

CHAPTER

23

COMMUNICATIONS



**737-600/700/800/900
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EFFECTIVE PAGES			23-11-00 (cont)			23-11-61 (cont)		
1 thru 6	Jun 15/2009		A 509	Jun 15/2009		A 605	Jun 15/2009	
			A 510	BLANK		A 606	BLANK	
23-CONTENTS			23-11-21			23-12-00		
O 1	Jun 15/2009		R 401	Jun 15/2009		501	Feb 15/2009	
O 2	Jun 15/2009		R 402	Jun 15/2009		502	Feb 15/2009	
O 3	Jun 15/2009		R 403	Jun 15/2009		503	Feb 15/2009	
O 4	Jun 15/2009		R 404	Jun 15/2009		504	Feb 15/2009	
5	Feb 15/2009		R 405	Jun 15/2009		505	Feb 15/2009	
6	Feb 15/2009		R 406	Jun 15/2009		506	Feb 15/2009	
7	Feb 15/2009		R 407	Jun 15/2009		23-12-11		
8	Feb 15/2009		R 408	Jun 15/2009		401	Oct 15/2008	
9	Feb 15/2009		A 409	Jun 15/2009		R 402	Jun 15/2009	
10	Feb 15/2009		A 410	BLANK		403	Oct 10/2003	
11	Feb 15/2009		23-11-51			404	Feb 15/2009	
12	Feb 15/2009		R 401	Jun 15/2009		405	Oct 10/2006	
13	Feb 15/2009		R 402	Jun 15/2009		406	Feb 15/2009	
14	Feb 15/2009		A 403	Jun 15/2009		R 407	Jun 15/2009	
15	Feb 15/2009		A 404	BLANK		408	Oct 15/2008	
16	Feb 15/2009		23-11-51			409	Jun 15/2008	
17	Feb 15/2009		R 601	Jun 15/2009		410	BLANK	
18	Feb 15/2009		R 602	Jun 15/2009		23-12-21		
19	Feb 15/2009		R 603	Jun 15/2009		401	Oct 10/2003	
20	Feb 15/2009		604	BLANK		402	Jun 10/2005	
21	Feb 15/2009		23-11-61			403	Oct 10/2003	
22	BLANK		R 401	Jun 15/2009		404	Oct 10/2003	
23-00-00			R 402	Jun 15/2009		405	Feb 15/2009	
901	Oct 10/2005		R 403	Jun 15/2009		406	Feb 15/2009	
902	Oct 10/2003		R 404	Jun 15/2009		23-12-31		
903	Oct 10/2005		R 405	Jun 15/2009		401	Feb 15/2009	
904	Oct 10/2005		R 406	Jun 15/2009		402	Feb 15/2009	
23-11-00			R 407	Jun 15/2009		403	Feb 15/2009	
R 501	Jun 15/2009		R 408	Jun 15/2009		404	Feb 15/2009	
R 502	Jun 15/2009		A 409	Jun 15/2009		405	Feb 15/2009	
R 503	Jun 15/2009		A 410	Jun 15/2009		406	BLANK	
R 504	Jun 15/2009		23-11-61			23-12-41		
R 505	Jun 15/2009		A 601	Jun 15/2009		401	Feb 15/2009	
R 506	Jun 15/2009		A 602	Jun 15/2009		402	Feb 15/2009	
R 507	Jun 15/2009		A 603	Jun 15/2009		403	Feb 15/2009	
R 508	Jun 15/2009		A 604	Jun 15/2009		R 404	Jun 15/2009	

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405	Feb 15/2009		503	Feb 15/2009	C	401	Feb 15/2009	C
406	Feb 15/2009		504	Feb 15/2009	C	402	Feb 15/2009	C
407	Feb 15/2009		505	Feb 15/2009	C	403	Feb 15/2009	C
408	BLANK		506	Feb 15/2009	C	R 404	Jun 15/2009	C
23-24-00 Config 1			507	Feb 15/2009	C	405	Feb 15/2009	C
R 201	Jun 15/2009		508	Feb 15/2009	C	406	BLANK	C
O 202	Jun 15/2009		23-27-00 Config 14			23-27-35		
O 203	Jun 15/2009		501	Oct 15/2008	C	201	Feb 15/2009	C
O 204	Jun 15/2009		502	Oct 15/2008	C	202	Feb 15/2009	C
O 205	Jun 15/2009		503	Oct 15/2008	C	203	Feb 15/2009	C
O 206	Jun 15/2009		504	Oct 15/2008	C	204	BLANK	C
R 207	Jun 15/2009		505	Oct 15/2008	C	23-27-35		
R 208	Jun 15/2009		506	Oct 15/2008	C	401	Feb 15/2009	C
A 209	Jun 15/2009		507	Oct 15/2008	C	402	Feb 15/2009	C
A 210	Jun 15/2009		508	Oct 15/2008	C	403	Feb 15/2009	C
A 211	Jun 15/2009		509	Oct 15/2008	C	404	Feb 15/2009	C
A 212	BLANK		510	Oct 15/2008	C	405	Feb 15/2009	C
23-24-00 Config 1			511	Oct 15/2008	C	406	Feb 15/2009	C
501	Feb 15/2009		512	BLANK	C	23-28-00		
502	Feb 15/2009		23-27-32			R 501	Jun 15/2009	
503	Feb 15/2009		201	Oct 15/2008	C	R 502	Jun 15/2009	
504	Oct 10/2007		202	Oct 15/2008	C	R 503	Jun 15/2009	
23-24-02			203	Oct 15/2008	C	504	BLANK	
401	Feb 15/2009		204	Oct 15/2008	C	23-28-11		
402	Oct 10/2006		205	Oct 15/2008	C	401	Feb 15/2009	
403	Feb 10/2005		206	BLANK	C	402	Feb 15/2009	
404	Feb 15/2009		23-27-32			403	Feb 15/2009	
405	Feb 15/2009		401	Oct 15/2008	C	404	Feb 15/2009	
406	Feb 10/2007		402	Oct 15/2008	C	405	Feb 15/2009	
23-24-03			403	Jun 10/2007	C	406	BLANK	
401	Feb 15/2009		404	Oct 15/2008	C	23-31-00		
402	Feb 15/2008		405	Oct 15/2008	C	501	Feb 15/2009	
403	Feb 15/2008		406	BLANK	C	502	Feb 15/2009	
404	Feb 15/2009		23-27-33			R 503	Jun 15/2009	
405	Oct 15/2008		201	Feb 15/2009	C	O 504	Jun 15/2009	
406	BLANK		202	Feb 15/2009	C	O 505	Jun 15/2009	
23-27-00 Config 9			203	Feb 15/2009	C	O 506	Jun 15/2009	
501	Feb 15/2009	C	204	Feb 15/2009	C	507	Feb 15/2009	
502	Feb 15/2009	C				508	Feb 15/2009	

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23-31-00 (cont)			23-31-07			23-32-02 Config 1 (cont)		
509	Feb 15/2009		401	Feb 15/2009		406	Feb 15/2009	
510	Feb 15/2009		402	Oct 10/2005		407	Feb 15/2009	
511	Feb 15/2009		403	Feb 15/2009		408	Feb 15/2009	
512	BLANK		404	Jun 10/2007		23-32-03		
23-31-01			405	Feb 15/2009		401	Feb 15/2009	
401	Feb 15/2009		406	Feb 15/2009		402	Feb 15/2009	
402	Oct 10/2003		23-32-00			403	Oct 15/2008	
403	Feb 15/2009		501	Feb 15/2009		404	Oct 15/2008	
404	Jun 15/2008		502	Feb 15/2009		405	Feb 15/2009	
23-31-02			503	Feb 15/2009		406	Oct 15/2008	
401	Oct 10/2003		504	Feb 15/2009		407	Oct 15/2008	
402	Oct 10/2003		505	Oct 15/2008	C	408	Feb 15/2009	
403	Oct 10/2003		506	Feb 15/2009	C	409	Feb 15/2009	
404	Oct 10/2003		23-32-01			410	BLANK	
405	Oct 10/2003		401	Feb 15/2009		23-32-06		
406	BLANK		402	Oct 15/2008		201	Feb 15/2009	
23-31-03			403	Oct 10/2007		202	Feb 15/2009	
401	Jun 10/2005		404	Feb 15/2009		203	Feb 15/2009	
402	Oct 10/2003		405	Oct 15/2008		204	Feb 15/2009	
403	Oct 10/2003		406	Feb 15/2009		205	Feb 15/2009	
R 404	Jun 15/2009		407	Feb 15/2009		206	Feb 15/2009	
O 405	Jun 15/2009		408	Feb 15/2009		207	Feb 15/2009	
406	BLANK		23-32-02			208	Feb 15/2009	
23-31-05			201	Oct 15/2008		23-32-06		
401	Jun 10/2005		R 202	Jun 15/2009		401	Feb 15/2009	
402	Oct 10/2003		R 203	Jun 15/2009		402	Feb 15/2009	
403	Oct 10/2003		204	Feb 15/2009		403	Feb 15/2009	
404	Jun 10/2005		205	Feb 15/2009		404	Feb 15/2009	
405	Oct 10/2003		206	Feb 15/2009		405	Feb 15/2009	
406	BLANK		207	Feb 15/2009		406	Feb 15/2009	
23-31-07			208	Oct 15/2008		23-32-13		
201	Feb 15/2009		209	Oct 15/2008		401	Feb 15/2009	
202	Jun 10/2007		210	BLANK		402	Oct 15/2008	
203	Feb 15/2009		23-32-02 Config 1			403	Oct 15/2008	
204	Feb 15/2009		401	Feb 15/2009		404	Feb 15/2009	
205	Feb 15/2009		402	Oct 15/2008		405	Feb 15/2009	
206	Feb 15/2009		403	Jun 10/2007		406	Feb 15/2009	
207	Feb 15/2009		404	Feb 15/2009		407	Feb 15/2009	
208	Feb 15/2009		405	Oct 15/2008		408	BLANK	

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501	Feb 15/2009		502	Feb 15/2009		506	Feb 15/2009	
502	Feb 15/2009		503	Oct 10/2006		507	Feb 15/2009	
23-34-01			504	BLANK		508	BLANK	
201	Oct 10/2007		23-42-01			23-51-01		
202	Feb 10/2006		401	Oct 10/2003		401	Oct 10/2003	
203	Feb 15/2009		402	Oct 10/2003		402	Jun 10/2005	
204	Jun 10/2007		403	Oct 10/2003		403	Oct 10/2003	
205	Feb 15/2009		404	Oct 10/2003		404	Feb 15/2009	
206	Jun 10/2007		405	Jun 15/2008		R 405	Jun 15/2009	
207	Feb 15/2009		406	Jun 10/2004		406	BLANK	
208	Feb 15/2008		407	Jun 10/2004		23-51-02		
23-34-02			408	BLANK		401	Feb 15/2009	
401	Feb 15/2009		23-42-02			402	Feb 15/2008	
402	Feb 15/2008		401	Oct 15/2008		403	Feb 15/2008	
403	Feb 15/2009		402	Oct 15/2008		404	Feb 15/2009	
404	Jun 10/2007		403	Oct 15/2008		405	Feb 15/2009	
405	Feb 15/2009		404	Oct 15/2008		406	BLANK	
406	Feb 15/2009		405	Oct 15/2008		23-51-03		
23-34-04			406	Oct 15/2008		401	Oct 10/2003	
401	Feb 15/2008		407	Oct 15/2008		402	Oct 10/2003	
402	Oct 10/2005		408	Oct 15/2008		403	Oct 10/2006	
403	Oct 10/2003		23-43-00			404	Feb 15/2009	
404	Jun 10/2007		501	Jun 10/2004		405	Feb 15/2009	
405	Feb 15/2008		502	Feb 15/2009		406	BLANK	
406	Feb 15/2008		503	Feb 15/2009		23-51-04		
23-34-05			504	BLANK		401	Feb 15/2009	
401	Feb 15/2009		23-43-02			402	Feb 15/2009	
402	Feb 15/2008		401	Feb 15/2009		403	Feb 15/2009	
403	Oct 10/2003		402	Oct 10/2003		404	Feb 15/2008	
404	Jun 10/2007		403	Oct 10/2003		405	Feb 15/2009	
405	Feb 15/2009		404	Oct 10/2006		406	Feb 15/2009	
406	BLANK		405	Oct 10/2006		407	Feb 15/2009	
23-34-11			406	BLANK		408	Feb 15/2009	
401	Feb 15/2008		23-51-00			23-51-05		
402	Feb 15/2008		501	Feb 15/2009		401	Feb 15/2009	
403	Feb 15/2008		502	Feb 15/2009		402	Feb 15/2009	
404	Feb 15/2008		503	Feb 15/2009		403	Feb 15/2009	
23-41-00			504	Feb 15/2009		404	Feb 15/2009	
501	Feb 15/2009		505	Feb 15/2009				

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23-61-00			23-61-00 (cont)			23-71-21 (cont)		
201	Oct 10/2006		611	Feb 15/2009		218	BLANK	
202	Oct 10/2006		612	Oct 10/2006		23-75-00 Config 1		
203	Oct 10/2003		23-71-00			501	Feb 15/2009	C
204	Oct 10/2003		501	Feb 15/2009		502	Feb 15/2009	C
205	Feb 10/2005		502	Feb 15/2009		23-75-00 Config 2		
R 206	Jun 15/2009		503	Feb 15/2009		501	Jun 10/2007	C
O 207	Jun 15/2009		504	Feb 15/2009		502	Jun 10/2007	C
O 208	Jun 15/2009		505	Feb 15/2009		503	Jun 10/2007	C
209	Oct 15/2008		506	Feb 15/2009		504	BLANK	C
210	Oct 10/2006		23-71-11			23-75-02 Config 1		
211	Oct 15/2008		401	Jun 10/2005		401	Feb 15/2009	C
212	Oct 10/2006		402	Feb 15/2009		402	Feb 15/2009	C
213	Oct 15/2008		403	Feb 10/2007		403	Feb 15/2009	C
214	Oct 10/2006		404	Feb 10/2007		404	Feb 15/2009	C
215	Feb 15/2009		405	Feb 15/2009		405	Feb 15/2009	C
216	Feb 15/2009		406	Oct 15/2008		406	Feb 15/2009	C
217	Feb 15/2009		23-71-12			23-75-02 Config 2		
218	Feb 15/2009		401	Jun 10/2005		401	Oct 15/2008	C
219	Feb 15/2009		402	Oct 10/2003		402	Jun 15/2008	C
220	Feb 15/2009		403	Feb 15/2009		403	Jun 15/2008	C
221	Feb 15/2009		404	Feb 15/2009		404	Jun 15/2008	C
222	Feb 15/2009		23-71-21			405	Jun 10/2007	C
223	Feb 15/2009		201	Feb 15/2009		406	Jun 10/2007	C
224	Feb 15/2009		202	Feb 15/2009		407	Jun 10/2007	C
225	Feb 15/2009		203	Feb 10/2007		408	Jun 10/2007	C
226	Feb 15/2009		204	Feb 10/2007		23-75-03		
227	Feb 15/2009		205	Feb 15/2009		401	Feb 15/2009	C
228	BLANK		206	Feb 15/2009		402	Feb 15/2009	C
23-61-00			207	Oct 15/2008		403	Feb 15/2009	C
601	Feb 15/2009		208	Feb 15/2009		404	BLANK	C
602	Oct 15/2008		209	Oct 15/2008		23-75-04		
603	Oct 10/2003		210	Oct 15/2008		401	Jun 10/2007	C
604	Oct 10/2003		R 211	Jun 15/2009		402	Jun 10/2007	C
605	Oct 10/2003		R 212	Jun 15/2009		403	Jun 10/2007	C
R 606	Jun 15/2009		R 213	Jun 15/2009		404	BLANK	C
607	Feb 15/2009		R 214	Jun 15/2009		23-75-05		
608	Feb 15/2009		R 215	Jun 15/2009		401	Feb 15/2008	C
609	Feb 15/2009		R 216	Jun 15/2009		402	Feb 15/2008	C
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401	Feb 15/2008	C	403	Feb 15/2009				
402	Feb 15/2008	C	404	Oct 15/2008				
23-75-07								
401	Feb 15/2009	C						
402	Feb 15/2009	C						
403	Feb 15/2009	C						
404	Feb 15/2009	C						
405	Feb 15/2009	C						
406	BLANK	C						
23-75-08								
401	Feb 15/2008	C						
402	Feb 15/2008	C						
403	Jun 10/2007	C						
404	BLANK	C						
23-75-11								
401	Feb 15/2009	C						
402	Feb 15/2009	C						
403	Feb 15/2009	C						
404	Feb 15/2009	C						
405	Feb 15/2009	C						
406	BLANK	C						
23-75-12								
401	Feb 15/2009	C						
402	Feb 15/2009	C						
403	Feb 15/2009	C						
404	Feb 15/2009	C						
405	Feb 15/2009	C						
406	BLANK							
23-82-00								
R 501	Jun 15/2009							
502	BLANK							
23-82-01								
401	Oct 15/2008							
402	Oct 15/2008							
403	Oct 15/2008							
404	Oct 15/2008							
23-82-02								
401	Oct 15/2008							
402	Oct 15/2008							

