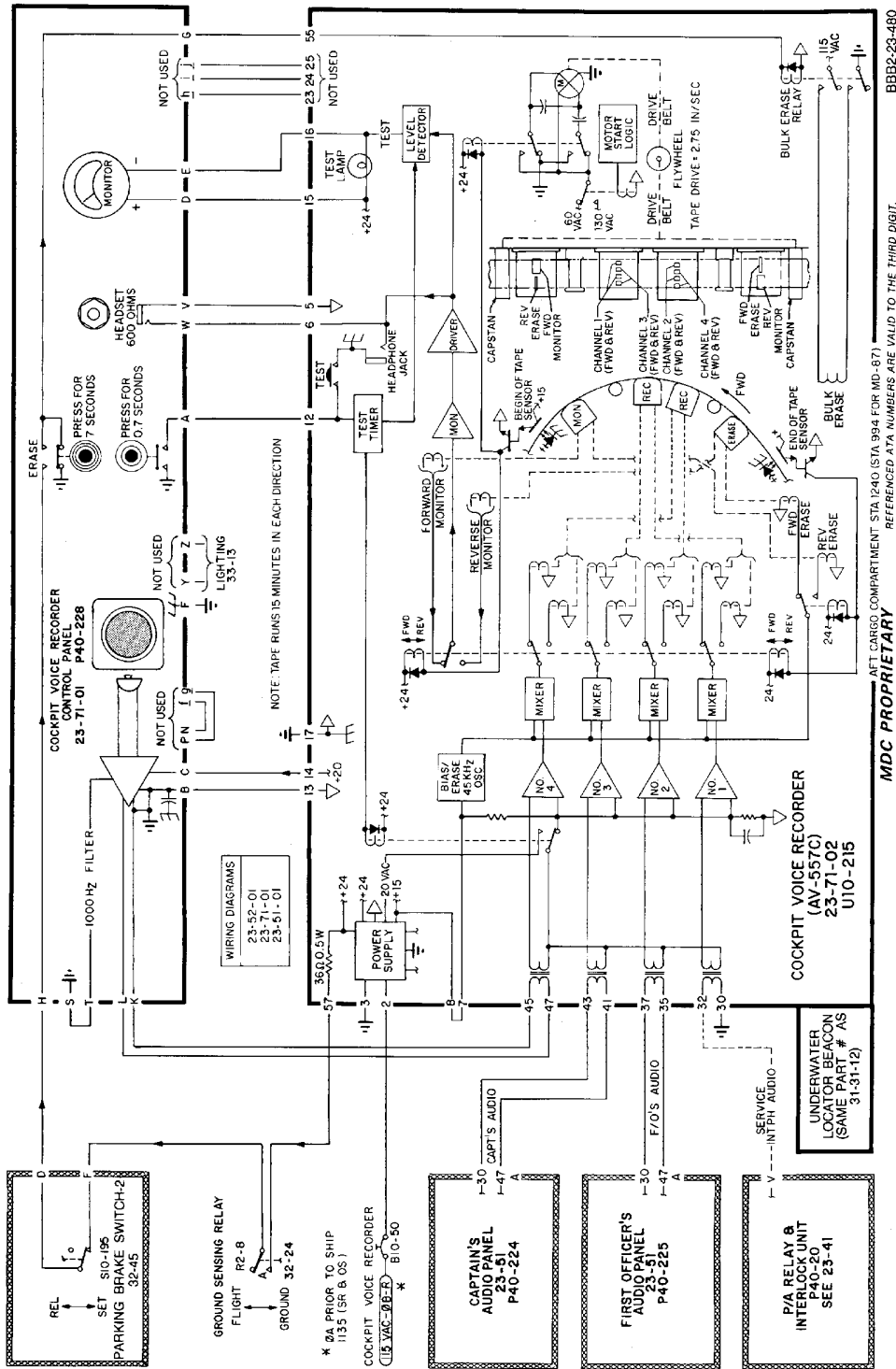
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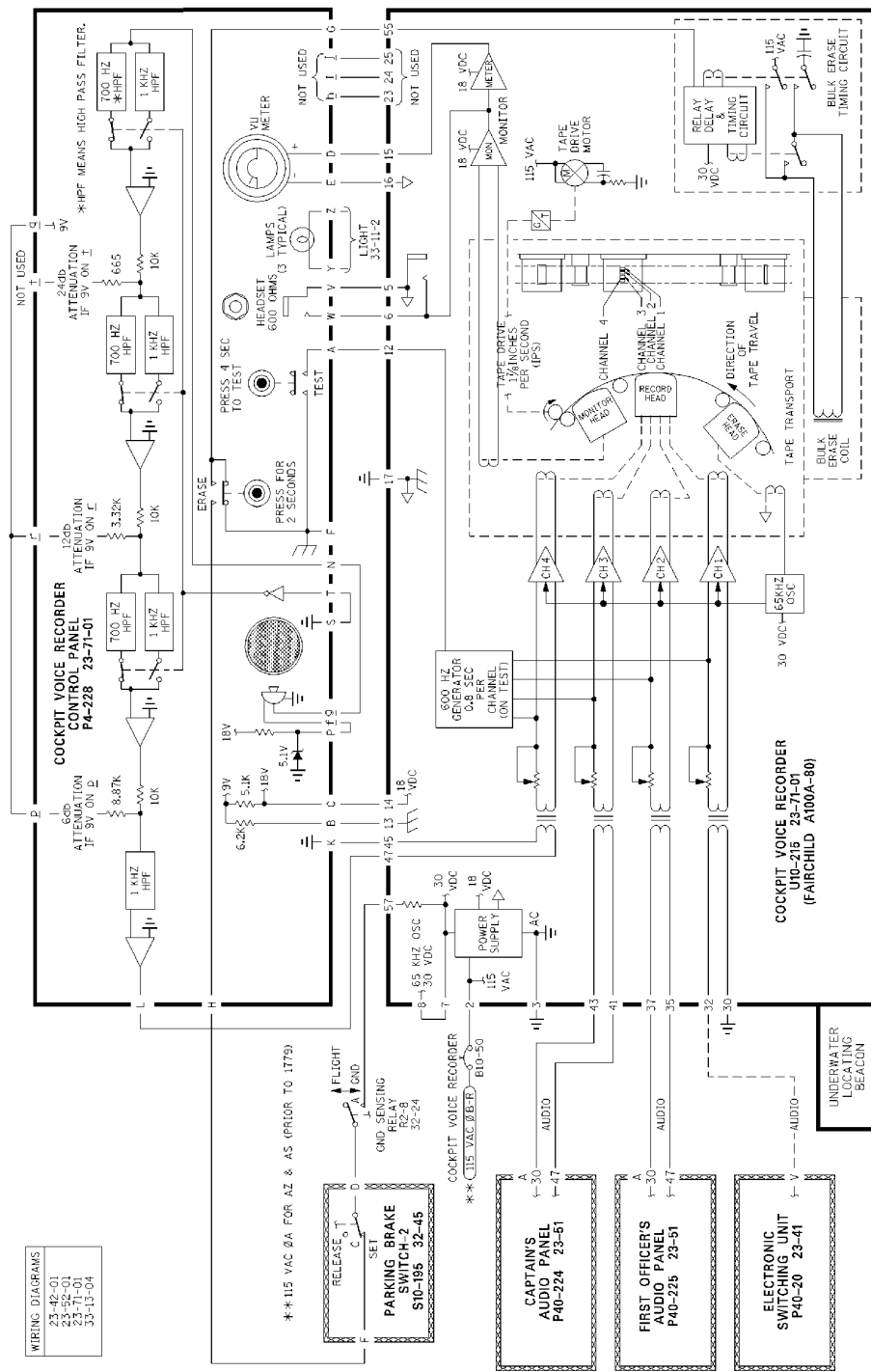


Cockpit Voice Recorder System -- Schematic  
Figure 101/23-70-00-990-805 (Sheet 3 of 6)