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<u>COMMUNICATION - DDG MAINTENANCE PROCEDURES</u>	23-00-00		901	HAP ALL
M MEL 23-16-1 (DDPG) Preparation - Control Wheel Push-To-Talk (PTT) Switches Inoperative TASK 23-00-00-040-801			901	HAP ALL
M MEL 23-16-1 (DDPG) Restoration - Control Wheel Push-To-Talk (PTT) Switches Inoperative TASK 23-00-00-440-801			902	HAP ALL
M MEL 23-16-3 (DDPG) Preparation - Glareshield Panel Push-To-Talk (PTT) Switches Inoperative. TASK 23-00-00-040-803			903	HAP ALL
M MEL 23-16-3 (DDPG) Restoration - Glareshield Panel Push-To-Talk (PTT) Switches Inoperative. TASK 23-00-00-440-802			904	HAP ALL
<u>HIGH FREQUENCY (HF) COMMUNICATION SYSTEM - ADJUSTMENT/TEST</u>	23-11-00		501	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Communication System - Operational Test TASK 23-11-00-710-801			501	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Communication System - System Test TASK 23-11-00-730-801			504	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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<u>HF TRANSCEIVER - REMOVAL/ INSTALLATION</u>	23-11-21		401	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Transceiver - Removal TASK 23-11-21-000-801			401	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Transceiver - Installation TASK 23-11-21-400-801			406	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
<u>HF COMMUNICATION ANTENNA - REMOVAL/INSTALLATION</u>	23-11-51		401	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Communication Antenna Removal TASK 23-11-51-000-801			401	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Communication Antenna Installation TASK 23-11-51-400-801			402	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
<u>HF ANTENNA - INSPECTION/CHECK</u>	23-11-51		601	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
HF Antenna - Electrical Bond Check TASK 23-11-51-760-801			601	HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299
<u>HF ANTENNA COUPLER - REMOVAL/ INSTALLATION</u>	23-11-61		401	HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299
HF Antenna Coupler - Removal TASK 23-11-61-000-801			401	HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HF Antenna Coupler - Installation TASK 23-11-61-400-801			406	HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299
<u>HF ANTENNA COUPLER - INSPECTION/ CHECK</u>	23-11-61		601	HAP 048
HF Antenna Coupler Pressurization Test TASK 23-11-61-200-801			601	HAP 048
<u>VERY HIGH FREQUENCY (VHF) COMMUNICATION SYSTEM - ADJUSTMENT/TEST</u>	23-12-00		501	HAP ALL
VHF Communication System - Operational Test TASK 23-12-00-710-801			501	HAP ALL
VHF Communication System - System Test TASK 23-12-00-730-801			502	HAP ALL
<u>VHF COMMUNICATION ANTENNA - REMOVAL/INSTALLATION</u>	23-12-11		401	HAP ALL
VHF Communication Antenna - Removal TASK 23-12-11-000-801			401	HAP ALL
VHF Communication Antenna - Installation TASK 23-12-11-400-801			406	HAP ALL
<u>VHF COMMUNICATION TRANSCEIVER - REMOVAL/INSTALLATION</u>	23-12-21		401	HAP ALL
VHF Communication Transceiver - Removal TASK 23-12-21-020-801			401	HAP ALL
VHF Communication Transceiver - Installation TASK 23-12-21-420-801			405	HAP ALL

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VHF Communication Control Panel - Removal TASK 23-12-31-000-801			401	HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999
VHF Communication Control Panel - Installation TASK 23-12-31-400-801			404	HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999
<u>RADIO TUNING PANEL - REMOVAL/ INSTALLATION</u>	23-12-41		401	HAP 031-054, 101-999
Radio Tuning Panel (RTP) - Removal TASK 23-12-41-000-801			401	HAP 031-054, 101-999
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<u>FLIGHTVU VIDEO SWITCH UNIT - REMOVAL/ INSTALLATION</u>	23-75-04		401	HAP 001-013, 015-026, 028-030
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COMMUNICATION - DDG MAINTENANCE PROCEDURES

1. General

- A. This procedure has maintenance tasks for the Master Minimum Equipment List (MMEL) maintenance requirements as shown in the Dispatch Deviations Procedures Guide (DDPG). These tasks are used to prepare the airplane for flight with certain systems/components inoperative.
B. This procedure also has the tasks that put the airplane back to its usual condition.
C. These are the tasks for the components in the communication system:
(1) MMEL 23-16-1 (DDPG) Preparation - Control Wheel Push-To-Talk (PTT) Switches Inoperative.
(2) MMEL 23-16-1 (DDPG) Restoration - Control Wheel PTT Switches Inoperative.
(3) MMEL 23-16-3 (DDPG) Preparation - Glareshield Panel Push-To-Talk (PTT) Switches Inoperative.
(4) MMEL 23-16-3 (DDPG) Restoration - Glareshield Panel Push-To-Talk (PTT) Switches Inoperative.

TASK 23-00-00-040-801

2. MMEL 23-16-1 (DDPG) Preparation - Control Wheel Push-To-Talk (PTT) Switches Inoperative

A. General

- (1) This task gives the maintenance steps which prepare the airplane for flight with the PTT switches inoperative.

B. References

Table with 2 columns: Reference, Title. Row 1: 23-51-04-000-801, Control Wheel PTT Switch Removal (P/B 401)

C. Location Zones

Table with 2 columns: Zone, Area. Row 1: 211, Flight Compartment - Left. Row 2: 212, Flight Compartment - Right

D. PTT Switches Deactivation

SUBTASK 23-00-00-860-001

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

F/O Electrical System Panel, P6-2

Table with 4 columns: Row, Col, Number, Name. Lists circuit breaker details for INTERPHONE POWER and AUDIO F/O.

SUBTASK 23-00-00-010-001

- (2) Remove the PTT switch on the control wheel to get access to the wire (TASK 23-51-04-000-801).

SUBTASK 23-00-00-020-001

- (3) Disconnect, cap and stow the GROUND (BLK/BRN) wire from the PTT switch.

SUBTASK 23-00-00-420-001

- (4) Install the PTT switch.

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SUBTASK 23-00-00-860-002

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

SUBTASK 23-00-00-930-001

- (6) Put an INOP placard on the PTT switch.

END OF TASK

TASK 23-00-00-440-801

3. MMEL 23-16-1 (DDPG) Restoration - Control Wheel Push-To-Talk (PTT) Switches Inoperative

A. General

- (1) This task puts the airplane back to its usual condition after operation with the PTT switches inoperative.

B. References

<u>Reference</u>	<u>Title</u>
23-51-04-000-801	Control Wheel PTT Switch Removal (P/B 401)
23-51-04-400-801	Control Wheel PTT Switch Installation (P/B 401)

C. Procedure

SUBTASK 23-00-00-860-003

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

SUBTASK 23-00-00-020-002

- (2) Remove the INOP placard from the switch.

SUBTASK 23-00-00-020-003

- (3) Remove the PTT switch on the control wheel (TASK 23-51-04-000-801).

SUBTASK 23-00-00-020-004

- (4) Remove the cap from the GROUND (BLK/BRN) wire for the PTT switch.

SUBTASK 23-00-00-420-002

- (5) Install the new PTT switch on the control wheel. To install it, do this task: Control Wheel PTT Switch Installation, TASK 23-51-04-400-801.

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SUBTASK 23-00-00-860-004

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

————— **END OF TASK** —————

TASK 23-00-00-040-803

4. M MEL 23-16-3 (DDPG) Preparation - Glareshield Panel Push-To-Talk (PTT) Switches Inoperative.

A. General

- (1) This task gives the maintenance steps which prepare the airplane for flight with the PTT switches inoperative.

B. PTT Switches Deactivation

SUBTASK 23-00-00-860-005

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

SUBTASK 23-00-00-010-002

- (2) Remove the PTT switch on the glareshield to get access to the wire.

SUBTASK 23-00-00-020-005

- (3) Disconnect, cap and stow the GROUND wire from the PTT switch.

SUBTASK 23-00-00-420-003

- (4) Install the PTT switch.

SUBTASK 23-00-00-860-006

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

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SUBTASK 23-00-00-930-002

- (6) Put an INOP placard on the PTT switch.

END OF TASK

TASK 23-00-00-440-802

5. MMEL 23-16-3 (DDPG) Restoration - Glareshield Panel Push-To-Talk (PTT) Switches Inoperative.

A. General

- (1) This task puts the airplane back to its usual condition after operation with the PTT switches inoperative.

B. Procedure

SUBTASK 23-00-00-860-007

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

F/O Electrical System Panel, P6-2

Table with 4 columns: Row, Col, Number, Name. Lists circuit breakers C00560 through C00240 and D00086 through D00083.

SUBTASK 23-00-00-020-006

- (2) Remove the INOP placard from the switch.

SUBTASK 23-00-00-020-007

- (3) Remove the PTT switch on the glareshield panel.

SUBTASK 23-00-00-020-008

- (4) Remove the cap from the GROUND wire for the PTT switch.

SUBTASK 23-00-00-420-004

- (5) Install the new PTT switch on the control wheel.

SUBTASK 23-00-00-860-008

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

F/O Electrical System Panel, P6-2

Table with 4 columns: Row, Col, Number, Name. Lists circuit breakers C00560 through C00240 and D00086 through D00083.

END OF TASK

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HIGH FREQUENCY (HF) COMMUNICATION SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) An Operational Test of the HF transceiver.
 - (2) A System Test of the HF communication system.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- C. There is one HF communication system installed on the airplane.

HAP 048

- D. There are two HF communication systems installed on the airplane. These are: HF-1 and HF-2.

HAP 042-046, 051-053

- E. The HF transceiver is located in the aft cargo compartment on the electronic equipment rack E6.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- F. The HF transceiver is located in the main equipment center on the electronic equipment rack E8.

HAP 048

- G. The No. 1 and No. 2 HF transceivers are located in the main equipment center on the electronic equipment rack E8.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

- H. The No. 1, No. 2, and No. 3 radio tuning panels (RTPs) are located on the aft electronic panel, P8, in the flight compartment.

TASK 23-11-00-710-801

2. HF Communication System - Operational Test

- A. General

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

- (1) The operational test is a BITE test of the HF transceiver.
 - (a) The BITE test does a check of the internal functions of the HF transceiver. The BITE test also does a check of the ARINC 429/719 frequency tuning input data to the HF transceiver. The HF communication system does not transmit during the BITE test. The BITE test does not include a check of the HF antenna couplers, coaxial cables, or the HF antenna.

HAP 048

- (2) The same sequence of steps is used for the No. 1 or No. 2 HF communication system.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

- B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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C. Location Zones

Zone	Area
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299	
117	Electrical and Electronics Compartment - Left
HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299	
118	Electrical and Electronics Compartment - Right
HAP 102-999	
142	Aft Cargo Compartment - Right
HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299	
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
822	Aft Cargo Door

E. Procedure

SUBTASK 23-11-00-800-001

WARNING: DO NOT OPERATE THE HF SYSTEM WHILE THE AIRPLANE IS REFUELED OR DEFUELED. THIS CAN CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

WARNING: MAKE SURE THAT PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

(1) Do not operate the HF system while a fuel operation is done on the airplane.

SUBTASK 23-11-00-860-001

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-860-017

(3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

HAP 048

SUBTASK 23-11-00-860-018

(4) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2
D	2	C00857	COMMUNICATIONS HF 2

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-860-029

- (5) Push the HF 1 switch light, on the No. 1 radio tuning panel (RTP-1), on the aft electronic panel, P8.
 - (a) Make sure the switch light comes on.
 - (b) If the AM lamp is on, push the AM switch once to select the USB mode.

HAP 048

SUBTASK 23-11-00-860-030

- (6) Push the applicable HF switch light (HF 1 or HF 2), on the No. 1 radio tuning panel (RTP-1), on the aft electronic panel, P8.
 - (a) Make sure the switch light comes on.
 - (b) If the AM lamp is on, push the AM switch once to select the USB mode.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-010-003

HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299

(7) To gain access to the HF transceivers, do this step:
Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

HAP 102-999

(8) To gain access to the HF transceivers, do this step:
Open this access panel:

Number	Name/Location
822	Aft Cargo Door

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HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 102-999 (Continued)

I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-860-007

- I (9) Make sure the internal blower fan on the HF transceiver operates.

I HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

F. Do these steps:

SUBTASK 23-11-00-740-001

- (1) Push and hold the TEST switch on the HF transceiver front panel to do the BITE test of the HF communication system.

- (a) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights come on and stay on.

SUBTASK 23-11-00-740-002

- (2) Release the TEST switch.

- (a) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights go off.

I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

G. Put the Airplane Back to Its Initial Condition

SUBTASK 23-11-00-010-004

I HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299

- (1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

HAP 102-999

- (2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
822	Aft Cargo Door

I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-860-009

- (3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

TASK 23-11-00-730-801

3. HF Communication System - System Test

A. General

- (1) This task includes these tests:
 - (a) An Operational Test
 - (b) A HF Communication Test.

EFFECTIVITY

<p>HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299</p>

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- (2) Make sure the flight interphone system operates. The communication test uses these flight interphone system components: audio control panels (ACPs), headsets, microphones, and push-to-talk (PTT) switches.
- (3) Make sure the airplane is not in or near any large metal structures. HF communication while the airplane is on the ground can be degraded by airplane position or blocked by RF signal attenuation due to ground equipment and structures. If the quality of the transmitted and received voice signals is not satisfactory, move the airplane to a better position.
- (4) Make sure you use approved test frequencies when you speak with the radio tower operator.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
I HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299	
117	Electrical and Electronics Compartment - Left
I HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299	
118	Electrical and Electronics Compartment - Right
HAP 102-999	
142	Aft Cargo Compartment - Right
I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299	
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the Test

SUBTASK 23-11-00-800-002

WARNING: DO NOT OPERATE THE HF SYSTEM WHILE THE AIRPLANE IS REFUELED OR DEFUELED. AN EXPLOSION CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO THE AIRPLANE.

WARNING: MAKE SURE THAT PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Do not operate the HF system while a fuel operation is done on the airplane.

SUBTASK 23-11-00-860-010

- (2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-860-019

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

Row	Col	Number	Name
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

HAP 048

SUBTASK 23-11-00-860-020

(4) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2
D	2	C00857	COMMUNICATIONS HF 2

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

E. Operational Test

SUBTASK 23-11-00-710-003

(1) Do this task: HF Communication System - Operational Test, TASK 23-11-00-710-801.

F. HF Communication Test

SUBTASK 23-11-00-730-001

(1) Do a test of the HF-1 communication system:

- (a) Connect a headset/boom microphone to the captain's jack panel.
- (b) Do these steps to prepare the captain's audio control panel (ACP) for HF-1 system operation:
 - 1) Push and release the HF-1 switch.
 - a) Make sure the switch light comes on.
 - 2) Push and release the HF-1 volume control.
 - a) Make sure the volume control indicator light comes on.
 - 3) Set the volume control to the middle position.
 - 4) Set the MASK/BOOM switch (if installed) to the BOOM position.
- (c) Do these steps at the No. 1 radio tuning panel (RTP-1):
 - 1) Push the HF 1 switch light.
 - a) Make sure the switch light comes on.
 - 2) Push the AM switch light for USB mode of operation.
 - a) Make sure the switch light is off for USB.

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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- 3) Turn the SENS control clockwise for maximum gain.
- 4) Set the STANDBY frequency window to an approved test frequency.
- 5) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (d) Push and release the captain's push-to-talk (PTT) switch.
 - 1) Make sure you hear a 1 kHz tune-in-progress tone in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is approximately 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep.
- (e) Do these steps to do a voice communication test with a radio tower operator:
 - 1) Push and hold the PTT switch while you speak.
 - a) Make sure you hear the sidetone in the headset while you speak.

CAUTION: OPEN THE HF SYSTEM CIRCUIT BREAKER TO REMOVE POWER IF THE HF TRANSCEIVER BLOWER FAN DOES NOT OPERATE. EXCESSIVE HEAT CAN CAUSE DAMAGE TO EQUIPMENT.
 - b) Make sure the HF transceiver blower fan operates when you transmit.

I HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

- c) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights on the front panel of the HF transceiver are not on.

I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

- 2) Release the PTT switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is satisfactory.
 - b) Make sure the sound of the received voice decreases and increases when you turn the SENS control counterclockwise and clockwise on the RTP.
 - c) Make sure the sound of the received voice changes when you turn the HF-1 volume control on the captain's ACP with no change in voice quality.
- (f) If more than one mode of operation (AM and USB) is available at your location, do this step:
 - 1) Push the AM switch light to the other mode of operation and make a voice transmission.

HAP 048

SUBTASK 23-11-00-730-002

- (2) Do a test of the HF-2 communication system:
 - (a) Connect a headset/boom microphone to the first officer's jack panel.
 - (b) Do these steps to prepare the first officer's ACP for HF-2 system operation:
 - 1) Push and release the HF-2 switch.
 - a) Make sure the switch light comes on.
 - 2) Push and release the HF-2 volume control.
 - a) Make sure the volume control indicator light comes on.

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 048 (Continued)

- 3) Set the volume control to the middle position.
- 4) Set the MASK/BOOM switch (if installed) to the BOOM position.
- (c) Do these steps at RTP-2:
 - 1) Push the HF 2 switch light.
 - a) Make sure the switch light comes on.
 - 2) Push the AM switch light for AM or USB mode of operation.
 - a) Make sure the switch light is on for AM, or off for USB.
 - 3) Turn the SENS control clockwise for maximum gain.
 - 4) Set the STANDBY frequency window to an approved test frequency.
 - 5) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (d) Push and release the first officer's PTT switch.
 - 1) Make sure you hear a 1 kHz tune-in-progress tone in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is approximately 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep.
- (e) Do these steps to do a voice communication test with a radio tower operator:
 - 1) Push and hold the PTT switch while you speak.
 - a) Make sure you hear the sidetone in the headset while you speak.

CAUTION: OPEN THE HF SYSTEM CIRCUIT BREAKER TO REMOVE POWER IF THE HF TRANSCEIVER BLOWER FAN DOES NOT OPERATE. EXCESSIVE HEAT CAN CAUSE DAMAGE TO EQUIPMENT.
 - b) Make sure the HF transceiver blower fan operates when you transmit.
 - c) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights on the front panel of the HF transceiver are not on.
 - 2) Release the PTT switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is satisfactory.
 - b) Make sure the sound of the received voice decreases and increases when you turn the SENS control counterclockwise and clockwise on the RTP.
 - c) Make sure the sound of the received voice changes when you turn the HF-2 volume control on the first officer's ACP with no change in voice quality.
- (f) If more than one mode of operation (AM and USB) is available at your location, do this step:
 - 1) Push the AM switch light to the other mode of operation and make a voice transmission.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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G. Put the Airplane Back to Its Initial Condition

SUBTASK 23-11-00-860-015

(1) Do these steps at the P8 panel:

- (a) Push and release the HF-1 switch on the captain's ACP.
 - 1) Make sure the switch light goes off.

HAP 048

- (b) Push and release the HF-2 switch on the first officer's ACP.
 - 1) Make sure the switch light goes off.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

- (c) Push and release the HF-1 volume control on the captain's ACP.
 - 1) Make sure the volume control indicator light goes off.

HAP 048

- (d) Push and release the HF-2 volume control on the first officer's ACP.
 - 1) Make sure the volume control indicator light goes off.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-00-860-016

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HF TRANSCEIVER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the HF transceiver.
- (2) An installation of the HF transceiver.

HAP 042-046, 051-053

B. The HF transceiver is located in the aft cargo compartment on the electronic equipment rack E6.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

C. The HF transceiver is located in the main equipment center on the electronic equipment rack E8.

HAP 048

D. The No. 1 and No. 2 HF transceivers are located in the main equipment center on the electronic equipment rack E8.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

TASK 23-11-21-000-801

2. HF Transceiver - Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. Location Zones

Zone	Area
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299	
117	Electrical and Electronics Compartment - Left
HAP 042-046, 051-053, 102-999	
142	Aft Cargo Compartment - Right
HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299	
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
822	Aft Cargo Door

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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D. Removal Procedure

SUBTASK 23-11-21-860-002

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

CAPT Electrical System Panel, P18-2

Row Col Number Name

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

E 11 C00839 COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row Col Number Name

HAP 048

D 2 C00857 COMMUNICATIONS HF 2

HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-010-001

(2) Open this access panel:

Number Name/Location

117A Electronic Equipment Access Door

HAP 042-046, 051-053, 102-999

SUBTASK 23-11-21-010-002

(3) Open this access panel:

Number Name/Location

822 Aft Cargo Door

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE HF TRANSCEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE HF TRANSCEIVER.

(4) Before you touch the HF TRANSCEIVER [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-11-21-020-002

(5) To remove the HF TRANSCEIVER [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

END OF TASK

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

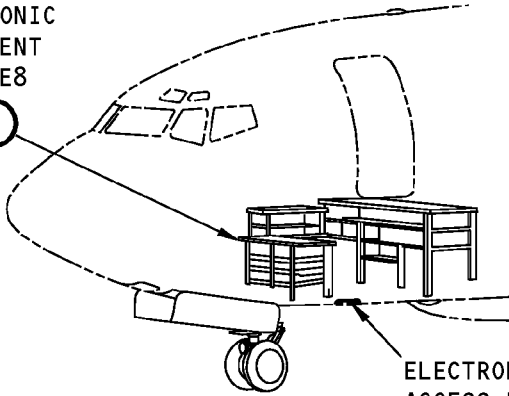
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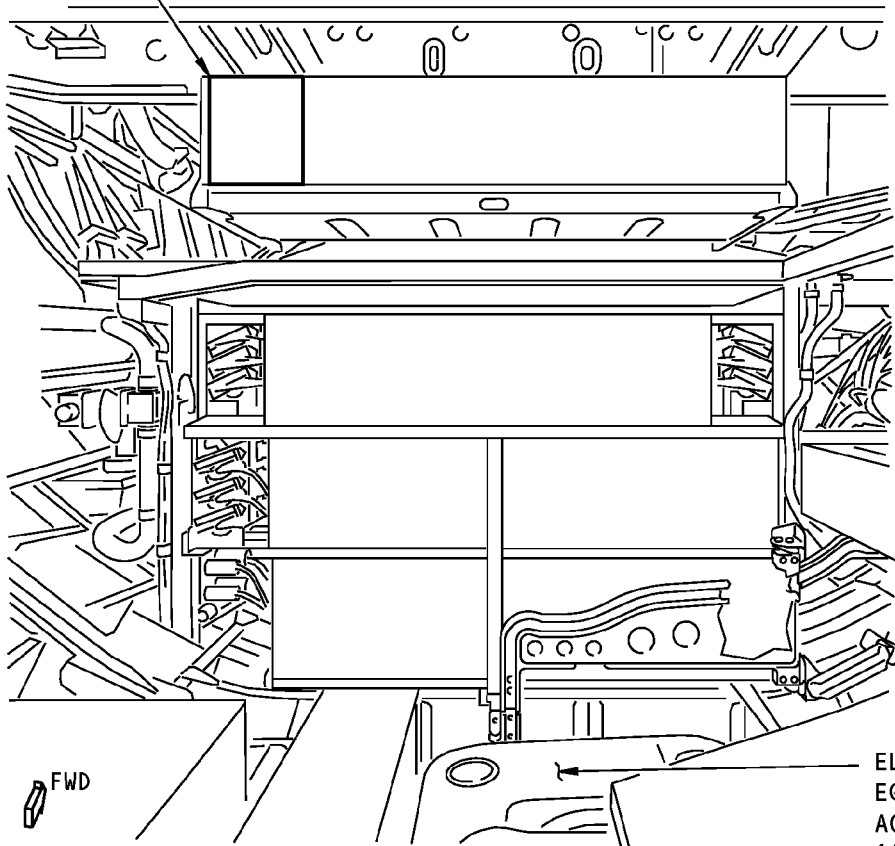
ELECTRONIC
EQUIPMENT
RACK, E8

SEE (A)



[1] NO. 1 HF
TRANSCEIVER
(E8-1)

ELECTRONIC EQUIPMENT
ACCESS DOOR, 117A



ELECTRONIC EQUIPMENT RACK, E8

ELECTRONIC
EQUIPMENT
ACCESS DOOR,
117A

(A)

HF Transceiver Installation
Figure 401 (Sheet 1 of 3)/23-11-21-990-801

EFFECTIVITY

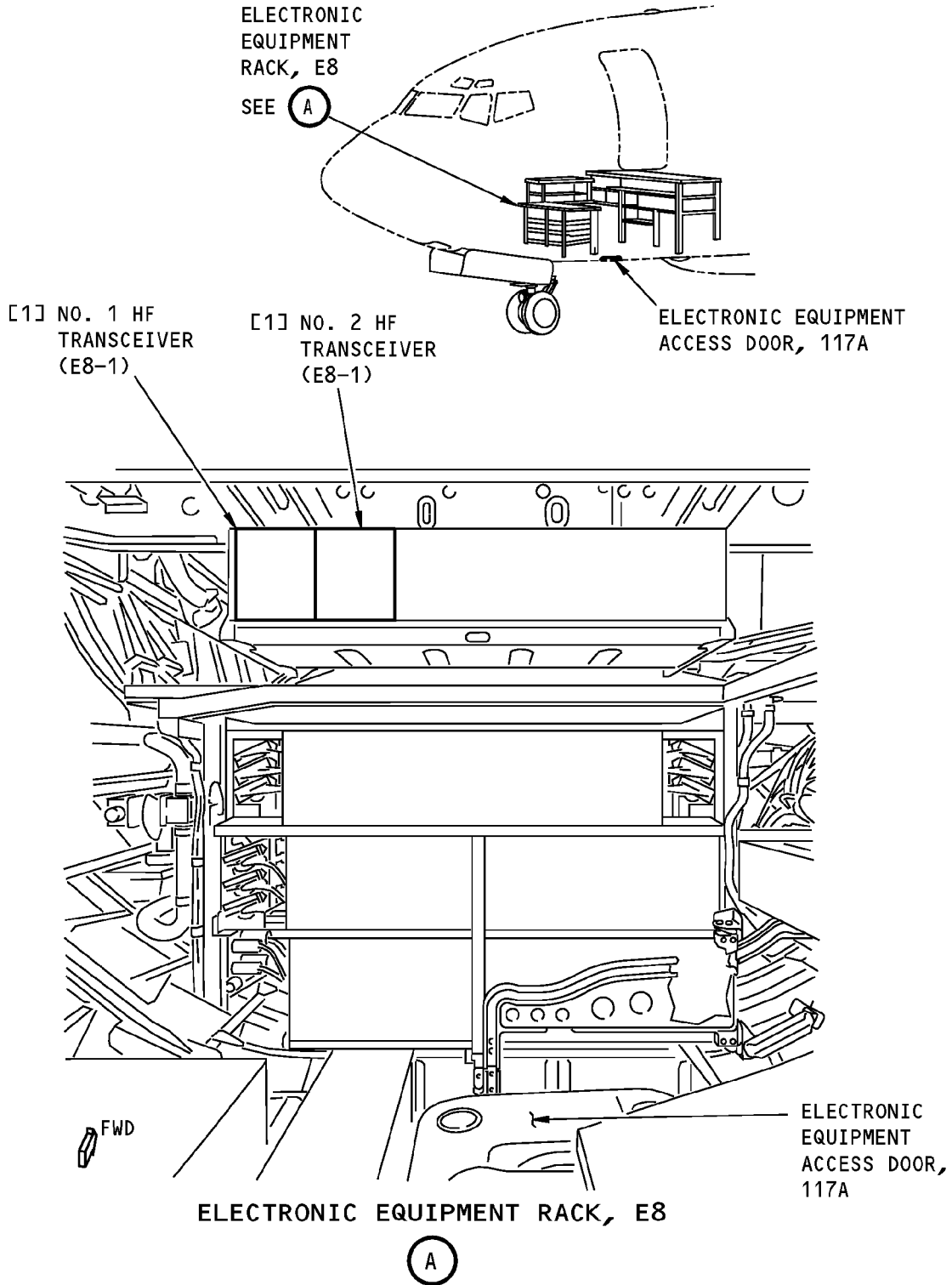
HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

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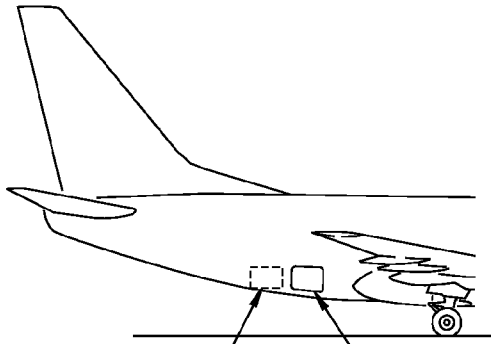
HF Transceiver Installation
Figure 401 (Sheet 2 of 3)/23-11-21-990-801

EFFECTIVITY
HAP 048

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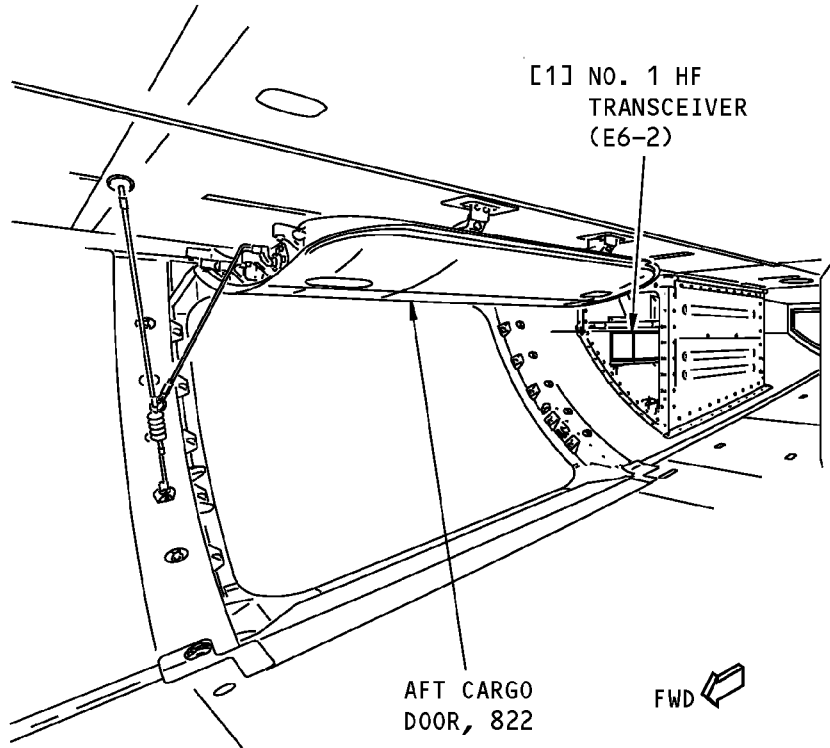
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ELECTRONIC EQUIPMENT RACK, E6 AFT CARGO DOOR, 822

SEE (A)



ELECTRONIC EQUIPMENT RACK, E6

(A)

**HF Transceiver Installation
Figure 401 (Sheet 3 of 3)/23-11-21-990-801**

EFFECTIVITY
HAP 042-046, 051-053

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TASK 23-11-21-400-801

3. HF Transceiver - Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	HF TRANSCEIVER	23-11-21-12-005	HAP 038, 041-047, 049-054

C. Location Zones

Zone	Area
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299	
117	Electrical and Electronics Compartment - Left
HAP 042-046, 051-053, 102-999	
142	Aft Cargo Compartment - Right
HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299	
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
822	Aft Cargo Door

E. Installation Procedure

SUBTASK 23-11-21-860-006

(1) Make sure that these circuit breakers are open:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299			
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
HAP 048			
D	2	C00857	COMMUNICATIONS HF 2
HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299			

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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SUBTASK 23-11-21-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE HF TRANSCEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE HF TRANSCEIVER.

- (2) Before you touch the HF TRANSCEIVER [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-11-21-420-002

- (3) To install the HF TRANSCEIVER [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-11-21-860-010

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

E	11	C00839	COMMUNICATIONS HF 1
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F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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HAP 048

D	2	C00857	COMMUNICATIONS HF 2
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HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

F. Installation Test

SUBTASK 23-11-21-800-001

WARNING: DO NOT OPERATE THE HF SYSTEM WHILE THE AIRPLANE IS REFUELED OR DEFUELED. THIS CAN CAUSE INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

- (1) Do not operate the HF system while a fuel operation is done on the airplane.

SUBTASK 23-11-21-860-013

- (2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-11-21-860-018

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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D	11	C00165	COMMUNICATIONS VHF 1
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D	12	C00471	COMMUNICATIONS VHF 3
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F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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C	3	C00166	COMMUNICATIONS VHF 2
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EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-810-002

- (4) Push the HF 1 switch light, on the No. 1 radio tuning panel (RTP-1), on the aft electronic panel, P8.
 - (a) Make sure the switch light comes on.

HAP 048

SUBTASK 23-11-21-810-003

- (5) Push the applicable HF switch light (HF 1 or HF 2), on the No. 1 radio tuning panel (RTP-1), on the aft electronic panel, P8.
 - (a) Make sure the switch light comes on.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-860-015

- (6) Make sure the internal blower fan on the HF transceiver operates.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-740-011

- (7) At the front panel of the HF transceiver, do these steps to do the BITE test of the system:
 - (a) Push and hold the TEST switch to do the BITE test of the HF communication system.
 - (b) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights come on and stay on.
 - (c) Release the TEST switch.
 - (d) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights go off.

HAP 048

SUBTASK 23-11-21-740-007

- (8) At the front panel of the transceiver for the applicable HF communication system (HF-1 or HF-2), do these steps to do the BITE test of that system:
 - (a) Push and hold the TEST switch to do the BITE test of the HF communication system.
 - (b) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights come on and stay on.
 - (c) Release the TEST switch.
 - (d) Make sure the LRU FAIL, COUPLER FAIL, and EXTERNAL INPUT FAIL lights go off.

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

G. Put the Airplane Back to Its Initial Condition

HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-410-001

- (1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041, 047-050, 054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

HAP 042-046, 051-053, 102-999

SUBTASK 23-11-21-410-002

(2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
822	Aft Cargo Door

I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-21-860-017

(3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HF COMMUNICATION ANTENNA - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) Removal of the HF communication antenna.
- (2) Installation of the HF communication antenna.

B. The HF communication antenna is part of the leading edge of the vertical stabilizer.

TASK 23-11-51-000-801

2. HF Communication Antenna Removal

A. References

Reference	Title
55-33-11-000-801	Vertical Stabilizer (Fin) Leading Edge Removal (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
322	Vertical Fin - Removable Fin Leading Edge

C. Procedure

SUBTASK 23-11-51-860-001

WARNING: REMOVE THE ELECTRICAL POWER FOR THE HF COMMUNICATION SYSTEM BEFORE YOU REMOVE THE HF COMMUNICATION ANTENNA. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURIES TO PERSONS.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name	
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299	E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name	
HAP 048	D	2	C00857	COMMUNICATIONS HF 2

SUBTASK 23-11-51-020-001

(2) Remove the part of the leading edge of the vertical stabilizer that contains the HF communication antenna:

(a) Do this task: Vertical Stabilizer (Fin) Leading Edge Removal, TASK 55-33-11-000-801.

————— **END OF TASK** —————

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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TASK 23-11-51-400-801

3. HF Communication Antenna Installation

A. References

Reference	Title
23-11-00-730-801	HF Communication System - System Test (P/B 501)
55-33-11-400-801	Vertical Stabilizer (Fin) Leading Edge Installation (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
322	Vertical Fin - Removable Fin Leading Edge

C. Procedure

SUBTASK 23-11-51-860-002

WARNING: REMOVE THE ELECTRICAL POWER FOR THE HF COMMUNICATION SYSTEM BEFORE YOU INSTALL THE HF COMMUNICATION ANTENNA. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURIES TO PERSONS.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
-----	-----	--------	------

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

E	11	C00839	COMMUNICATIONS HF 1
---	----	--------	---------------------

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
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HAP 048

D	2	C00857	COMMUNICATIONS HF 2
---	---	--------	---------------------

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-51-420-001

- (2) Install the part of the leading edge of the vertical stabilizer that contains the HF communication antenna:

- (a) Do this task: Vertical Stabilizer (Fin) Leading Edge Installation, TASK 55-33-11-400-801.