EFFECTIVITY  
WJE 405, 409, 410, 884

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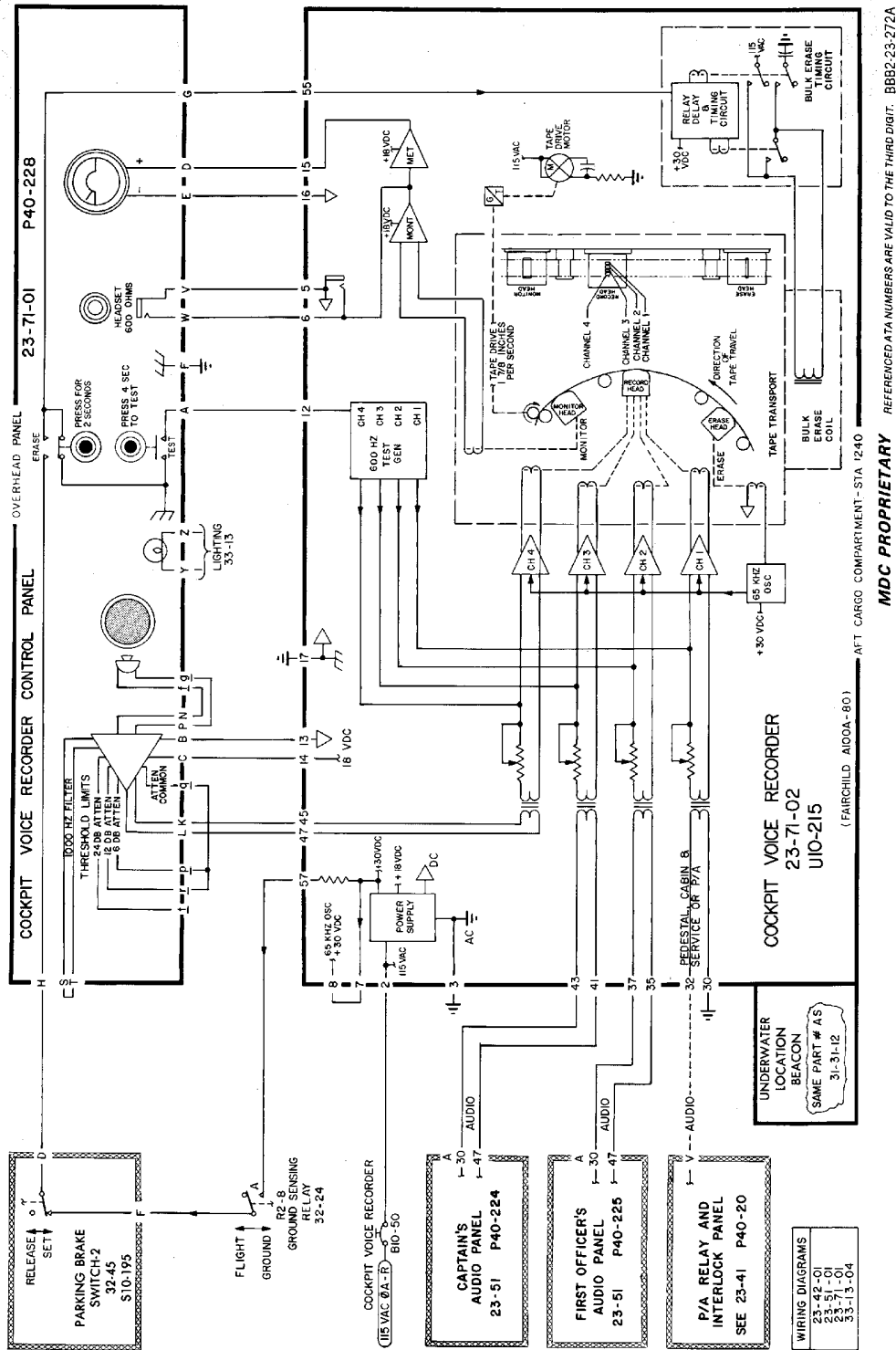
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**Cockpit Voice Recorder System -- Schematic**  
**Figure 101/23-70-00-990-805 (Sheet 4 of 6)**

EFFECTIVITY  
**WJE 401-404, 407, 408, 411, 412, 414, 875-879, 886, 887**

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Cockpit Voice Recorder System -- Schematic  
Figure 101/23-70-00-990-805 (Sheet 5 of 6)

EFFECTIVITY  
WJE 881, 883

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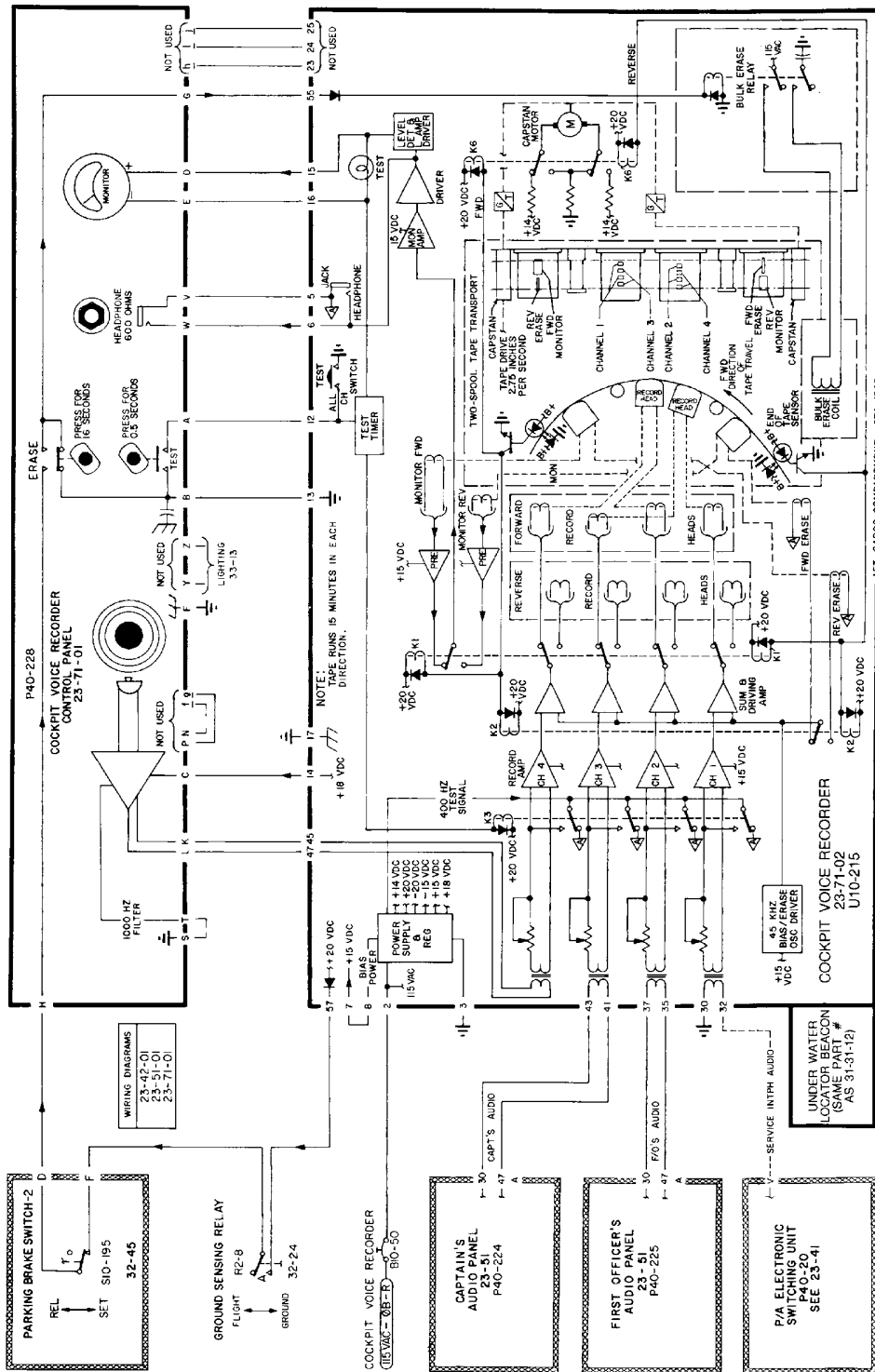
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MDC PROPRIETARY REFERENCED DATA NUMBERS ARE VALID TO THE THIRD DIGIT. B8B2-23-272A

AFT CARGO COMPARTMENT - STA 1240 (FAIRCHILD, A100A-80)

WIRING DIAGRAMS  
23-42-01  
23-51-01  
23-71-01  
33-13-04

# MD-80 AIRCRAFT MAINTENANCE MANUAL



BBB2-23-539  
REFERENCED ATA NUMBERS ARE VALID TO THE THIRD DIGIT.