SUBTASK 23-11-51-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
-----	-----	--------	------

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

E	11	C00839	COMMUNICATIONS HF 1
---	----	--------	---------------------

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 048 (Continued)

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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HAP 048

D	2	C00857	COMMUNICATIONS HF 2
---	---	--------	---------------------

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

D. Installation Test

SUBTASK 23-11-51-730-001

(1) Do this task: HF Communication System - System Test, TASK 23-11-00-730-801.

————— END OF TASK —————

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HF ANTENNA - INSPECTION/CHECK

1. General

- A. This procedure has this task:
 - (1) An electrical bond check for the HF antenna.
- B. The HF antenna is part of the leading edge of the vertical stabilizer.
- C. You must remove the HF antenna coupler(s) before you do the electrical bond check. The HF antenna coupler(s) are installed adjacent to the HF antenna in the vertical stabilizer.

TASK 23-11-51-760-801

2. HF Antenna - Electrical Bond Check

(Figure 601)

A. References

Reference	Title
23-11-61-000-801	HF Antenna Coupler - Removal (P/B 401)
23-11-61-400-801	HF Antenna Coupler - Installation (P/B 401)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
322	Vertical Fin - Removable Fin Leading Edge

D. Procedure

SUBTASK 23-11-51-010-001

CAUTION: YOU MUST PREPARE EACH HF ANTENNA COUPLER FOR THE REMOVAL. IF YOU DO NOT PREPARE FOR THE REMOVAL, YOU CAN EASILY CAUSE DAMAGE TO INTERNAL PARTS OF THE HF ANTENNA COUPLER.

- (1) Remove the HF antenna coupler(s). To remove the HF antenna coupler(s), do this task: HF Antenna Coupler - Removal, TASK 23-11-61-000-801.

SUBTASK 23-11-51-760-001

- (2) Use an bonding meter, COM-1550 to measure the resistances that follow at each HF antenna coupler mount (SWPM 20-20-00):

- (a) From the electrical contact to the mount.
 - 1) Make sure the resistance is 10 milliohms or less.

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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- (b) From the electrical contact to the airplane structure.
 - 1) Make sure the resistance is 10 milliohms or less.

SUBTASK 23-11-51-410-001

- (3) To install the HF antenna coupler(s), do this task: HF Antenna Coupler - Installation, TASK 23-11-61-400-801.

————— **END OF TASK** —————

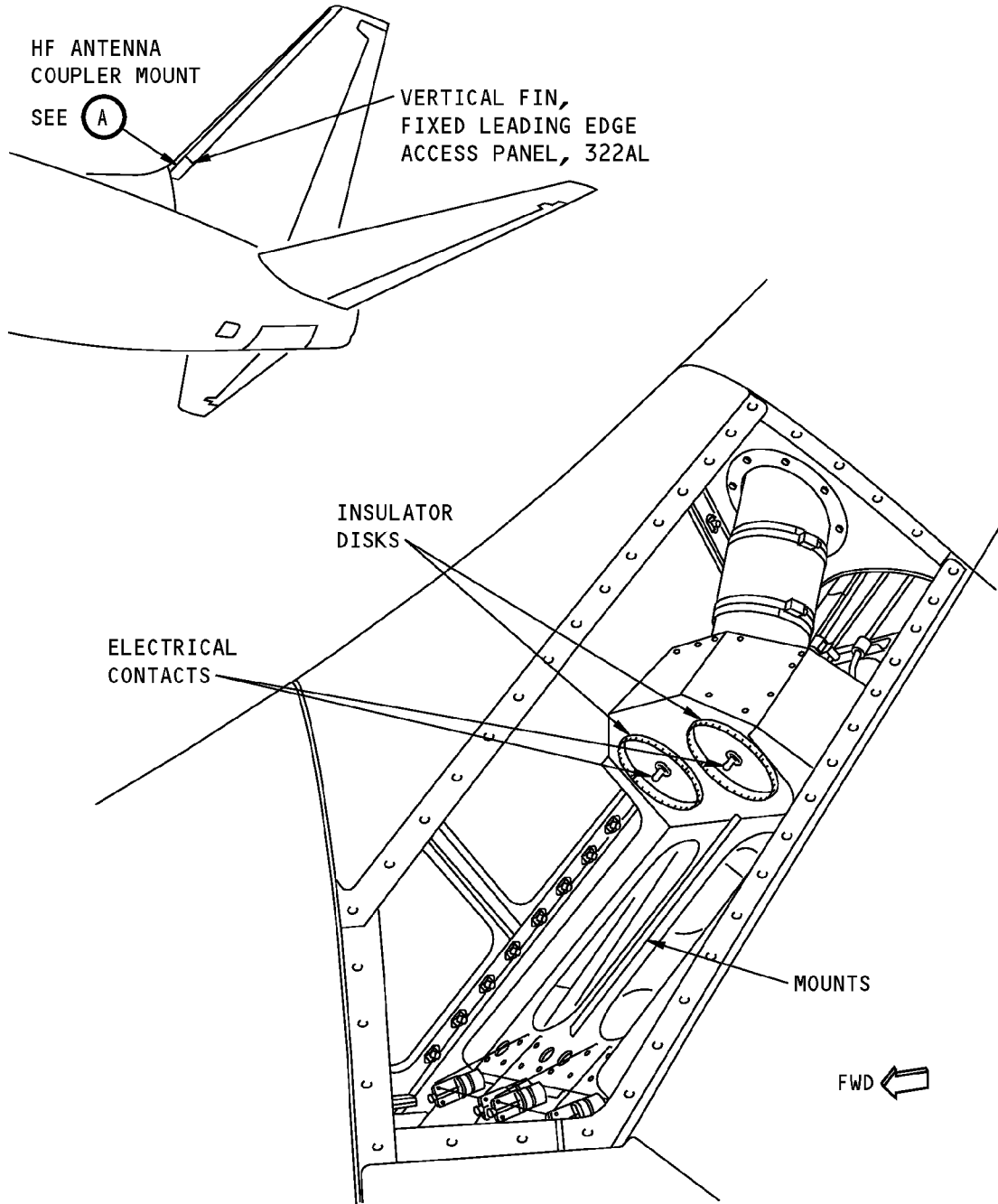
EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HF ANTENNA COUPLER MOUNT

A

**HF Antenna - Electrical Bond Check
Figure 601/23-11-51-990-801**

EFFECTIVITY

HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

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HF ANTENNA COUPLER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the HF antenna coupler.
- (2) An installation of the HF antenna coupler.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

B. The HF antenna coupler is located in the antenna coupler mount in the lower leading edge of the vertical stabilizer.

HAP 048

C. The No. 1 and No. 2 HF antenna couplers are located in the antenna coupler mount in the lower leading edge of the vertical stabilizer.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

TASK 23-11-61-000-801

2. HF Antenna Coupler - Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-10-44-000-801	Lockwires Removal (P/B 401)
24-22-00-860-811	Supply Electrical Power (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
322	Vertical Fin - Removable Fin Leading Edge

C. Access Panels

Number	Name/Location
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

D. Prepare for the Removal

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-860-027

(1) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3
E	11	C00839	COMMUNICATIONS HF 1

EFFECTIVITY

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

HAP 048

SUBTASK 23-11-61-860-019

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2
D	2	C00857	COMMUNICATIONS HF 2

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-860-005

(3) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

E. Removal Procedure

SUBTASK 23-11-61-040-002

WARNING: REMOVE THE ELECTRICAL POWER FROM EACH HF COMMUNICATION SYSTEM BEFORE YOU OPEN THE ACCESS PANEL FOR THE HF ANTENNA COUPLER. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONNEL.

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C00857	COMMUNICATIONS HF 2

HAP 048

D	2	C00857	COMMUNICATIONS HF 2
---	---	--------	---------------------

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-010-001

(2) Remove this access panel:

<u>Number</u>	<u>Name/Location</u>
322AL	Vertical Fin, Fixed Leading Edge

EFFECTIVITY

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

HAP 048

SUBTASK 23-11-61-010-002

- (3) Remove the applicable access panels:

<u>Number</u>	<u>Name/Location</u>
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

NOTE: The HF-1 antenna coupler is installed on the left side of the vertical stabilizer. The HF-2 antenna coupler is installed on the right side of the vertical stabilizer.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-020-001

- (4) To remove the lockwire [3] from the coaxial connector [4], do this task: Lockwires Removal, TASK 20-10-44-000-801.

SUBTASK 23-11-61-020-002

- (5) Disconnect the coaxial connector [4] and the electrical connector [5] from the HF ANTENNA COUPLER [2].

SUBTASK 23-11-61-020-003

CAUTION: MOVE THE HF ANTENNA COUPLER CAREFULLY. SET THE HF ANTENNA COUPLER ON ITS BOTTOM. DO NOT SET THE HF ANTENNA COUPLER ON ITS END (WITH THE HANDLE UP). INTERNAL PARTS ARE EASILY DAMAGED.

- (6) To remove the HF ANTENNA COUPLER [2], do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— END OF TASK —————

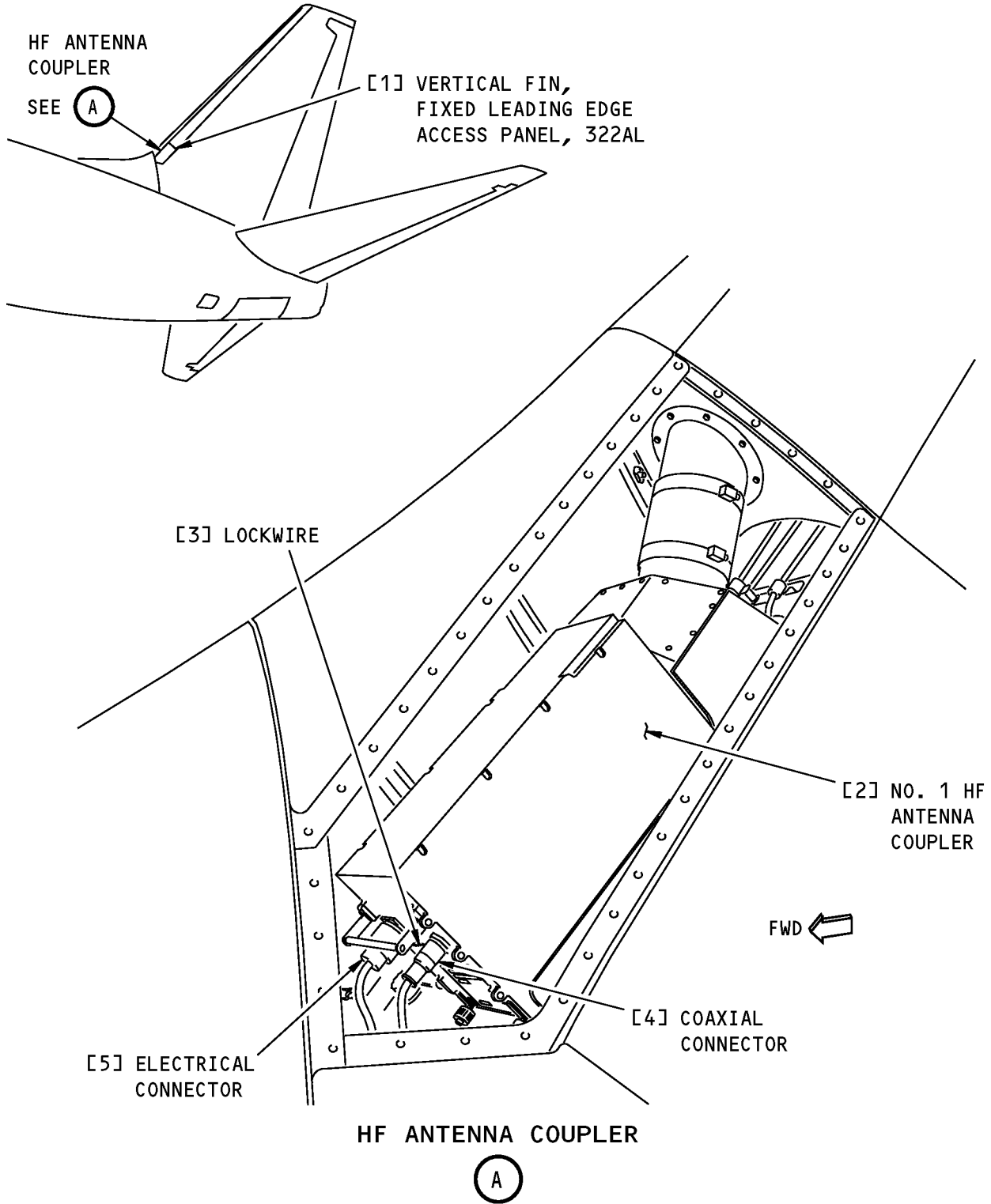
EFFECTIVITY

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HF Antenna Coupler Installation
Figure 401 (Sheet 1 of 2)/23-11-61-990-801

EFFECTIVITY

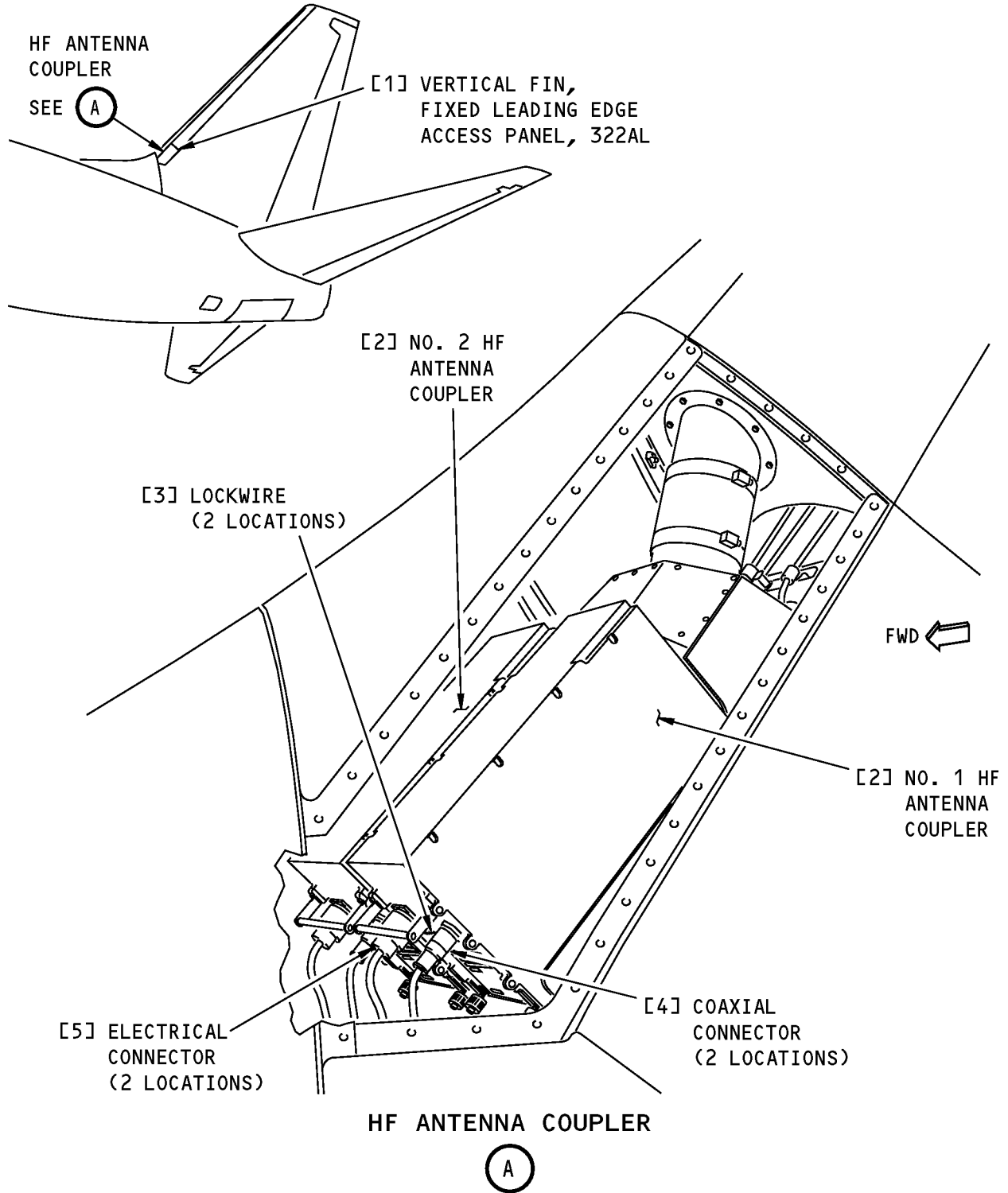
HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

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HF Antenna Coupler Installation
Figure 401 (Sheet 2 of 2)/23-11-61-990-801

EFFECTIVITY
HAP 048

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TASK 23-11-61-400-801

3. HF Antenna Coupler - Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-10-44-400-801	Lockwires Installation (P/B 401)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	HF ANTENNA COUPLER	23-11-61-01-010	HAP 038, 041-047, 049-054
		23-11-61-03-050	HAP 037-054

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
322	Vertical Fin - Removable Fin Leading Edge

D. Access Panels

Number	Name/Location
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

E. Installation Procedure

SUBTASK 23-11-61-860-010

WARNING: MAKE SURE THE ELECTRICAL POWER IS OFF FOR EACH HF COMMUNICATION SYSTEM. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONNEL.

- (1) Make sure that these circuit breakers are open:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
HAP 048			
D	2	C00857	COMMUNICATIONS HF 2

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-710-001

- (2) Make sure there is no corrosion and or electrical arcing at the back of the coupler mount, at the rear connection.

EFFECTIVITY
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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SUBTASK 23-11-61-420-001

CAUTION: MOVE THE HF ANTENNA COUPLER CAREFULLY. SET THE HF ANTENNA COUPLER ON ITS BOTTOM. DO NOT SET THE HF ANTENNA COUPLER ON ITS END (WITH THE HANDLE UP). INTERNAL PARTS ARE EASILY DAMAGED.

- (3) To install the HF ANTENNA COUPLER [2], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-11-61-420-002

- (4) Connect the coaxial connector [4] and the electrical connector [5] to the HF ANTENNA COUPLER [2].

SUBTASK 23-11-61-420-003

- (5) To install the lockwire [3] on the coaxial connector [4], do this task: Lockwires Installation, TASK 20-10-44-400-801.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-410-001

- (6) Install this access panel:

<u>Number</u>	<u>Name/Location</u>
322AL	Vertical Fin, Fixed Leading Edge

HAP 048

SUBTASK 23-11-61-410-002

- (7) Install the applicable access panels:

<u>Number</u>	<u>Name/Location</u>
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-440-002

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	11	C00839	COMMUNICATIONS HF 1

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C00857	COMMUNICATIONS HF 2

HAP 048

D	2	C00857	COMMUNICATIONS HF 2
---	---	--------	---------------------

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

F. Installation Test

SUBTASK 23-11-61-800-001

WARNING: DO NOT OPERATE THE HF SYSTEM WHILE THE AIRPLANE IS REFUELED OR DEFUELED. AN EXPLOSION CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO THE AIRPLANE.

EFFECTIVITY
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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(WARNING PRECEDES)

WARNING: MAKE SURE THAT PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF SYSTEM TRANSMITS. RF ENERGY FROM THE HF ANTENNA CAN CAUSE INJURIES TO PERSONNEL.

(1) Do not operate the HF system while a fuel operation is done on the airplane.

SUBTASK 23-11-61-860-013

(2) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-11-61-860-016

(3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-11-61-720-001

(4) Do these steps at the P8 panel to do the installation test:

(a) Connect a headset/boom microphone to the captain's jack panel.

(b) Do these steps to prepare the captain's audio control panel (ACP) for HF system operation:

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- 1) Push and release the HF-1 switch.
 - a) Make sure the switch light comes on.

HAP 048

- 2) Push and release the applicable HF-1 or HF-2 switch.
 - a) Make sure the switch light comes on.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- 3) Push and release the HF-1 volume control.
 - a) Make sure the volume control indicator light comes on.

HAP 048

- 4) Push and release the applicable HF-1 or HF-2 volume control.
 - a) Make sure the volume control indicator light comes on.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

- 5) Set the volume control to the middle position.
- 6) Set the MASK/BOOM switch (if installed) to the BOOM position.
- (c) Do these steps at the No. 1 radio tuning panel (RTP-1):

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- 1) Push the HF 1 switch light.

EFFECTIVITY
HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

- a) Make sure the switch light comes on.

HAP 048

- 2) Push the applicable HF switch light (HF 1 or HF 2).
 - a) Make sure the switch light comes on.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

- 3) Push the AM switch light for AM or USB mode of operation.
 - a) Make sure the switch light is on for AM, or off for USB.
 - 4) Turn the SENS control fully clockwise.
 - 5) Set the STANDBY frequency window to an approved test frequency.
 - 6) Push the display transfer switch.
 - a) Make sure the STANDBY frequency moves to the ACTIVE frequency window.
- (d) Push and release the captain's push-to-talk (PTT) switch.
- 1) Make sure you hear a 1 kHz tune-in-progress tone in the headset.

NOTE: A continuous or pulsed tone indicates that the coupler is tuning to a new frequency. The coupler tune tone will sound no longer than 15 seconds. The average coupler tune time is approximately 1 to 7 seconds.

NOTE: Some coupler types are able to tune quickly when previously used frequencies are selected, in which case the tune tone may be only a momentary beep.

- (e) Do these steps to do a voice communication test with a radio tower operator:
- 1) Push and hold the PTT switch while you speak.
 - a) Make sure you hear the sidetone in the headset while you speak.
 - 2) Release the PTT switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is satisfactory.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- b) Make sure the sound of the received voice changes when you turn the HF-1 volume control on the captain's ACP with no change in voice quality.

HAP 048

- c) Make sure the sound of the received voice changes when you turn the applicable HF-1 or HF-2 volume control on the captain's ACP with no change in voice quality.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

G. Put the Airplane Back to Its Initial Condition

SUBTASK 23-11-61-860-014

- (1) Do these steps at the P8 panel:

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- (a) Push and release the HF-1 switch on the captain's ACP.
 - 1) Make sure the switch light goes off.

EFFECTIVITY

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

HAP 048

- (b) Push and release the applicable HF-1 or HF-2 switch on the captain's ACP.
 - 1) Make sure the switch light goes off.

HAP 038, 041-047, 049-054; HAP 037, 039, 040 POST SB 737-23-1299

- (c) Push and release the HF-1 volume control on the captain's ACP.

HAP 048

- (d) Push and release the applicable HF-1 or HF-2 volume control on the captain's ACP.
 - 1) Make sure the volume control indicator light goes off.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-11-61-860-015

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

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HF ANTENNA COUPLER - INSPECTION/CHECK

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has this task:
 - (1) A pressurization test of a HF antenna coupler installed on a 737 Next Generation airplane.

TASK 23-11-61-200-801

2. HF Antenna Coupler Pressurization Test

A. References

Reference	Title
23-11-00-710-801	HF Communication System - Operational Test (P/B 501)
23-11-61-000-801	HF Antenna Coupler - Removal (P/B 401)
23-11-61-400-801	HF Antenna Coupler - Installation (P/B 401)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-11102	Test Cable - HF Coupler (Part #: C23003-1, Supplier: 81205, A/P Effectivity: 737-600, -700, -800, -900)
STD-11101	Computer - Laptop (XP & 9 pin serial RS-232 port)

C. Location Zones

Zone	Area
322	Vertical Fin - Removable Fin Leading Edge

D. Access Panels

Number	Name/Location
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

E. Procedure

SUBTASK 23-11-61-861-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

WARNING: REMOVE THE ELECTRICAL POWER FROM EACH HF COMMUNICATION SYSTEM BEFORE YOU REMOVE THE LEADING EDGE SECTIONS. HF SIGNALS CAN CAUSE ELECTRICAL SHOCKS AND INJURY TO PERSONS.

- (2) Open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	11	C00839	COMMUNICATIONS HF 1

EFFECTIVITY

HAP 048

23-11-61



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F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C00857	COMMUNICATIONS HF 2

SUBTASK 23-11-61-010-003

- (3) Remove the applicable access panels:

<u>Number</u>	<u>Name/Location</u>
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

NOTE: The HF-1 antenna coupler is installed on the left side of the vertical stabilizer. The HF-2 antenna coupler is installed on the right side of the vertical stabilizer.

SUBTASK 23-11-61-280-001

- (4) Disconnect electrical connector D341 from the HF-1 antenna coupler, M227.
- (5) Connect the test cable, SPL-11102 to the HF-1 antenna coupler electrical connector (X42).
- (6) Connect the test cable, SPL-11102 to the RS-232 port of the laptop computer, STD-11101.
- (7) Close this circuit breaker:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	11	C00839	COMMUNICATIONS HF 1

- (8) Open the HyperTerminal application on the laptop (Start, All Programs, Accessories, Communications, HyperTerminal).
- (9) When the "Connection Description" window shows, click on the CANCEL button.
- (10) When the "New Connection - HyperTerminal" window shows, set the connection properties as follows:
- Select "File", then "Properties".
 - Set "Connect using" to "COM1".
 - Click on the CONFIGURE button
 - Set the Port Settings as follows:
 - "Bits per second:" to "9600"
 - "Data bits:" to "7"
 - "Parity:" to "Odd"
 - "Stop bits:" to "1"
 - "Flow control:" to "None"
 - Click on the OK button to go back to the "New Connection Properties" window.
 - From the "New Connection Properties" window, click on the "Settings" tab.
 - Choose settings as follows:
 - "Function, arrow, and ctrl keys act as" to "Terminal keys"
 - "Backspace key sends" to "Ctrl + H"
 - "Emulation:" to "Auto detect"
 - "Telnet terminal ID:" to "ANSI"
 - "Backscroll buffer lines:" to "500".

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- 2) Leave the "Play sound when connecting or disconnecting" box unchecked.
- 3) Click on the "ASCII Setup" button.
- 4) Chose settings as follows:
 - Leave the "Send line ends with line feeds" box unchecked
 - Check the "Echo typed characters locally" box
 - "Line delay:" to 0 milliseconds
 - "Character delay:" to 0 milliseconds
 - Leave the "Append line feeds to incoming line ends" box unchecked
 - Leave the "Force incoming data to 7-bit ASCII" box unchecked
 - Check the "Wrap lines that exceed terminal width" box
- 5) Click on OK to go back to the "Settings" tab of the "New Connection Properties" window.
 - (e) Click on OK to go back to the "New Connection - HyperTerminal" window.
- (11) Click on "File", then "Save"

NOTE: If you are asked for a filename and icon, use the default icon and the filename "HF Coupler".
- (12) Press the ENTER key on the laptop keyboard.
 - (a) The status shown in the lower left corner of the HyperTerminal window changes from "Disconnected" to "Connected 0:00:xx" and begins counting the elapsed time of the connection.
- (13) Enter the key sequence of CTRL-J,x,3 (without the commas) on the keyboard and press the ENTER key.
 - (a) This data shows:
 - 1) x3
 - X0 - testinterface off
 - X1 - tuning response after tuning
 - X2 - tuning response after tuning step
 - + X3 - antenna coupler control via test interface
- (14) Enter the key sequence of CTRL-J,f,1 (without the commas) on the keyboard and press the ENTER key.
 - (a) Data similar to what follows is shown:
 - 1) f1
T-(136) ITLin- ITLout- U-(017) I-(012) P-(192/112)

NOTE: The HF antenna coupler internal pressure data shows at the end of the string in the form P-(XXX/YYY).
 - (b) The value for "XXX" should be more than 60 counts greater than the value for "YYY".
 - 1) If the value for "XXX" is less than 60 counts greater than the value for "YYY", replace the HF-1 Antenna Coupler. These are the tasks:
 - HF Antenna Coupler - Removal, TASK 23-11-61-000-801
 - HF Antenna Coupler - Installation, TASK 23-11-61-400-801
 - 2) If the value for "XXX" is 60 or more counts greater that the value for "YYY", the HF-1 Antenna Coupler pressurization is satisfactory.

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- (15) On the HyperTerminal menu bar, click on "Call", then "Disconnect".
- (a) The status in the lower left corner of the HyperTerminal window changes to "Disconnected".
- (16) Open this circuit breaker:
- CAPT Electrical System Panel, P18-2
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|---------------------|
| E | 11 | C00839 | COMMUNICATIONS HF 1 |
- (17) Disconnect the test cable, SPL-11102 from the HF-1 antenna coupler electrical connector (X42).
- (18) Connect electrical connector D341 to the HF-1 antenna coupler electrical connector (X42).
- (19) Disconnect electrical connector D629 from the HF-2 antenna coupler, M440.
- (20) Connect the test cable, SPL-11102 to the HF-2 antenna coupler electrical connector (X42).
- (21) Close this circuit breaker:
- F/O Electrical System Panel, P6-1
- | <u>Row</u> | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|------------|------------|---------------|---------------------|
| D | 2 | C00857 | COMMUNICATIONS HF 2 |
- (22) Press the ENTER key on the laptop keyboard.
- (a) The status shown in the lower left corner of the HyperTerminal window changes from "Disconnected" to "Connected 0:00:xx" and begins counting the elapsed time of the connection.
- (23) Enter the key sequence of CTRL-J,x,3 (without the commas) on the keyboard and press the ENTER key.
- (a) This data shows:
- x3
 - X0 - testinterface off
 - X1 - tuning response after tuning
 - X2 - tuning response after tuning step
 - + X3 - antenna coupler control via test interface
- (24) Enter the key sequence of CTRL-J,f,1 (without the commas) on the keyboard and press the ENTER key.
- (a) Data similar to what follows is shown:
- f1
 - T-(136) ITLin- ITLout- U-(017) I-(012) P-(192/112)

NOTE: The HF antenna coupler internal pressure data shows at the end of the string in the form P-(XXX/YYY).
 - The value for "XXX" should be more than 60 counts greater than the value for "YYY".
 - If the value for "XXX" is less than 60 counts greater than the value for "YYY", replace the HF-2 Antenna Coupler. These are the tasks:
 - HF Antenna Coupler - Removal, TASK 23-11-61-000-801
 - HF Antenna Coupler - Installation, TASK 23-11-61-400-801
 - If the value for "XXX" is 60 or more counts greater than the value for "YYY", the HF-2 Antenna Coupler pressurization is satisfactory.

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- (25) On the HyperTerminal menu bar, click on "Call", then "Disconnect".
 - (a) The status in the lower left corner of the HyperTerminal changes to "Disconnected".

- (26) Open this circuit breaker:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C00857	COMMUNICATIONS HF 2

- (27) Disconnect the test cable, SPL-11102 from the HF-2 antenna coupler electrical connector (X42).
- (28) Disconnect the test cable, SPL-11102 from the RS-232 port of the laptop computer, STD-11101.
- (29) Connect electrical connector D629 to the HF-2 antenna coupler electrical connector (X42).

F. Put the Airplane Back to Its Initial Condition

SUBTASK 23-11-61-710-002

- (1) Do an operational test of the HF-1 and HF-2 High Frequency Communication Systems. This is the task: HF Communication System - Operational Test, TASK 23-11-00-710-801
- (2) Install the applicable access panels:

<u>Number</u>	<u>Name/Location</u>
322AL	Vertical Fin, Fixed Leading Edge
322AR	Vertical Fin, Fixed Leading Edge

- (3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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VERY HIGH FREQUENCY (VHF) COMMUNICATION SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) An Operational Test of the VHF communication transceiver.
 - (2) A System Test of the VHF communication system.
- C. There are three VHF communication systems installed on the airplane. These are: VHF-1, VHF-2, and VHF-3.

HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

- D. The No. 1 and No. 2 VHF communication control panels are located on the aft electronic panel, P8, in the flight compartment.

HAP 031-054, 101-999

- E. The No. 1, No. 2, and No. 3 radio tuning panels (RTPs) are located on the aft electronic panel, P8, in the flight compartment.

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TASK 23-12-00-710-801

2. VHF Communication System - Operational Test

- A. General
 - (1) The operational test is a BITE test of the VHF communication transceiver.
 - (a) The BITE test does a check of the internal functions of the VHF communication transceiver. The BITE test also does a check of the ARINC 429 frequency tuning input data to the VHF communication transceiver.
 - (b) The same sequence of steps is used for the No. 1, No. 2, or No. 3 VHF communication system.
 - (c) The operational test is a quick test that makes sure the VHF transceiver is functional.
- B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

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E. Procedure

SUBTASK 23-12-00-860-001

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-12-00-860-003

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	10	C00284	PANEL & INSTR ELEX PANEL

SUBTASK 23-12-00-010-001

(3) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-12-00-710-005

(4) Push and release one of the two TEST switches on the applicable VHF communication transceiver front panel to do the BITE test for each VHF communication system (VHF-1, VHF-2, or VHF-3).

- (a) Make sure the LCD screen shows VHF DATA RADIO TEST IN PROGRESS.
- (b) If the LCD screen shows VHF DATA RADIO TEST COMPLETE - NO FAILURES, then the BITE test passed.

F. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-00-410-001

(1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-12-00-860-006

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

TASK 23-12-00-730-801

3. VHF Communication System - System Test

A. General

- (1) This task includes these tests:
 - (a) A BITE Test

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HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

(b) A VHF Communication Control Panel Test

HAP 031-054, 101-999

(c) An RTP to RTP Interface Test

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(d) A VHF Communication Test.

- (2) Make sure the flight interphone system operates. The communication test uses these flight interphone system components: audio control panels (ACPs), headsets, microphones, and push-to-talk (PTT) switches.
- (3) Make sure the airplane is not in or near any large metal structures. VHF communication while the airplane is on the ground can be degraded by airplane position or blocked by RF signal attenuation due to ground equipment and structures. If the quality of the transmitted and received voice signals is not satisfactory, move the airplane to a better position.
- (4) Make sure you use approved test frequencies when you speak with the radio tower operator.

B. References

Reference	Title
23-27-00-700-812-009	ACARS - System Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare for the Test

SUBTASK 23-12-00-860-007

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-12-00-860-009

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	10	C00284	PANEL & INSTR ELEX PANEL

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E. BITE Test

SUBTASK 23-12-00-710-003

- (1) Do this task: VHF Communication System - Operational Test, TASK 23-12-00-710-801.

HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

F. VHF Communication Control Panel Test

SUBTASK 23-12-00-730-008

- (1) Do these steps at each VHF communication control panel:
 - (a) Make sure both frequency displays show a different 6-digit number.
 - (b) Push the TFR switch.
 - 1) Make sure the number in the STANDBY frequency display moved to the ACTIVE frequency display.
 - 2) Make sure the number in the ACTIVE frequency display moved to the STANDBY frequency display.
 - (c) Rotate the PANEL BRIGHT control switch on the aft electronic panel, P8.
 - 1) Make sure the back-lighting intensity of each VHF communication control panel changes.

HAP 031-054, 101-999

G. RTP to RTP Interface Test

SUBTASK 23-12-00-730-003

- (1) Do these steps at the radio tuning panels (RTPs):
 - (a) Push the VHF-1 switch on each RTP.
 - 1) Make sure that all RTPs show the same ACTIVE and STANDBY frequencies.
 - (b) Set RTP-1 to a new frequency.
 - 1) Make sure that RTP-2 and RTP-3 show the new frequency.
 - (c) Set RTP-2 to a new frequency.
 - 1) Make sure that RTP-1 and RTP-3 show the new frequency.
 - (d) Set RTP-3 to a new frequency.
 - 1) Make sure that RTP-1 and RTP-2 show the new frequency.
 - (e) Make sure the crosstuning lights are on, on all three RTPs.