AT CARGO COMPARTMENT STA 1240

MDC PROPRIETARY

Cockpit Voice Recorder System -- Schematic  
Figure 101/23-70-00-990-805 (Sheet 6 of 6)

EFFECTIVITY  
WJE 406, 892, 893

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# MD-80 AIRCRAFT MAINTENANCE MANUAL

## VOICE RECORDERS - MAINTENANCE PRACTICES

### 1. General

- A. The voice recorder maintenance practices are performed to determine the operational status of the system. The voice recorder is located in the aft cargo compartment and the microphone monitor is located in the flight compartment on the overhead switch panel.
- B. Make sure that these circuit breakers are closed:

#### **LOWER EPC, XFER BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
T	42	B10-386	FLIGHT INTERPHONE -2

#### **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	8	B10-118	PASSENGER ADDRESS
<b>WJE 410</b>			
A	9	B10-118	PASSENGER ADDRESS
<b>WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893</b>			
A	10	B10-47	FLIGHT INTERPHONE-1
<b>WJE 410</b>			
A	11	B10-47	FLIGHT INTERPHONE-1

#### **UPPER EPC, LEFT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 405, 409, 410, 873, 874, 877, 880, 884, 886, 887, 892, 893</b>			
F	22	B10-117	PASSENGER ADDRESS

#### **UPPER EPC, R AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE 417, 419, 421, 423, 865, 869, 871, 872</b>			
L	30	B1-24	RIGHT GROUND CONTROL RELAY
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893</b>			
L	33	B1-24	RIGHT GROUND CONTROL RELAY

#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
<b>WJE ALL</b>			
F	6	B10-50	COCKPIT VOICE RECORDER

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### 2. Adjustment/Test Voice Recorder

#### A. Self Test from Microphone Monitor

**Table 201**

Step	Operation	Desired Result
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
(1)	Press voice recorder microphone monitor TEST pushbutton for approximately 1/2 second. (To assure valid test, button should not be pressed longer than 1/2 second.)	After a slight delay, the meter should deflect into green area, then drop to zero. This indicates that all four channels are recording.
<b>WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887</b>		
(1)	Connect headset to phone jack at microphone monitor.	Monitor recorder system self test.
(2)	Press TEST button on microphone monitor for approximately 5 seconds.	In approximately 1 second, microphone monitor meter should indicate a minimum of 8 and 600 Hz tone should be heard in headset. The meter needle may oscillate slightly as the CVR sequences the test through all four channels. A faulty channel will give a definite NO-GO indication.
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
<u>NOTE:</u> Absence of two deflections after the characteristic delay or a single deflection into the green area without the delay, lasting approximately 10 seconds, indicates the system is faulty. Instantaneous momentary deflections should be ignored.		
<u>NOTE:</u> On older models of the microphone monitor panel, the meter will deflect into a white zone to indicate a "GO" condition. Newer models will deflect into a green zone.		

#### B. Self Test from Voice Recorder

**Table 202**

Step	Operation	Desired Result
<u>NOTE:</u> If the STATUS IND lights only once, or does not light at all, the system is faulty.		

### WJE ALL

#### C. System Test

**Table 203**

Step	Operation	Desired Result
<b>WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893</b>		
(1)	Connect headset to phone jack at microphone monitor.	Monitor recorder system test.
<b>WJE 405, 406, 409, 410, 884</b>		
(1)	On overhead panel connect headset to phone jack at microphone monitor.	Test set up.
<b>WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893</b>		
(2)	Place parking brake in SET position.	Parking brake set.

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WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893 (Continued)

**Table 203 (Continued)**

Step	Operation	Desired Result
<b>WJE 405, 406, 409, 410, 884</b>		
(2)		
<b>WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893</b>		
(3)	At captain's audio panel, activate interphone switches for interphone operation.	
<b>WJE 405, 406, 409, 410, 884</b>		
(3)	Verify both captain's control wheel push to talk and audio panel RADIO/INT switches are in their center positions.	Verified.
(4)	Place parking brake in SET position.	Parking brake set.
<b>WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893</b>		
(4)	Cover monitor microphone securely with hand, and speak into captain's microphone.	Speech should be audible through test headset with approximately 0.5 second delay.
<b>WJE 405, 406, 409, 410, 884</b>		
(5)	Cover monitor microphone securely with hand, and speak into captain's microphone.	Speech should be audible through test headset.
<b>WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893</b>		
(5)	Repeat steps (3) and (4) using first officer's audio control panel and microphone.	Same as step (4).
(6)	Repeat step (4) using aft pedestal hand set, in both PA and interphone modes.	Same as step (4).
<b>WJE 405, 406, 409, 410, 884</b>		
(6)	Repeat steps (2) through (5) for first officer's station.	Same as steps (2) through (5).
<b>WJE 401-404, 407, 408, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 886, 887, 891-893</b>		
(7)	From captain's or first officer's seat, speak into monitor microphone in normal conversational tone.	Same as step (4).

**WJE ALL**

D. Erase Test

**Table 204 ERASE TEST**

Step	Operation	Desired Result
<b>NOTE:</b> Aircraft must be on the ground and parking brake set to accomplish bulk erase test.		
<b>WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887</b>		
<b>CAUTION:</b> DO NOT PRESS ERASE BUTTON LONGER THAN 5 SECONDS.		
(1)	Press ERASE button on microphone monitor for a minimum 2 seconds.	Erase operation should be evident by presence of a 400 Hz tone in a headset.

<b>EFFECTIVITY</b> <b>WJE ALL</b>	
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WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887 (Continued)

**Table 204 ERASE TEST (Continued)**

Step	Operation	Desired Result
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
(1)	Press ERASE button on microphone monitor for approximately 7 seconds.	A 400 Hz pulsating tone should be heard at headset, indicating that erasure is taking place.
<b>WJE ALL</b>		
<u>NOTE:</u> Repeated operation of the ERASE button can result in overheat and damage to the bulk erase coil. If the erase function does not work properly allow at least 15 minutes before repeating the test.		
<b>CAUTION:</b> ON ICE PROTECT PANEL (OVERHEAD), VERIFY THAT METER SEL AND HEAT SWITCH IS IN OFF POSITION, AS HEATER OR SENSOR DAMAGE COULD OCCUR.		
<b>WARNING:</b> 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.		
(2)	Open this circuit breaker:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	
<b>WJE 417, 419, 421, 423, 865, 869, 871, 872</b>		
	B1-24      RIGHT GROUND CONTROL RELAY      UPPER EPC      R AC BUS      L/30	
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893</b>		
	B1-24      RIGHT GROUND CONTROL RELAY      UPPER EPC      R AC BUS      L/33	
<b>WJE ALL</b>		
(3)	Press ERASE button on microphone monitor for approximately 2 seconds.	400 Hz tone should NOT be heard.
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
(3)	Press ERASE button on microphone monitor for approximately 7 seconds.	400 Hz tone should NOT be heard.
<b>WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887</b>		
(3)	Press ERASE button on microphone monitor for approximately 2 seconds.	400 Hz tone should NOT be heard.
<b>WJE ALL</b>		
(4)	Close this circuit breaker:	
	REF DES      CIRCUIT BREAKER      LOCATION      PANEL AREA      ROW/COL	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

**Table 204 ERASE TEST (Continued)**

Step	Operation	Desired Result
<b>WJE 417, 419, 421, 423, 865, 869, 871, 872</b>		
B1-24	RIGHT GROUND CONTROL RELAY	UPPER EPC R AC BUS L/30
<b>WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893</b>		
B1-24	RIGHT GROUND CONTROL RELAY	UPPER EPC R AC BUS L/33
<b>WJE ALL</b>		
<b>CAUTION:</b> VERIFY WHEEL CHOCKS ARE IN PLACE.		
(5)	Release parking brake.	
<b>WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887</b>		
(6)	Press ERASE button on microphone monitor for approximately 2 seconds.	400 Hz tone should NOT be heard.
<b>WJE 405-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
(6)	Press ERASE button on microphone monitor for approximately 7 seconds.	400 Hz tone should NOT be heard.
<b>WJE ALL</b>		
(7)	Set parking brake.	
(8)	Test completed. Return aircraft to required configuration.	

EFFECTIVITY	
WJE ALL	

# 23-70-00

**MD-80**  
**AIRCRAFT MAINTENANCE MANUAL**  
**VOICE RECORDERS - ADJUSTMENT/TEST**

1. **General**

A. This procedure contains MSG-3 task card data.

**TASK 23-70-00-710-801**

2. **Operational Check Cockpit Voice Recording System - 4 Channel Operation**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

<b>Reference</b>	<b>Title</b>
23-70-00 P/B 201	VOICE RECORDERS - MAINTENANCE PRACTICES

**B. Cockpit Voice Recording System - 4 Channel Operation Operational Check**

**SUBTASK 23-70-00-710-001**

- (1) Do the operational check. (VOICE RECORDERS - MAINTENANCE PRACTICES, PAGEBLOCK 23-70-00/201)

———— **END OF TASK** ————

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

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## VOICE RECORDER MICROPHONE MONITOR - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation and operational test for the voice recorder microphone monitor. The voice recorder microphone monitor is located in the flight compartment on the forward overhead switch panel.