NOTE: The crosstuning light is above the display transfer switch, between the frequency displays.
 - (f) Push the VHF-2 switch on RTP-2.
 - (g) Push the VHF-3 switch on RTP-3.
 - (h) Make sure the crosstuning lights are off on all three RTPs.

HAP ALL

H. VHF Communication Test

SUBTASK 23-12-00-730-004

- (1) Do a test of the VHF-1 communication system:
 - (a) Connect a headset/boom microphone to the captain's jack panel.

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- (b) Do these steps to prepare the captain's audio control panel (ACP) for VHF-1 system operation:
 - 1) Push and release the VHF-1 switch.
 - a) Make sure the switch light comes on.
 - 2) Push and release the VHF-1 volume control.
 - a) Make sure the volume control indicator light comes on.
 - 3) Set the volume control to the middle position.
 - 4) Set the MASK/BOOM switch (if installed) to the BOOM position.

HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

- (c) Set the VHF-1 communication control panel to an approved test frequency.

HAP 031-054, 101-999

- (d) Set the RTP-1 to an approved test frequency for VHF-1.

HAP ALL

- (e) Do these steps to do a voice communication test with a radio tower operator:
 - 1) Push and hold a push-to-talk (PTT) switch while you speak.
 - a) Make sure you hear the sidetone in the headset while you speak.
 - 2) Release the PTT switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is satisfactory.
 - b) Make sure the sound of the received voice changes when you turn the VHF-1 volume control on the captain's ACP with no change in voice quality.

SUBTASK 23-12-00-730-005

- (2) Do a test of the VHF-2 communication system:
 - (a) Connect a headset/boom microphone to the first officer's jack panel.
 - (b) Do these steps to prepare the first officer's ACP for VHF-2 system operation:
 - 1) Push and release the VHF-2 switch.
 - a) Make sure the switch light comes on.
 - 2) Push and release the VHF-2 volume control.
 - a) Make sure the volume control indicator light comes on.
 - 3) Set the volume control to the middle position.
 - 4) Set the MASK/BOOM switch (if installed) to the BOOM position.

HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

- (c) Set the VHF-2 communication control panel to an approved test frequency.

HAP 031-054, 101-999

- (d) Set the RTP-2 to an approved test frequency for VHF-2.

HAP ALL

- (e) Do these steps to do a voice communication test with a radio tower operator:
 - 1) Push and hold a PTT switch while you speak.
 - a) Make sure you hear the sidetone in the headset while you speak.
 - 2) Release the PTT switch while you listen.

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- a) Make sure the quality of the transmitted and received voice is satisfactory.
- b) Make sure the sound of the received voice changes when you turn the VHF-2 volume control on the first officer's ACP with no change in voice quality.

HAP 031-054, 101-999

SUBTASK 23-12-00-730-006

- (3) Do a test of the VHF-3 communication system:
 - (a) Connect a headset/boom microphone to the captain's jack panel.
 - (b) Do these steps to prepare the captain's ACP for VHF-3 system operation:
 - 1) Push and release the VHF-3 switch.
 - a) Make sure the switch light comes on.
 - 2) Push and release the VHF-3 volume control.
 - a) Make sure the volume control indicator light comes on.
 - 3) Set the volume control to the middle position.
 - 4) Set the MASK/BOOM switch (if installed) to the BOOM position.
 - (c) Set the RTP-3 to an approved test frequency for VHF-3.
 - (d) Do these steps to do a voice communication test with a radio tower operator:
 - 1) Push and hold a PTT switch while you speak.
 - a) Make sure you hear the sidetone in the headset while you speak.
 - 2) Release the PTT switch while you listen.
 - a) Make sure the quality of the transmitted and received voice is satisfactory.
 - b) Make sure the sound of the received voice changes when you turn the VHF-3 volume control on the captain's ACP with no change in voice quality.

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SUBTASK 23-12-00-730-007

- (4) To do a test of the VHF-3 communication system, do this task: ACARS - System Test, TASK 23-27-00-700-812-009

NOTE: If the VHF Link Test passes, the VHF-3 communication system is operational.

I. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-00-860-015

- (1) At each ACP, push and release the applicable VHF switches.
 - (a) Make sure all the switch lights go off.

SUBTASK 23-12-00-860-017

- (2) At each ACP, push and release the applicable VHF volume controls.
 - (a) Make sure all the volume control indicator lights go off.

SUBTASK 23-12-00-860-016

- (3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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VHF COMMUNICATION ANTENNA - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the VHF communication antenna.
- (2) An installation of the VHF communication antenna.

B. The VHF communications antennas are installed at centerline on top and bottom of the fuselage (Figure 401 or Figure 402). See WDM 23-12-XX for antenna installation station numbers.

TASK 23-12-11-000-801

2. VHF Communication Antenna - Removal

(Figure 401 or Figure 402)

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)

B. Location Zones

Zone	Area
123	Forward Cargo Compartment - Left
143	Area Below Aft Cargo Compartment - Left
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left

C. Removal Procedure

SUBTASK 23-12-11-860-008

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

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F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-11-020-001

(2) Do these steps to remove the VHF COMMUNICATION ANTENNA [1]:

- (a) Remove the ten bolts [2] that attach the VHF COMMUNICATION ANTENNA [1] to the airplane.

CAUTION: REMOVE THE AERODYNAMIC FILLET SEAL CAREFULLY WITH THE SEALANT REMOVAL TOOL. DAMAGE TO THE AIRPLANE SKIN OR THE COAXIAL CABLE CAN OCCUR.

- (b) While you hold the VHF COMMUNICATION ANTENNA [1], use a sealant removal tool, COM-2481 to break the fillet seal around the base of the antenna.

CAUTION: DO NOT PULL ON THE COAXIAL CABLE. CAREFULLY MOVE THE ANTENNA. DISCONNECT THE COAXIAL CONNECTOR. THIS WILL PREVENT DAMAGE TO THE COAXIAL CABLE.

- (c) Move the VHF COMMUNICATION ANTENNA [1] away from the airplane to get access to the coaxial connector [4] on the coaxial cable.
- (d) Disconnect the coaxial connector [4] from the VHF COMMUNICATION ANTENNA [1] and remove the antenna.

NOTE: For the top VHF COMMUNICATION ANTENNA [1], make sure the coaxial connector [4] does not go back through the hole in the fuselage. Make sure you attach the coaxial connector [4] to something to prevent this.

END OF TASK

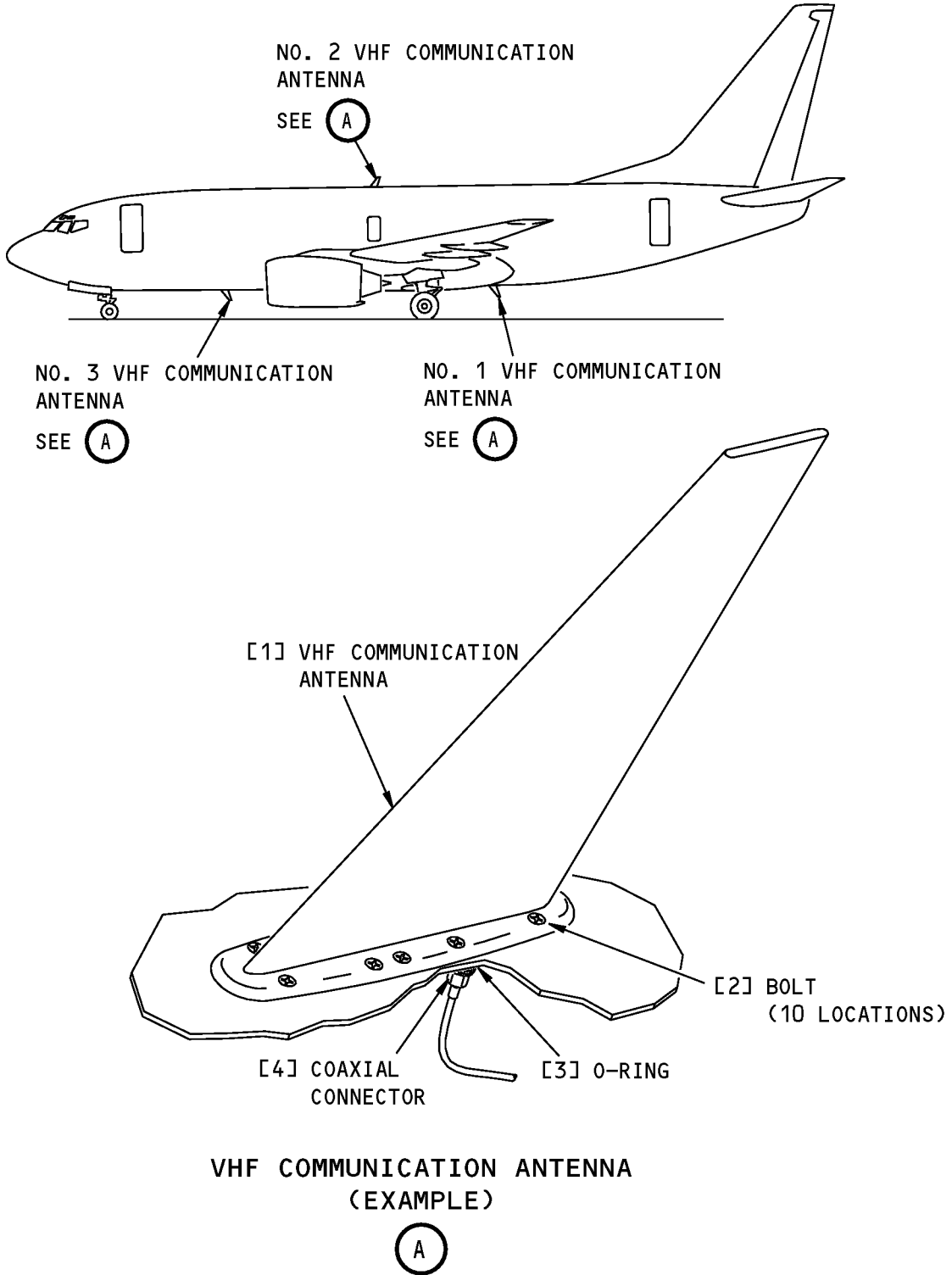
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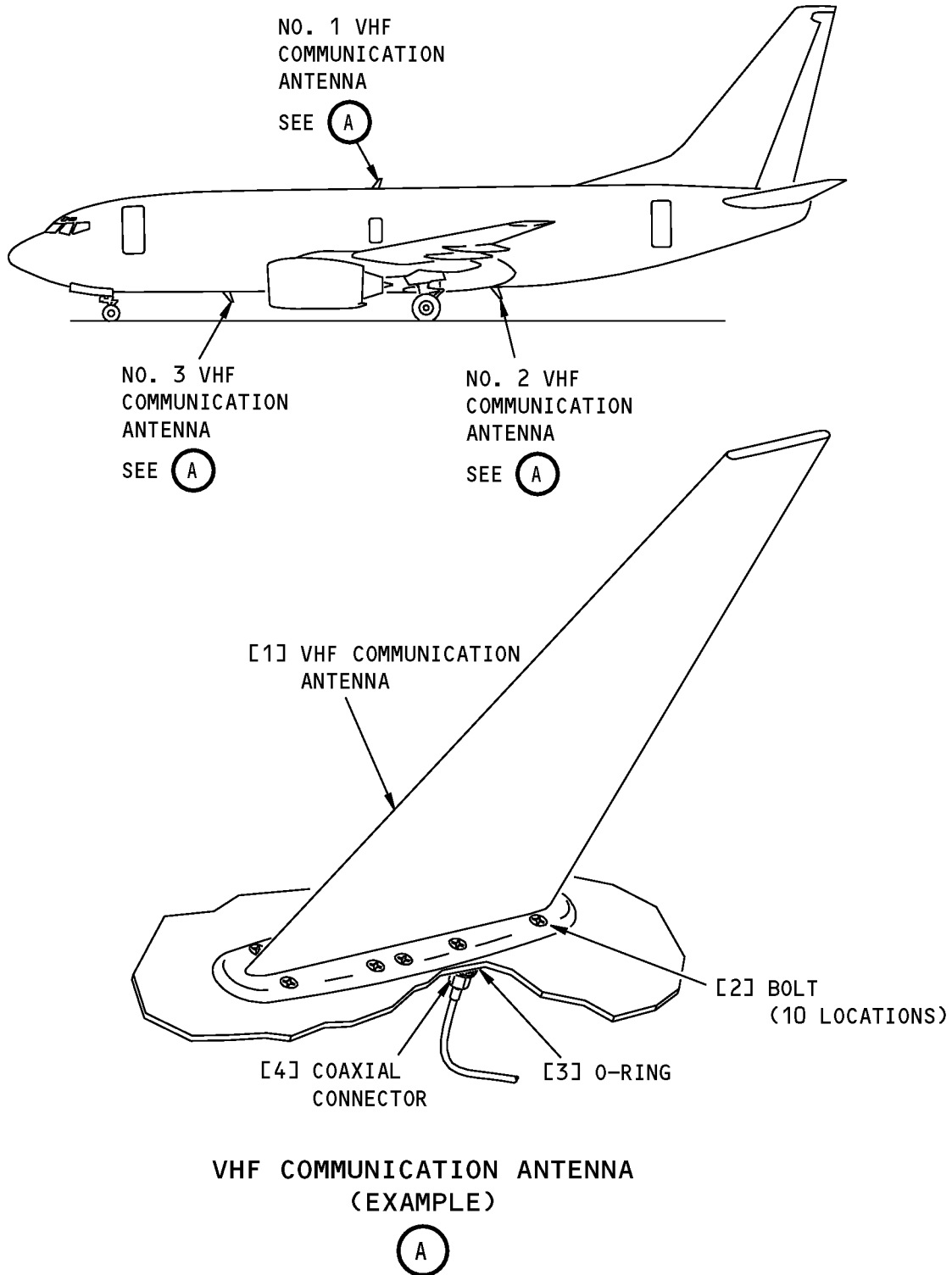


**VHF Communication Antenna Installation
Figure 401 (Sheet 1 of 2)/23-12-11-990-801**

EFFECTIVITY
HAP 001-013, 015, 016 PRE SB 737-23A1170

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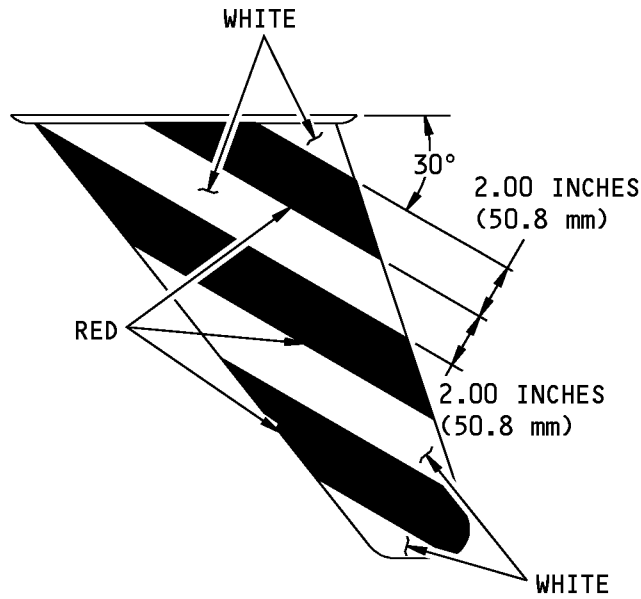
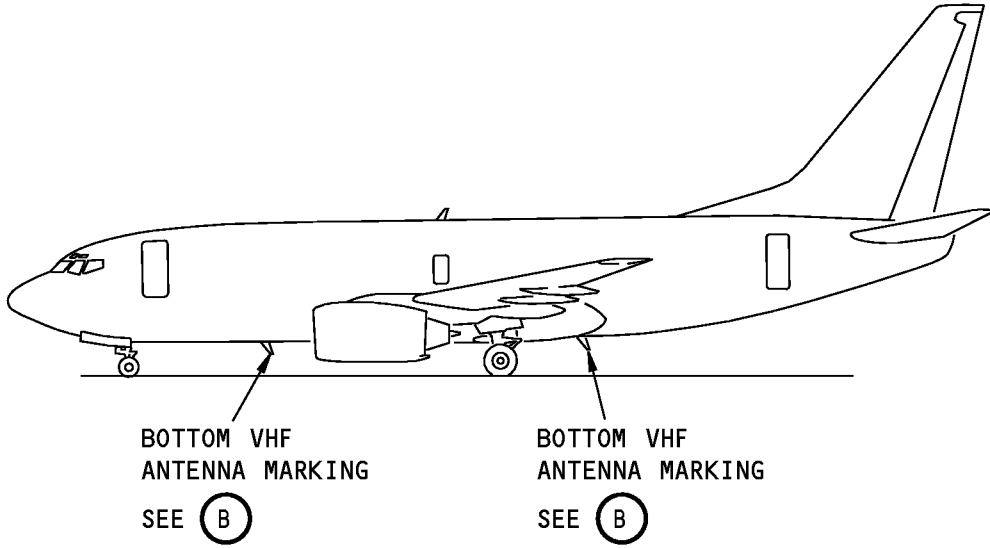


**VHF Communication Antenna Installation
Figure 401 (Sheet 2 of 2)/23-12-11-990-801**

EFFECTIVITY
HAP 017-026, 028-054, 101-999; HAP 001-013, 015, 016 POST
SB 737-23A1170

23-12-11

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**BOTTOM VHF ANTENNA MARKING
(PAINT STRIPES, EXAMPLE)**

(B)

**VHF Communication Antenna Installation
Figure 402/23-12-11-990-803**

EFFECTIVITY
HAP ALL

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TASK 23-12-11-400-801

3. VHF Communication Antenna - Installation

(Figure 401 or Figure 402)

A. References

Reference	Title
20-10-17-400-801	O-Rings Installation (P/B 401)
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
51-21-31-350-801	Removal and Control of Corrosion for Aluminum and Aluminum Alloys (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-804	Fillet Seal Application (P/B 201)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS 11-9
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC 5750, ASTM D740 / ASTM D1007
C00033	Coating - Exterior Protective Enamel, Flexibility Use	BMS10-60, Type II

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(Continued)

Reference	Description	Specification
C50005	Coating - Chemical Conversion - Alodine 1200S	
G00009	Compound - Organic Corrosion Inhibiting	BMS3-23
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5
G50316	Cloth - Clean, Dry, Lint-free, White, Cotton	

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	VHF COMMUNICATION ANTENNA	23-12-11-01-010	HAP 001-013, 015-026, 028-045, 054, 101-103
		23-12-11-01-035	HAP ALL
		23-12-11-01-165	HAP ALL

E. Location Zones

Zone	Area
123	Forward Cargo Compartment - Left
143	Area Below Aft Cargo Compartment - Left
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left

F. Prepare for the Installation

SUBTASK 23-12-11-860-006

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-11-100-002

(2) Clean the airplane mating surface:

(a) Remove sealant with a sealant removal tool, COM-2481.

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE DANGEROUS MATERIALS. SOLVENTS CAN BE FLAMMABLE. OBEY THE MATERIAL SAFETY DATA SHEETS (MSDS) FOR SOLVENTS. OBEY LOCAL REGULATIONS FOR THE CORRECT PROCEDURES TO USE OR DISCARD SOLVENTS. SOLVENTS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(b) Clean the airplane mating surface with a cotton wiper, G00034 that is moist with solvent, B00148, solvent, B00666, solvent, B00184, FCC-55 solvent, B01026, or solvent, B01054.

(c) Use a clean cotton wiper, G00034 and clean the airplane mating surface again.

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(d) Do these two steps above until the airplane mating surface is clean and dry.

SUBTASK 23-12-11-100-003

(3) If the mating surface has corrosion or other damage, or if the airplane mating surface has no alodine, then do these steps to prepare the airplane mating surface:

NOTE: An alternative installation procedure is to apply corrosion inhibiting compound, G00009 on an airplane mating surface that has no alodine.

(a) If there is corrosion, then, do this task: Removal and Control of Corrosion for Aluminum and Aluminum Alloys, TASK 51-21-31-350-801.

(b) Apply a layer of Alodine 1200S coating, C50005 to the airplane mating surface. To apply the alodine, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.

SUBTASK 23-12-11-420-001

(4) To install a new O-ring [3], do this task: O-Rings Installation, TASK 20-10-17-400-801.

(a) Make sure the O-ring [3] is aligned correctly in the O-ring groove.

G. Installation Procedure

SUBTASK 23-12-11-420-002

(1) Do these steps to install the VHF COMMUNICATION ANTENNA [1]:

(a) Connect the coaxial connector [4] to the VHF COMMUNICATION ANTENNA [1].

(b) Apply a layer of sealant, A00247 to the shank and threads of 9 of the 10 bolts [2].

(c) Put the VHF COMMUNICATION ANTENNA [1] in its position and install 9 of the 10 bolts [2].

NOTE: Leave one of the 10 bolts [2] out to do an electrical bond check.

SUBTASK 23-12-11-700-001

(2) Measure the resistance between the VHF COMMUNICATION ANTENNA [1] base and the airplane skin with a bonding meter, COM-1550 (SWPM 20-20-00).

NOTE: Use the empty bolt hole to get access to the VHF COMMUNICATION ANTENNA [1] base.

(a) Make sure the resistance is 0.001 ohm or less.

SUBTASK 23-12-11-420-003

(3) Apply a layer of sealant, A00247 to the shank and threads of the last bolt [2].

(a) Install the last bolt [2].

SUBTASK 23-12-11-390-001

(4) Apply sealant, A00247 around the base of the VHF COMMUNICATION ANTENNA [1] to make a corrosion fillet seal. To apply the sealant, do this task: Fillet Seal Application, TASK 51-31-00-390-804.

SUBTASK 23-12-11-860-007

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

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H. VHF Communication Antenna Markings (Optional)

NOTE: Figure 401 or Figure 402 shows an example of caution markings for the bottom VHF antenna. Caution markings for the upper VHF antenna are the same. Follow airline requirements for VHF antenna marking. Color and pattern can be different.

SUBTASK 23-12-11-100-006

(1) Clean the surface of the VHF antenna with solvent, B00148 and a clean, dry cotton cloth, G50316.

SUBTASK 23-12-11-370-001

CAUTION: DO NOT USE METAL-BASED PAINT, OR METALLIC TAPE ON THE VHF ANTENNA. A HIGH VSWR WILL OCCUR. THIS CAN CAUSE DAMAGE TO THE VHF COMM TRANSCEIVER.

(2) If applicable, apply paint stripes on the bottom or top VHF antenna:

(a) Use the coating, C00033, Enamel or equivalent to apply paint stripes as shown in Figure 401 or Figure 402.

I. Installation Test

SUBTASK 23-12-11-860-004

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-12-11-730-001

(2) Do this task: VHF Communication System - System Test, TASK 23-12-00-730-801.

J. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-11-860-005

(1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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VHF COMMUNICATION TRANSCEIVER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the VHF communication transceiver.
- (2) An installation of the VHF communication transceiver.

B. The No. 1, No. 2, and No. 3 VHF communication transceivers are located in the main equipment center. The No. 1 and No. 2 VHF communication transceivers are installed on the electronic equipment rack E1. The No. 3 VHF communication transceiver is installed on the electronic equipment rack E3.

TASK 23-12-21-020-801

2. VHF Communication Transceiver - Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Removal Procedure

SUBTASK 23-12-21-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-21-010-001

(2) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

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SUBTASK 23-12-21-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VHF COMM TRANSCEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VHF COMM TRANSCEIVER.

- (3) Before you touch the VHF COMM TRANSCEIVER [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-12-21-020-002

- (4) To remove the VHF COMM TRANSCEIVER [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— **END OF TASK** —————

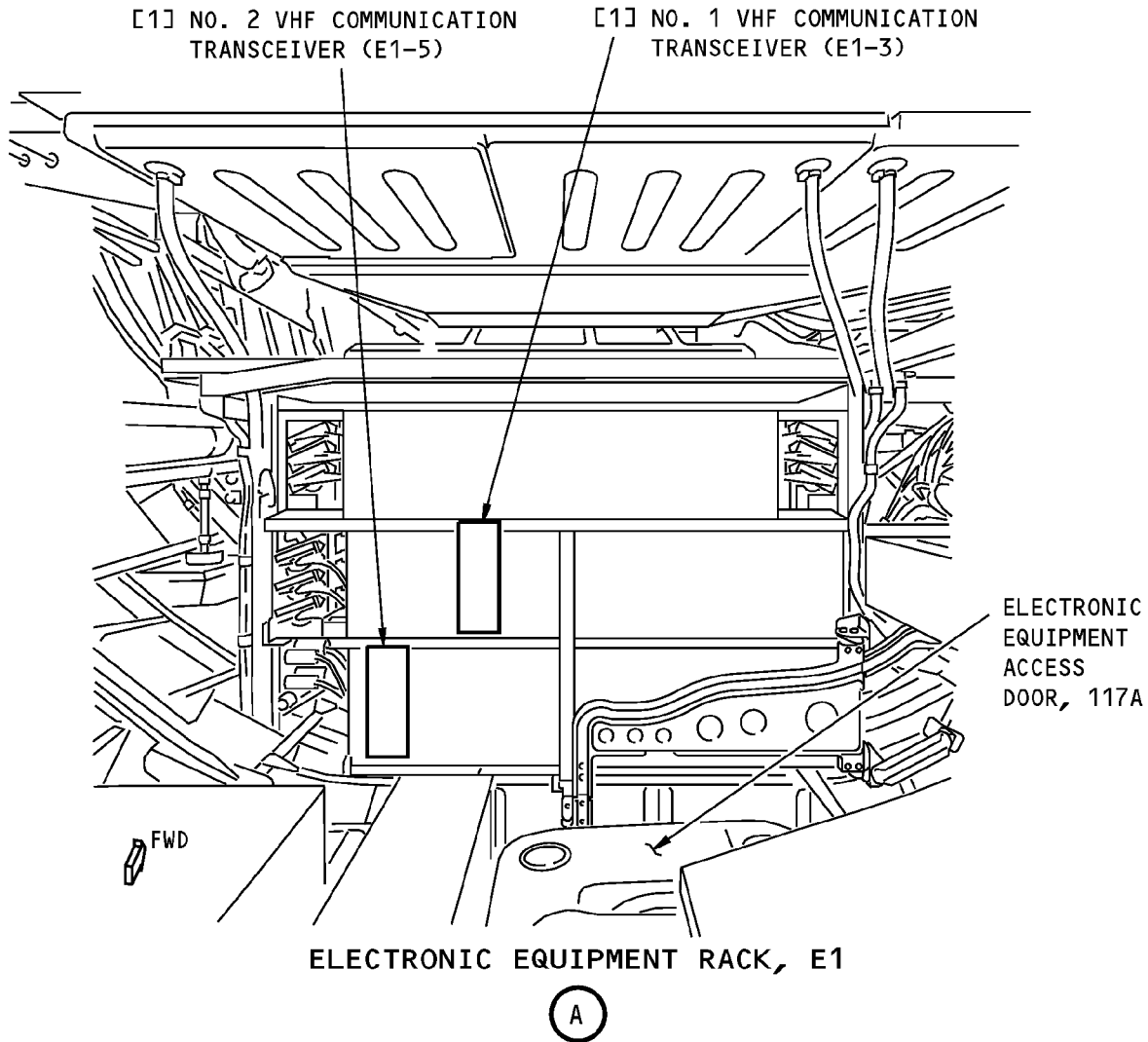
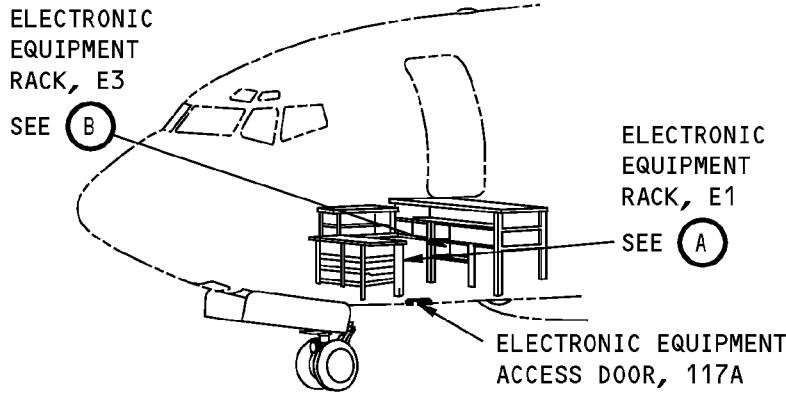
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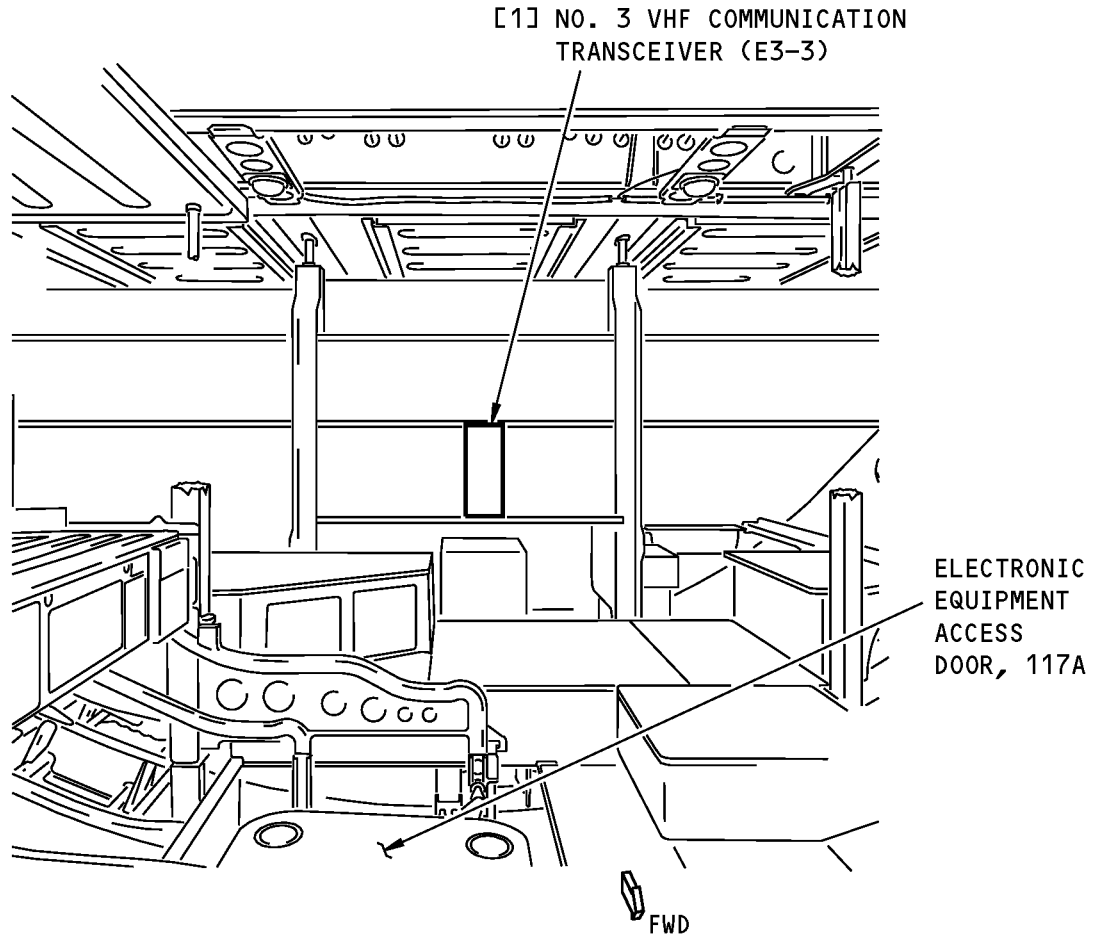
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VHF Communication Transceiver Installation
Figure 401 (Sheet 1 of 2)/23-12-21-990-801

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HAP ALL

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ELECTRONIC EQUIPMENT RACK, E3

B

**VHF Communication Transceiver Installation
Figure 401 (Sheet 2 of 2)/23-12-21-990-801**

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TASK 23-12-21-420-801

3. VHF Communication Transceiver - Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	VHF COMM TRANSCEIVER	23-12-21-01-005	HAP 001-011
		23-12-21-03-005	HAP 001-011
		23-12-21-04-005	HAP 012, 013, 015-026, 028-054, 101-999
		23-12-21-05-005	HAP 031-054, 101-999
		23-12-21-05A-005	HAP 012, 013, 015-026, 028-030

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Installation Procedure

SUBTASK 23-12-21-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

EFFECTIVITY
HAP ALL

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SUBTASK 23-12-21-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

- (2) Before you touch the VHF COMM TRANSCEIVER [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-12-21-420-002

- (3) To install the VHF COMM TRANSCEIVER [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-12-21-860-003

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

CAPT Electrical System Panel, P18-2

Table with 4 columns: Row, Col, Number, Name. Rows: D 11 C00165 COMMUNICATIONS VHF 1, D 12 C00471 COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Row: C 3 C00166 COMMUNICATIONS VHF 2

F. Installation Test

SUBTASK 23-12-21-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-12-21-740-001

- (2) Push and release one of the two TEST switches on the applicable VHF communication transceiver front panel to do the BITE test for the applicable VHF communication system (VHF-1, VHF-2, or VHF-3).

- (a) Make sure these conditions occur:

- 1) One second after the TEST switch is pressed, the screen shows TEST IN PROGRESS for the next four seconds.

NOTE: A moving indicator at the bottom of the LCD screen shows the progress of the test.

- 2) Once the BITE test is completed and passed, the screen will show TEST COMPLETE, NO FAILURES. Otherwise, the screen will show TEST COMPLETE, FAILURES.

G. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-21-410-002

- (1) Close this access panel:

Table with 2 columns: Number, Name/Location. Row: 117A Electronic Equipment Access Door

SUBTASK 23-12-21-860-005

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

EFFECTIVITY HAP ALL D633A101-HAP

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VHF COMMUNICATION CONTROL PANEL - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the VHF communication control panel.
- (2) An installation of the VHF communication control panel.

B. The No. 1 and No. 2 VHF communication control panels are located on the aft electronic panel, P8, in the flight compartment.

TASK 23-12-31-000-801

2. VHF Communication Control Panel - Removal

(Figure 401)

A. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Removal Procedure

SUBTASK 23-12-31-860-009

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-31-860-002

(2) Rotate the PANEL BRIGHT control on the aft electronic panel, P8, to the OFF position.

SUBTASK 23-12-31-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VHF COMM CONTROL PANEL. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VHF COMM CONTROL PANEL.

(3) Before you touch the VHF COMM CONTROL PANEL [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-12-31-020-002

(4) Do these steps to remove the VHF COMM CONTROL PANEL [1]:

- (a) Loosen the four quarter-turn fasteners [2].