### 2. Removal/Installation Microphone Monitor

- A. Remove Microphone Monitor

**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, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT

#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

- (2) Press on panel face, unlock slot-head fasteners and release hand pressure.  
 (3) Lower panel from cavity.  
 (4) Disconnect electrical connector.

- B. Install Microphone Monitor

**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, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT

#### **UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

- (2) Visually check microphone monitor receptacle and airplane electrical connector for damage and foreign objects.  
 (3) Secure aircraft electrical connector to microphone monitor receptacle.  
 (4) Position panel in cavity.  
 (5) Apply hand pressure to panel face and lock slot-head fasteners.  
 (6) Remove the safety tags and close these circuit breakers:

#### **UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT

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WJE ALL

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**UPPER EPC, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

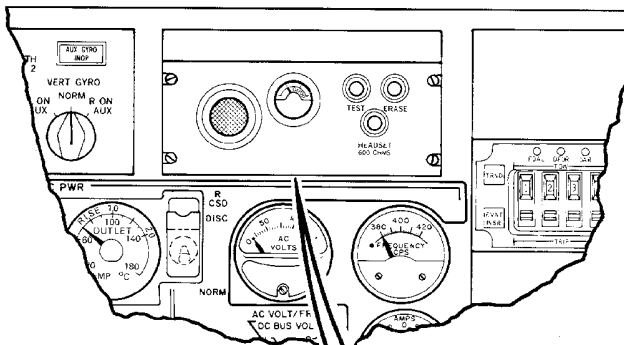
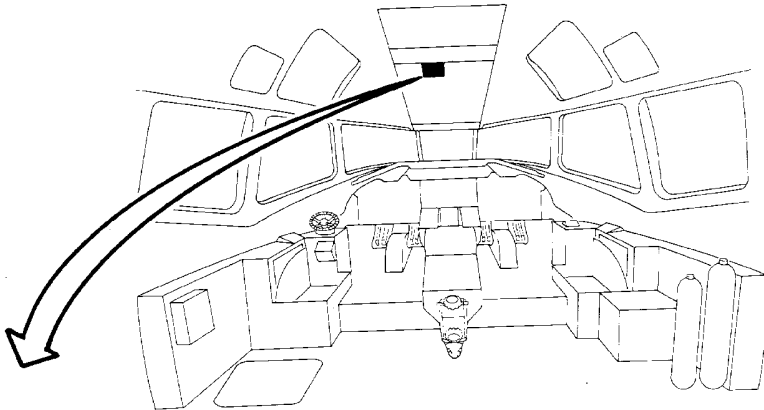
EFFECTIVITY  
WJE ALL

TP-80MM-WJE

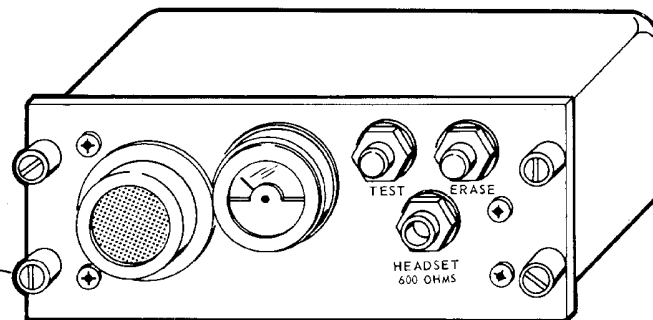
**23-70-01**

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**MD-80  
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CAMLOC FASTENER  
(TYPICAL 4 PLACES)



**COCKPIT VOICE RECORDER  
MICROPHONE MONITOR**

BBB2-23-435

**Voice Recorder Microphone Monitor -- Removal/Installation  
Figure 201/23-70-01-990-801 (Sheet 1 of 2)**

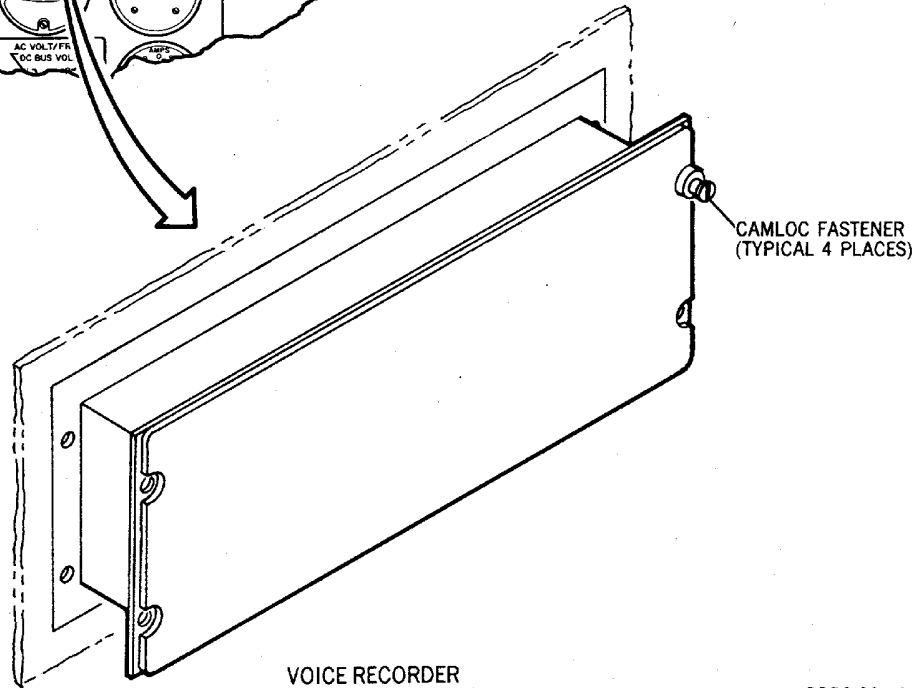
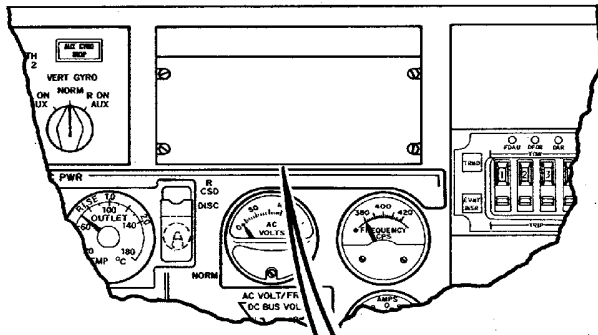
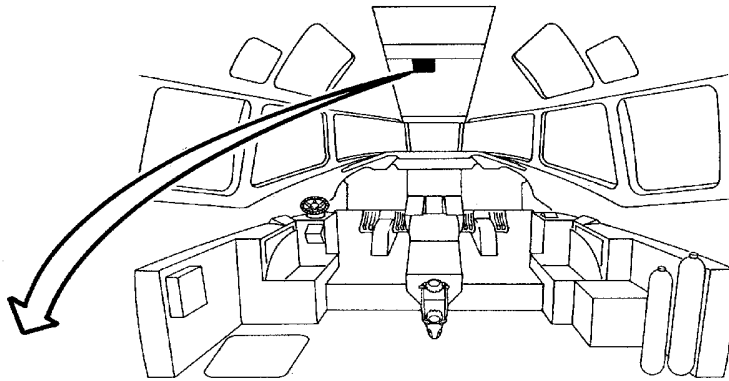
EFFECTIVITY  
WJE 886, 887

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VOICE RECORDER  
MICROPHONE MONITOR

BBB2-23-15

Voice Recorder Microphone Monitor -- Removal/Installation  
Figure 201/23-70-01-990-801 (Sheet 2 of 2)

EFFECTIVITY

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

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### 3. Test Voice Recorder

#### A. Self Test

**Table 201**

Step	Operation	Desired Result
<b>WJE 405-408, 410, 411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
(1)	Press voice recorder microphone monitor TEST pushbutton for approximately 1/2 second. (To assure valid test, button should not be pressed longer than 1/2 second.)	After a slight delay, meter should deflect into green area, drop to zero then deflect again. This indicates that all four channels are recording.
<b>WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887</b>		
(1)	Connect headset to HEADSET jack on microphone monitor.	
<b>WJE 405-408, 410, 411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891-893</b>		
<u>NOTE:</u> Absence of two deflections after characteristic delay indicates the system is inoperative. A single deflection into the green area without delay, lasting approximately 10 seconds, indicates the system is faulty. Instantaneous momentary deflections should be ignored.		
<u>NOTE:</u> On older models of the microphone monitor panel, the meter will deflect into a white zone to indicate a "GO" condition. Newer models will deflect into a green zone.		
(2)	Test completed. Return aircraft to required configuration.	
<b>WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887</b>		
(2)	Press TEST button on microphone monitor for approximately five seconds.	In approximately 1 second monitor meter should indicate a minimum of 8, and a 600 Hz tone should be heard in headset. Meter needle should oscillate slightly as CVR sequences test through all four channels. A faulty channel will give a definite NO-GO indication.
(3)	Test complete. Return aircraft to required configuration.	

EFFECTIVITY  
WJE ALL

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### VOICE RECORDER - MAINTENANCE PRACTICES

**1. General**

- A. This maintenance practice provides removal/installation and operational test of the voice recorder. The voice recorder is located in the aft cargo compartment.

**2. Removal/Installation Voice Recorder**

- A. Remove Voice 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, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

- (2) Loosen hold-down nuts at lower front of voice recorder.
- (3) Swing hold-down nuts down to clear recorder.
- (4) Turn extractor drive handle counterclockwise until recorder connector is completely disengaged.
- (5) Raise front of recorder from extractor channel and carefully slide recorder from mount.

- B. Install Voice 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, RIGHT RADIO AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

- (2) Visually check voice recorder connector and mounting rack receptacle for damage and foreign objects.
- (3) Ensure Underwater Locator Beacon (ULB) is installed on the face of the CVR. (UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 23-70-03/201)
- (4) Carefully place voice recorder on mounting rack, positioning lower flange of recorder front panel into extractor channel.

**CAUTION:** DAMAGE TO CONNECTOR MAY OCCUR IF EXTRACTOR DRIVE HANDLE BECOMES DIFFICULT TO TURN AND EXTREME FORCE IS APPLIED; CHECK FOR FOREIGN OBJECTS, PIN ALIGNMENT, AND DAMAGE.

- (5) Turn extractor handle clockwise until voice recorder connector is completely engaged.
- (6) Raise hold-down nuts, mate with voice recorder hold-down lugs, and tighten securely.

EFFECTIVITY	
WJE ALL	

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

(7) Remove the safety tag and close this circuit breaker:

### UPPER EPC, RIGHT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	6	B10-50	COCKPIT VOICE RECORDER

### 3. Test Voice Recorder

A. Self Test

**WJE 405-408, 410, 411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 884, 891, 892**

**Table 201**

Step	Operation	Desired Result
(1)	Press voice recorder microphone monitor TEST pushbutton for approximately 1/2 second. (To assure valid test, button should not be pressed longer than 1/2 second.)	After a slight delay, meter should deflect into green area, drop to zero then deflect again. This indicates that all four channels are recording.
<p><u>NOTE:</u> Absence of two deflections after characteristic delay indicates the system is inoperative. A single deflection into the green area without delay, lasting approximately 10 seconds, indicates the system is faulty. Instantaneous momentary deflections should be ignored.</p>		
<p><u>NOTE:</u> On older models of the microphone monitor panel, the meter will deflect into a white zone to indicate a "GO" condition. Newer models will deflect into a green zone.</p>		
(2)	Test completed. Return aircraft to required configuration.	

**WJE 401-404, 412, 414, 875-879, 881, 883, 886, 887**

**Table 202**

Step.	Operation	Desired Result
(1)	Connect headset to HEADSET jack on microphone monitor.	
(2)	Press TEST button on microphone monitor for approximately five seconds.	In approximately one second monitor meter should indicate a minimum of 8, and a 600 Hz tone should be heard in headset. Meter needle should oscillate slightly as CVR sequences test through all four channels. A faulty channel will give a definite NO-GO indication.
(3)	Test complete. Return airplane to required configuration.	

**WJE ALL**

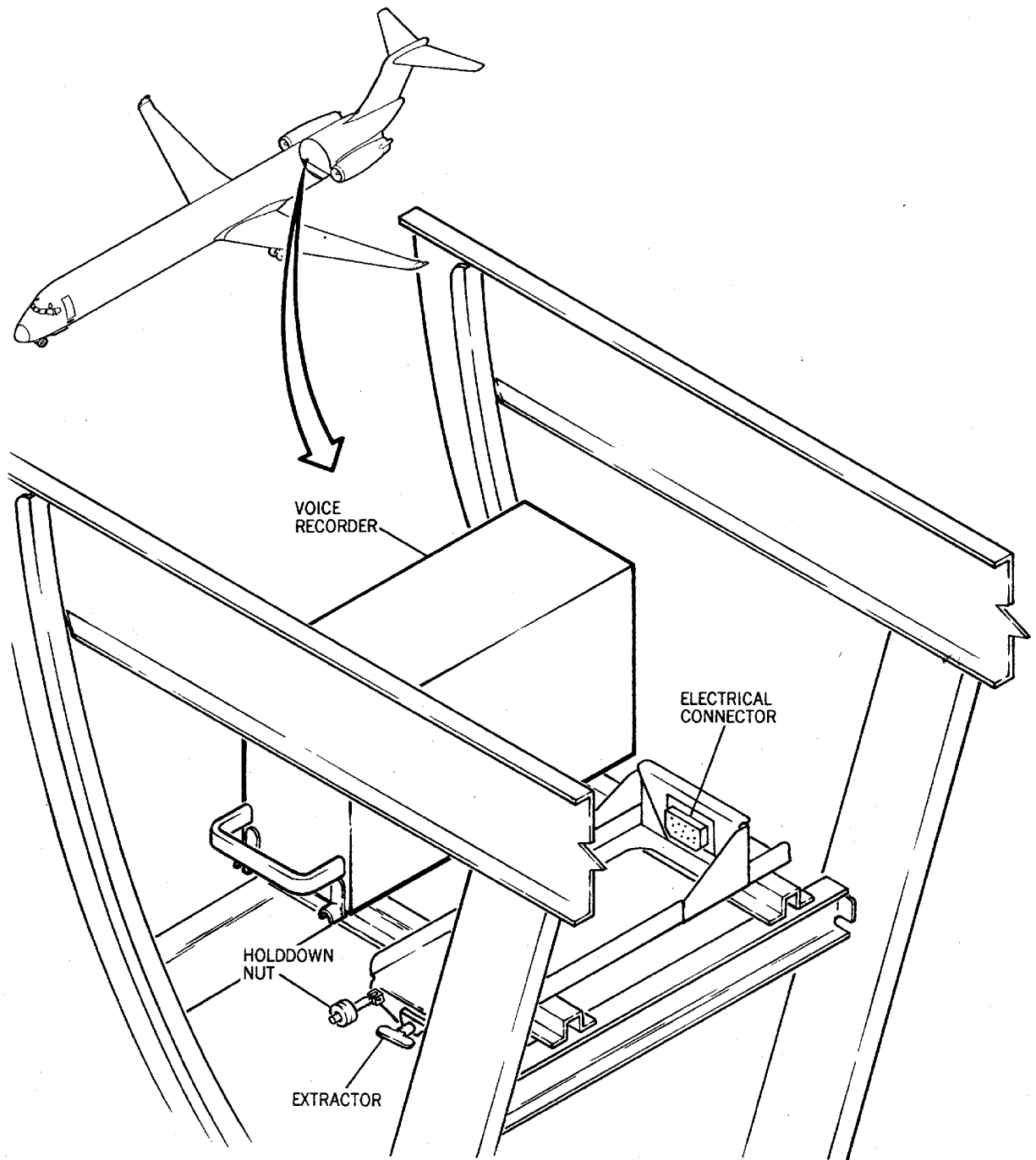
EFFECTIVITY  
WJE ALL

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BBB2-23-14 A

Voice Recorder -- Removal/Installation  
Figure 201/23-70-02-990-801

EFFECTIVITY  
WJE ALL

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TP-80MM-WJE

# MD-80 AIRCRAFT MAINTENANCE MANUAL

## UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES

### 1. General

- A. This maintenance practice provides removal/installation, servicing and operational test procedures for the underwater beacon.
- B. The underwater beacon is located on the front panel of the voice recorder in the aft cargo compartment.

### 2. Equipment and Materials

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

NOTE: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

**Table 201**

Name and Number	Manufacturer
Freon	Commercially available
Hose split	Commercially available
Lubricant, 810-346	DuKane
Multimeter, Digital (10 Megaohm or greater input impedance)	Commercially available
Test set, ultrasonic ( 42A12A or 42A12C or 42A12D)	DuKane
<u>NOTE:</u> Tester 42A12 may be used with all of the ULBs in question, DK100, DK120 and ELP-362D.	
Test set, acoustic ATS-260	Datasonics
<u>NOTE:</u> Tester ATS-260 may only be used with ELP-362D ULB.	
Test set, Pinglite (PL-3)	DuKane
<u>NOTE:</u> Tester PL-3 may only be used on the DK100 and DK120 UBLs.	
Tester, Pinglite (PL1)	DuKane
<u>NOTE:</u> Tester PL-1 may only be used on the DK100 UBLs.	
Wrench, spanner 810-325	Fairchild
Wrench, torque (0 to 100 inch pounds range)	Commercially available

### 3. Removal/Installation Underwater Locator Beacon

- A. Remove Beacon
  - (1) Remove cover plate by removing four screws and washers. (Figure 201)
  - (2) Pull acoustic beacon from mounting cradle.

EFFECTIVITY <b>WJE ALL</b>
-------------------------------

# 23-70-03

## MD-80 AIRCRAFT MAINTENANCE MANUAL

- (3) Temporarily replace cover plate and four flat head screws with shakeproof lockwashers onto mounting cradle to prevent their loss.

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

### B. Servicing Underwater Beacon (Replace Battery)

**CAUTION:** BATTERY REPLACEMENT SHOULD BE ACCOMPLISHED IN A DUST-FREE AREA.

**CAUTION:** DO NOT CLAMP IN VISE.

- (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.

**CAUTION:** FOREIGN MATTER CAN DAMAGE THREADS OR ALLOW WATER LEAKAGE.

- (6) Clean thread and O-ring groove in beacon body and end cap by wiping thoroughly with freon.
- (7) Apply thin coating of lubricant on new O-ring and install in groove of end cap.
- (8) Install shock cushion on end cap.
- (9) Lubricate threads of end cap and install in beacon body. Tighten with hand force on spanner wrench only.
- (10) Perform operational test. (Paragraph 4.)

**WJE ALL**

### C. Install Beacon

- (1) Slide into mounting cradle on voice recorder.

**NOTE:** Position beacon so markings and battery replacement date label can be read with switch end down.

- (2) Install cover plate, shakeproof washer, and nut on each corner of cover plate and tighten to a torque of 15 to 20 inch-pounds (1.7 to 2.3 N·m).

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

- (3) Perform operational test. (Paragraph 4.)

**WJE 412, 414**

- (4) Perform operational test. (Paragraph 4.)

**WJE ALL**

### 4. Adjustment/Test Underwater Locator Beacon

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

#### A. Operational Test Using Ultrasonic Test Set (Figure 202)

- (1) Place input selector switch on ultrasonic test set in INT position.

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

- (2) Set tuning control between 35 and 40 kHz. Activate test set by jingling keys near microphone.
- (3) Using flexible connector, establish temporary short across beacon water switch (center pin to case). Tune test set for best signal. If signal is not present, replace battery.

**WJE 412, 414**

B. Operational Test Using Ultrasonic Test Set

- (1) Place input selector switch on ultrasonic test set in INT position.
- (2) Set tuning control between 35 and 40 kHz. Activate test set by jingling keys near microphone.

**WJE ALL**

C. Operational Test Using Pinglite Tester PL1 (Figure 203)

- (1) Using flexible connector, establish temporary short across beacon water switch (center pin to case).
- (2) Press end of Pinglite tester PL1 to beacon body approximately one inch from switch end.
- (3) Depress and hold PUSH TO OPERATE switch on Pinglite tester PL1. BEACON ACTIVE WHEN FLASHING light will flash with each output pulse indicating beacon is operating. Release switch.

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

D. Pulse Rate and Off-Current Test (Figure 204)

- (1) Pulse Rate Test. Determine pulse repetition rate by counting pulses for 10 seconds and divide by 10. Pulse repetition should be one pulse per second.

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 a new battery, or if physical damage is apparent, beacon should be removed from service.

- (2) Off-Current Test. Connect test leads of microammeter to center pin and beacon case. Check current leakage between battery and beacon case. Leakage should be less than two microamperes.

NOTE: As little as one milliampere of off current will exhaust new battery in 30-40 days. Beacons with greater than two microamperes of off current should be taken out of service immediately. Such units are not field repairable but can be rebuilt by manufacturer.

**WJE 412, 414**

E. Pulse Rate and Off-Current Test (Figure 204)

- (1) Pulse Rate Test. Determine pulse repetition rate by counting pulses for 10 seconds and divide by 10. Pulse repetition should be one pulse per second.

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 a new battery, or if physical damage is apparent, beacon should be removed from service.

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## MD-80 AIRCRAFT MAINTENANCE MANUAL

### WJE 412, 414 (Continued)

- (2) Off-Current Test. Connect test leads of microammeter to center pin and beacon case. Check current leakage between battery and beacon case. Leakage should be less than two microamperes.

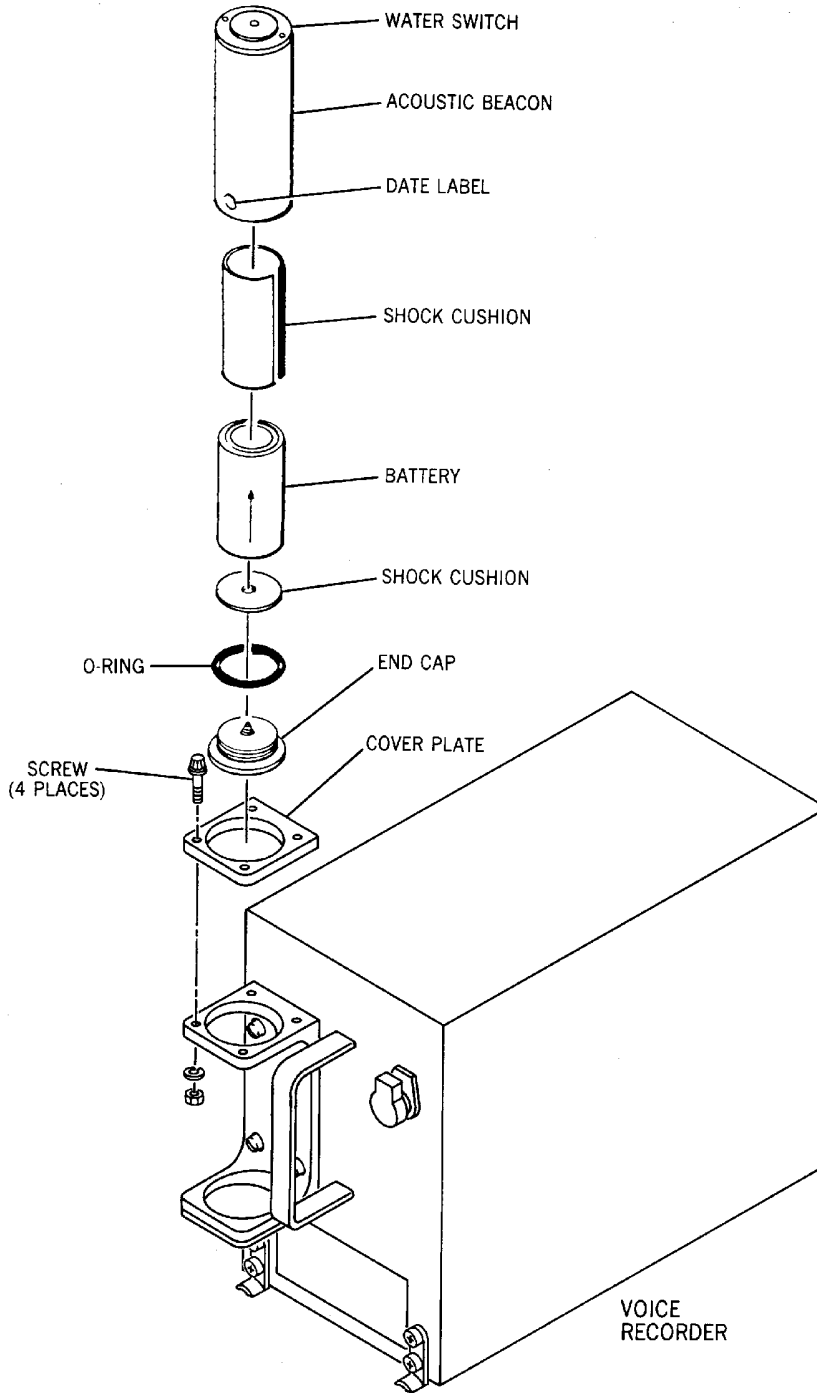
NOTE: As little as one milliampere of off current will exhaust new battery in 30-40 days. Beacons with greater than two microamperes of off current should be taken out of service immediately. Such units are not field repairable but can be rebuilt by manufacturer.

### WJE ALL

- F. Test the ULB using Pinglite test set PL-3 (Figure 205)
  - (1) Remove velcro collar from PL-3 test set.
  - (2) Put spring end of PL-3 on water switch end of ULB, make sure center spring touches water switch pin.
  - (3) Listen for 3-4 audible pings and LED indicator will flash to indicate a good battery.
- G. Test the ULB using ATS-260 acoustic test set (Figure 206)
  - (1) 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.
  - (2) Push and hold PUSH TO TEST switch.
  - (3) Apply ATS-260 probe to center of ELP-362D end cap labeled KEEP CLEAN.
  - (4) Check battery condition by observing green and red indicators on ATS-260 tester.
    - (a) If green indicator is lit, battery is good.
    - (b) If red indicator is lit, battery should be replaced.
    - (c) There is an audible tone from the test set and/or the amber indicator is flashing.
    - (d) When the amber light is not flashing and no tone is heard, the battery is not operating properly.

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BBB2-23-222

**Underwater Locator Beacon -- Removal/Installation**  
**Figure 201/23-70-03-990-801**

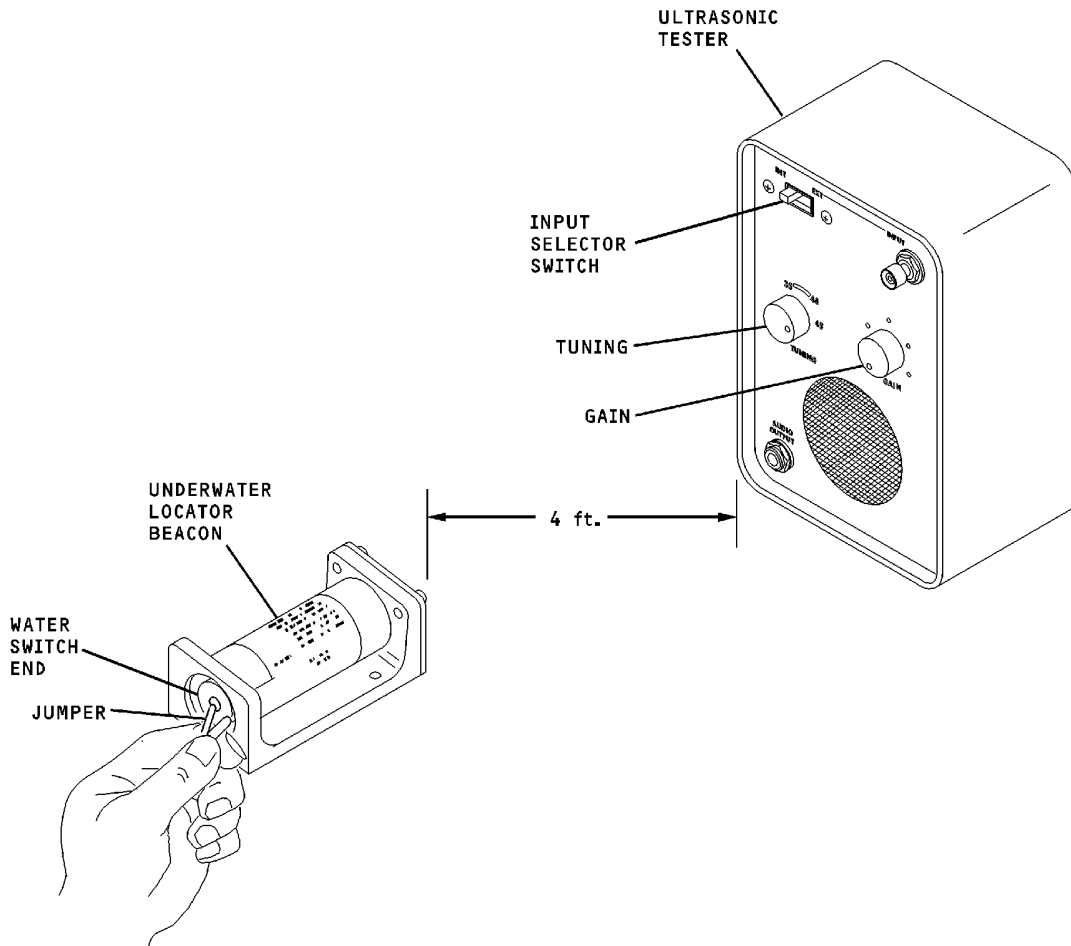
EFFECTIVITY  
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CAG(IGDS)

BBB2-23-819

**Ultrasonic Test Set**  
**Figure 202/23-70-03-990-813**

EFFECTIVITY  
WJE ALL

TP-80MM-WJE

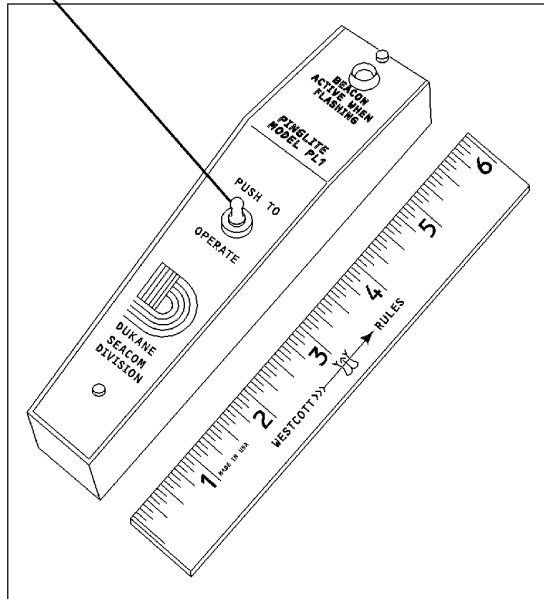
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PUSH TO OPERATE  
SWITCH

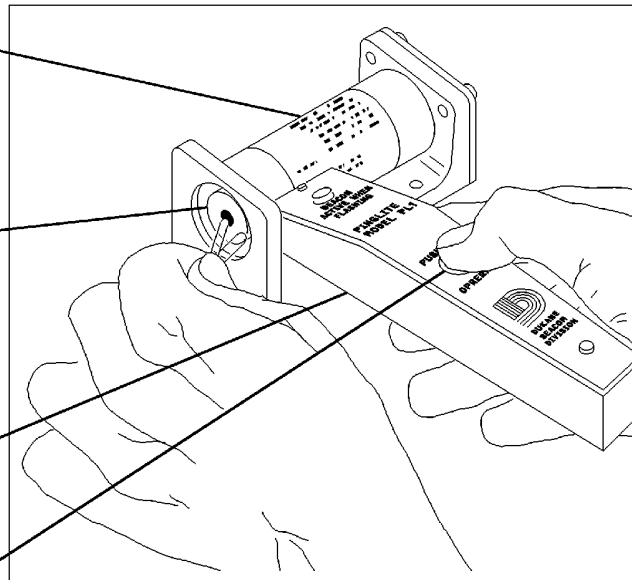


UNDERWATER  
LOCATOR BEACON

WATER SWITCH END

PINGLITE TESTER PL 1

PUSH TO OPERATE  
SWITCH



CAG(IGDS)

BBB2-23-820

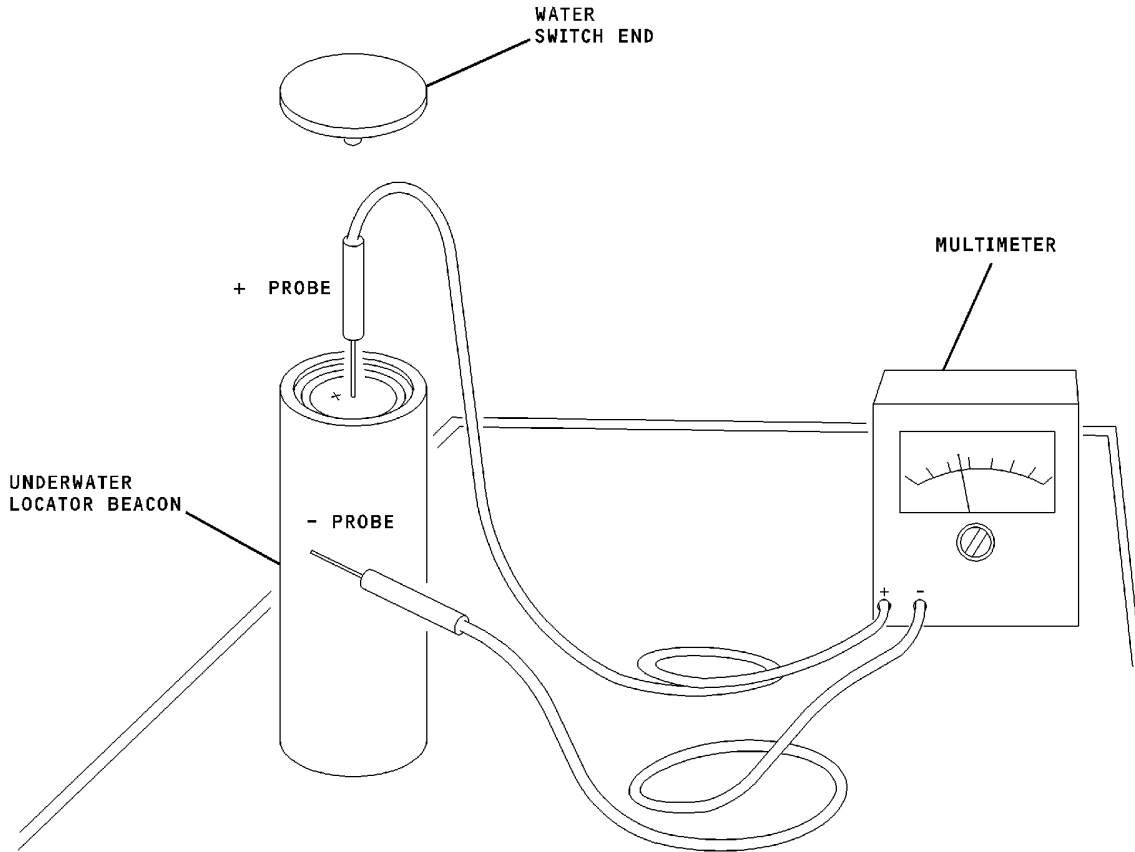
Test Point of the Pinglite Tester PL1  
Figure 203/23-70-03-990-814

EFFECTIVITY  
WJE ALL

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**MD-80  
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CAG(IGDS)

BBB2-23-821

**Off Current Test  
Figure 204/23-70-03-990-809**

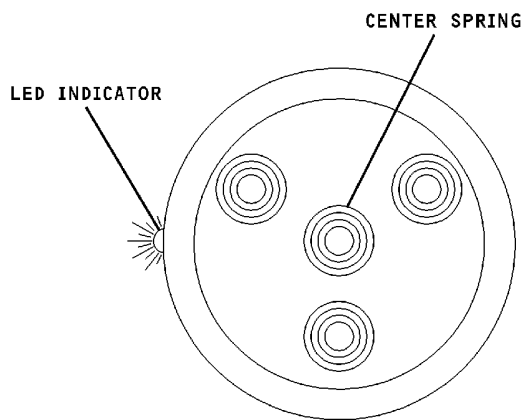
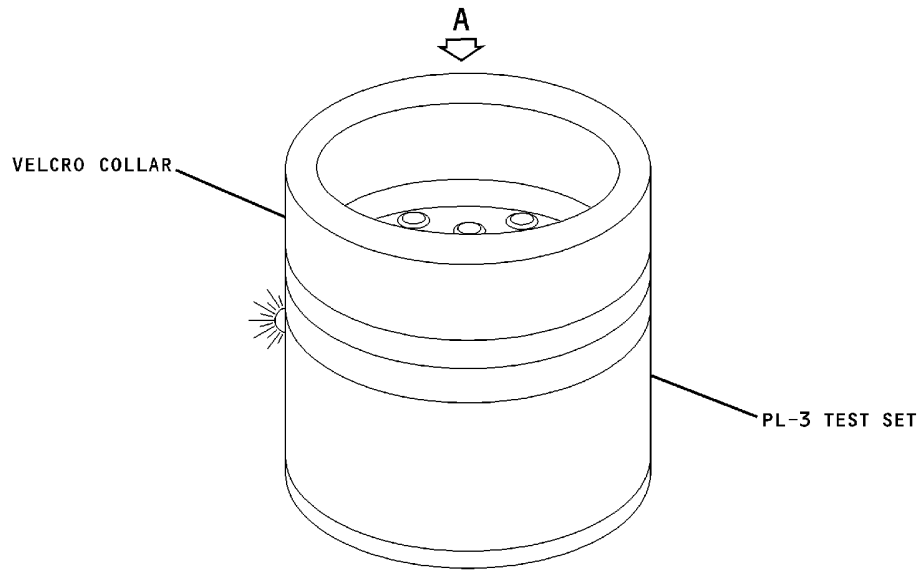
EFFECTIVITY  
WJE ALL

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# MD-80 AIRCRAFT MAINTENANCE MANUAL



VIEW A

CAG(IGDS)

BBB2-23-822

**Pinglite Test Set PL-3**  
**Figure 205/23-70-03-990-810**

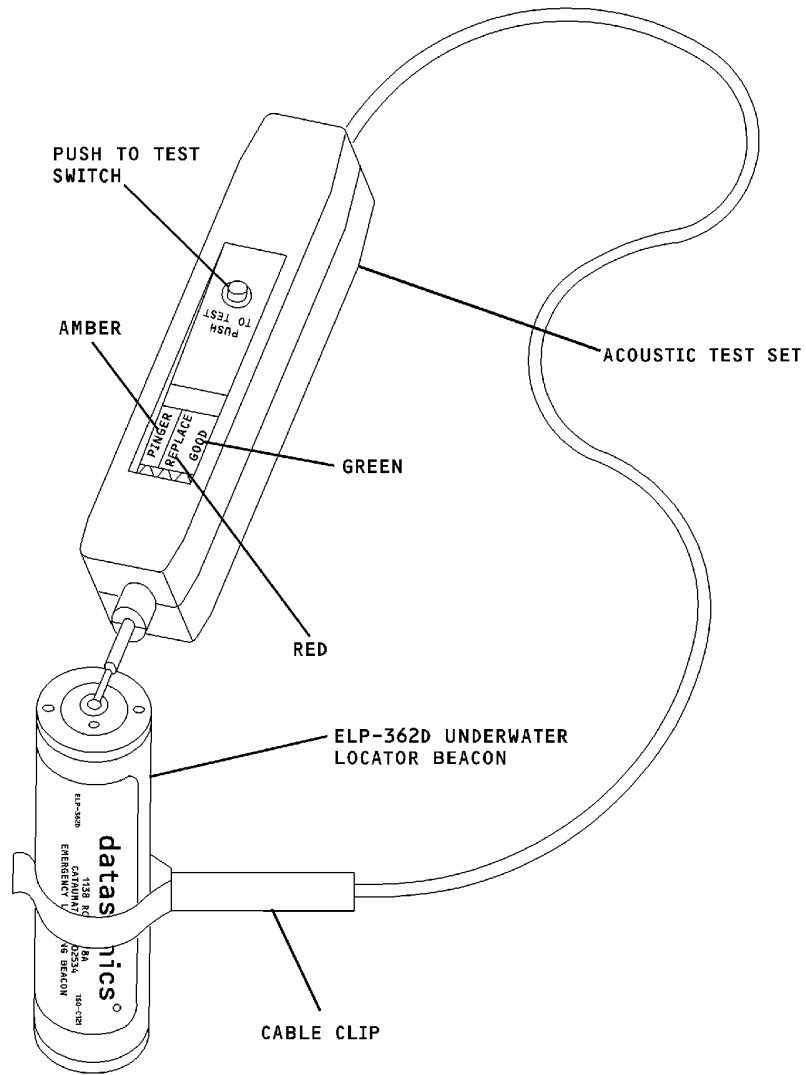
EFFECTIVITY  
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# MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-23-823

**Acoustic Test Set ATS-260**  
**Figure 206/23-70-03-990-811**

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**MD-80  
AIRCRAFT MAINTENANCE MANUAL**

**UNDERWATER LOCATOR BEACON - REMOVAL/INSTALLATION**

**1. General**

A. This procedure contains MSG-3 task card data.

**TASK 23-70-03-901-801**

**2. Discard the Voice Recorder Underwater Locator Beacon Battery**

**NOTE:** This procedure is a scheduled maintenance task.

**A. References**

<b>Reference</b>	<b>Title</b>
23-70-03 P/B 201	UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES

**B. Discard the Voice Recorder Underwater Locator Beacon Battery**

**SUBTASK 23-70-03-010-001**

(1) Open access panel.

**SUBTASK 23-70-03-020-001**

(2) Remove the voice recorder underwater locator beacon battery. (UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 23-70-03/201)

**SUBTASK 23-70-03-901-001**

(3) Discard the voice recorder underwater locator beacon battery.

**SUBTASK 23-70-03-420-001**

(4) Install a serviceable voice recorder underwater locator beacon battery. (UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES, PAGEBLOCK 23-70-03/201)

**SUBTASK 23-70-03-410-001**

(5) Close access panel.

———— **END OF TASK** ————

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