EFFECTIVITY

HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

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- (b) Carefully lift the VHF COMM CONTROL PANEL [1] from the P8 panel to get access to the electrical connector [3].
- (c) Disconnect the electrical connector [3].
- (d) To install a protective cover on the electrical connector [3], do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

————— **END OF TASK** —————

EFFECTIVITY

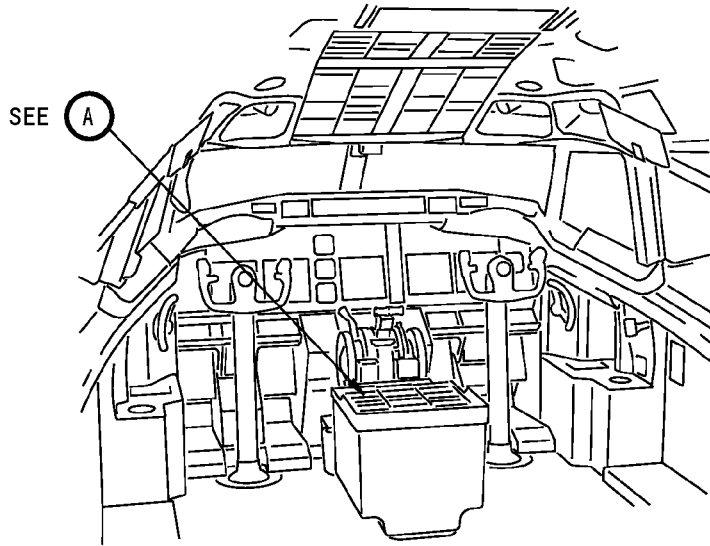
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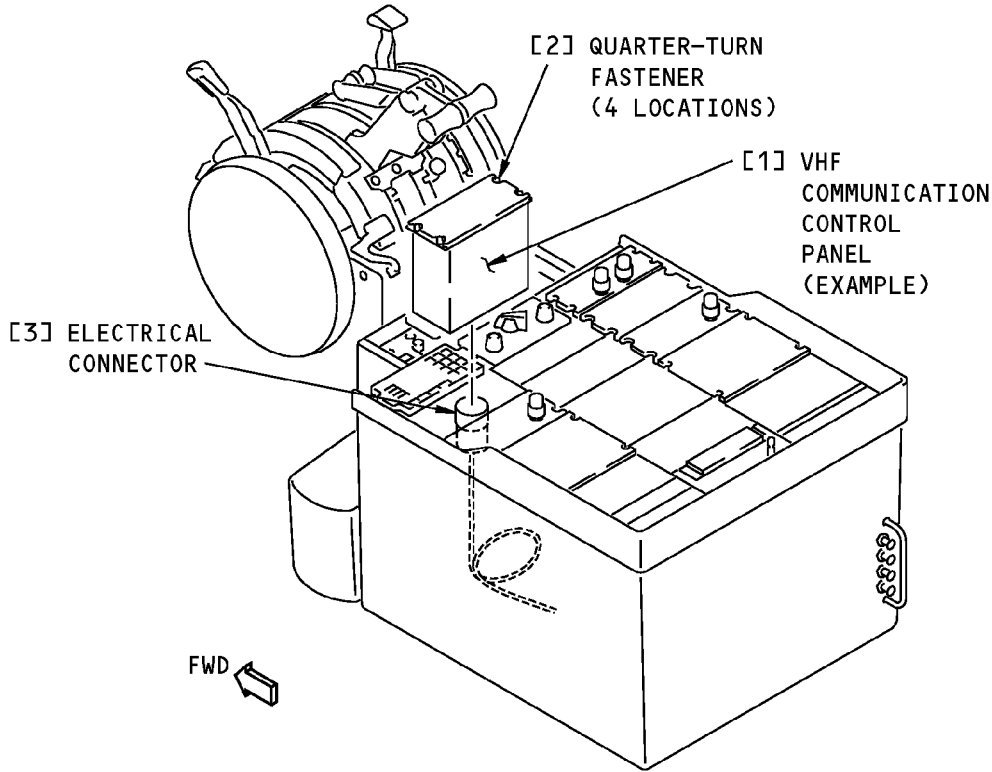
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FLIGHT COMPARTMENT



AISLE STAND



**VHF Communication Control Panel Installation
Figure 401/23-12-31-990-801**

EFFECTIVITY
HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

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TASK 23-12-31-400-801

3. VHF Communication Control Panel - Installation

(Figure 401)

A. References

Reference	Title
20-40-12-000-804	Conductive Dust Cap and Conductor Cover Removal (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	VHF COMM CONTROL PANEL	23-12-31-01-050	HAP 001-013, 015-026, 028-030
		23-12-31-01-065	HAP 001-013, 015-026, 028-030

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Installation Procedure

SUBTASK 23-12-31-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-31-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VHF COMM CONTROL PANEL. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VHF COMM CONTROL PANEL.

- (2) Before you touch the VHF COMM CONTROL PANEL [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-12-31-420-002

- (3) Do these steps to install the VHF COMM CONTROL PANEL [1]:
 - (a) To remove the protective cover from the electrical connector [3], do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.
 - (b) Examine the electrical connector [3] for bent or broken pins, dirt, and damage.
 - (c) Connect the electrical connector [3].
 - (d) Put the VHF COMM CONTROL PANEL [1] in its position on the P8 panel.

EFFECTIVITY

HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999

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(e) Tighten the four quarter-turn fasteners [2].

SUBTASK 23-12-31-860-011

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

E. Installation Test

SUBTASK 23-12-31-860-005

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-12-31-860-006

(2) Rotate the PANEL BRIGHT control on the P8 panel to the midrange position.

SUBTASK 23-12-31-860-012

(3) Set the VHF COMM CONTROL PANEL [1] to a VHF test frequency.

(a) Make sure the VHF communication system transmits and receives satisfactorily.

F. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-31-710-001

(1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

<p>EFFECTIVITY</p> <p>HAP 001-013, 015-026, 028-037, 039-041, 047-050, 054, 101-999</p>

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AIRCRAFT MAINTENANCE MANUAL

RADIO TUNING PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the radio tuning panel.
 - (2) An installation of the radio tuning panel.
 - (3) Radio Tuning Panel - INOP Display Toggle.
- C. The No. 1, No. 2, and No. 3 radio tuning panels (RTPs) are located on the aft electronic panel, P8, in the flight compartment.

TASK 23-12-41-000-801

2. Radio Tuning Panel (RTP) - Removal

(Figure 401)

A. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Removal Procedure

SUBTASK 23-12-41-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-41-860-002

- (2) Rotate the PANEL BRIGHT control on the aft electronic panel, P8, to the OFF position.

SUBTASK 23-12-41-020-001

CAUTION: CLEARLY IDENTIFY THE CONNECTOR FOR THE RTP POSITION (NO. 1, NO. 2 OR NO. 3) DURING REPLACEMENT. THERE IS A CROSS CONNECTION POSSIBILITY DURING INSTALLATION.

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(CAUTION PRECEDES)

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RTP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE RTP.

(3) Before you touch the RTP [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-12-41-020-002

(4) Do these steps to remove the RTP [1]:

- (a) Loosen the four quarter-turn fasteners [2].
- (b) Carefully lift the RTP [1] from the P8 panel to get access to the two electrical connectors [3].
- (c) Disconnect the two electrical connectors [3].
- (d) To install protective covers on the two electrical connectors [3], do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

————— **END OF TASK** —————

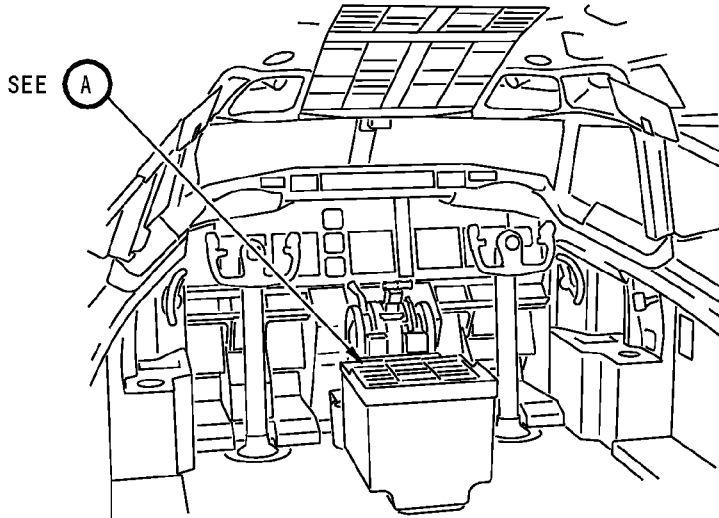
EFFECTIVITY
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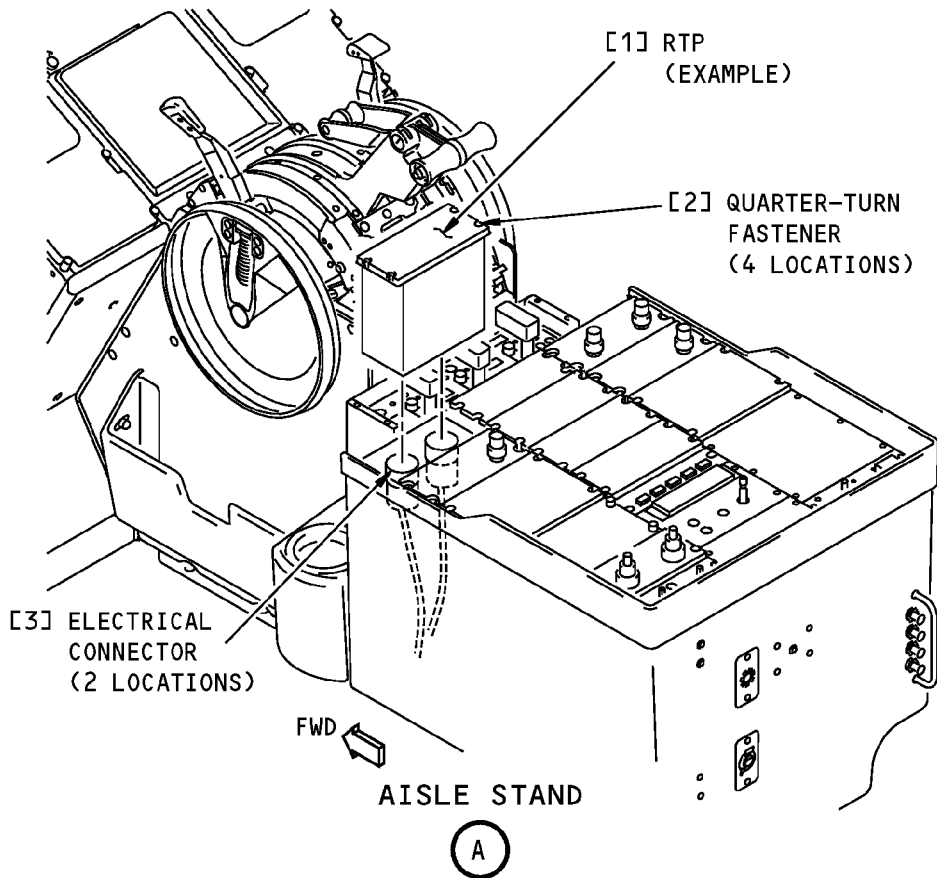
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FLIGHT COMPARTMENT



**Radio Tuning Panel (RTP) Installation
Figure 401/23-12-41-990-801**

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TASK 23-12-41-400-801

3. Radio Tuning Panel (RTP) - Installation

(Figure 401)

A. References

Reference	Title
20-40-12-000-804	Conductive Dust Cap and Conductor Cover Removal (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	RTP	23-12-41-06-025	HAP 041, 047, 049, 050, 054, 107-999
		23-12-41-06S-010	HAP 031-040, 042-046, 048, 051-053, 101-106

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Installation Procedure

SUBTASK 23-12-41-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-41-420-001

CAUTION: CLEARLY IDENTIFY THE CONNECTOR FOR THE RTP POSITION (NO. 1, NO. 2 OR NO. 3) DURING REPLACEMENT. THERE IS A CROSS CONNECTION POSSIBILITY DURING INSTALLATION.

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RTP. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE RTP.

- (2) Before you touch the RTP [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-12-41-420-002

- (3) Do these steps to install the RTP [1]:
 - (a) To remove the protective covers from the two electrical connectors [3], do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.

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- (b) Examine the two electrical connectors [3] for bent or broken pins, dirt, and damage.
- (c) Connect the two electrical connectors [3].
- (d) Put the RTP [1] in its position on the P8 panel.
- (e) Tighten the four quarter-turn fasteners [2].

SUBTASK 23-12-41-860-013

(4) For the RTP that you installed:

Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-41-860-016

(5) Make sure that the two circuit breakers for the other RTPs are open.

NOTE: You will close one circuit breaker at a time to do a check for a cross connection.

E. Installation Test

SUBTASK 23-12-41-860-005

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-12-41-860-006

(2) Rotate the PANEL BRIGHT control on the P8 panel to the midrange position.

(a) Make sure the back-lighting intensity of the RTP [1] changes.

SUBTASK 23-12-41-860-018

WARNING: DO NOT OPERATE THE HF COMMUNICATION SYSTEM WHILE THE AIRPLANE IS REFUELED OR DEFUELED. AN EXPLOSION CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MAKE SURE PERSONNEL STAY A MINIMUM OF 6 FEET AWAY FROM THE VERTICAL STABILIZER WHEN THE HF COMMUNICATION TRANSMITS. RF ENERGY FROM THE HF COMMUNICATION ANTENNA CAN CAUSE INJURIES TO PERSONS.

(3) Use the new RTP to set a VHF communication system or HF communication system to a test frequency.

SUBTASK 23-12-41-860-019

(4) Make sure the VHF or HF communication operates satisfactorily.

SUBTASK 23-12-41-860-020

(5) Remove the DO-NOT-CLOSE tag and close the circuit breaker for one of the other RTP's:

Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

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F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

SUBTASK 23-12-41-860-021

- (6) Use the applicable RTP to set a VHF or HF communication system to a test frequency.

SUBTASK 23-12-41-700-001

- (7) Make sure the VHF or HF communication system operates satisfactorily.

SUBTASK 23-12-41-860-022

- (8) Remove the DO-NOT-CLOSE tag and close the last circuit breaker.

F. Put the Airplane Back to Its Initial Condition

SUBTASK 23-12-41-860-007

- (1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

TASK 23-12-41-800-802

4. Radio Tuning Panel - INOP Display Toggle

A. General

- (1) You can use this procedure to set or remove INOP from RTP ACTIVE/STANDBY frequency displays. If the RTP frequency displays are normal, this procedure will change the displays to show INOP. If the RTP frequency displays show INOP, this procedure will change the frequency displays to normal.

NOTE: For airplanes with the Gables G7404-04 RTP installed, there is a known software problem that causes INOP INOP to show, even though the INOP pin option is not enabled. This procedure can be used to remove the INOP indication for those airplanes. Boeing recommends that the G74704-04 be replaced by the G7404-24 or G7404-124 panel at the airlines convenience.

- (2) If a communication system is not installed, you can use this procedure to set the RTP to INOP for the applicable communication system.
 - (a) For Gables P/N G7404-0X, the RTP can be set to show INOP for VHF1, VHF2, VHF3, HF1 or HF2.
 - (b) For Gables P/N G7404-2X or G7404-12X, the RTP can be set to show INOP only for VHF3, HF1 or HF2.
 - (c) When the display for a communication system is changed in one RTP, the display of all RTP's will be changed for that communication system.
 - (d) If this procedure is used to set frequency displays from INOP to normal, a communication system failure will change (toggle) the applicable communication system to FAIL or back to INOP.
 - (e) When RTP frequency displays show INOP INOP, the set communication system is not on or not installed.
 - (f) When RTP frequency displays show FAIL FAIL, the set communication system has failed.
 - (g) When RTP frequency displays show PANEL FAIL, there is a problem in the RTP, not in a communication system. The RTP self test failed.

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B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Radio Tuning Panel - Display Toggle Procedure

SUBTASK 23-12-41-860-023

(1) Do these steps:

(a) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1
D	12	C00471	COMMUNICATIONS VHF 3

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

- (b) Push the RTP-1 Radio Tuning switch (VHF1, VHF2, VHF3, HF1 or HF2) for the communication system displays to be changed.
- (c) Push the same Radio Tuning switch on RTP-2 (VHF1, VHF2, VHF3, HF1 or HF2).
- (d) Push the same Radio Tuning switch on RTP-3 (if installed) (VHF1, VHF2, VHF3, HF1 or HF2).
- (e) Open this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1

- (f) Wait a minimum of 5 seconds.
- (g) Push and hold down the RTP-1 Frequency Transfer switch.
- (h) Push and hold down the RTP-1 Radio Tuning switch (VHF1, VHF2, VHF3, HF1 or HF2) for the communication system displays to be changed.
- (i) While still holding the Frequency Transfer switch and Radio Tuning system switch on RTP-1,

Close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	11	C00165	COMMUNICATIONS VHF 1

- (j) Make sure RTP-1, RTP-2, and RTP-3 (if installed) displays have changed (toggled).
- (k) Release the RTP-1 Frequency Transfer switch.
- (l) Release the Radio Tuning switch (VHF1, VHF2, VHF3, HF1 or HF2).

————— END OF TASK —————

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EMERGENCY LOCATOR TRANSMITTER - MAINTENANCE PRACTICES

1. General

- A. This procedure contains scheduled maintenance task data.
B. This procedure has these tasks:
(1) A removal of the emergency locator transmitter (ELT).
(2) An installation of the ELT.

HAP 031-054, 101-999

- (3) A removal of the ELT/Navigation Interface unit.
(4) An installation of the ELT/Navigation Interface unit.

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- (5) A replacement of the ELT battery.

TASK 23-24-00-000-801-001

2. Emergency Locator Transmitter - Removal

(Figure 201)

A. References

Table with 2 columns: Reference, Title. Row 1: 25-21-45-000-801, Sculptured Ceiling Panel Removal (P/B 401)

B. Location Zones

Table with 2 columns: Zone, Area. Row 1: 241, Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left. Row 2: 242, Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Removal Procedure

HAP 031-054, 101-999

SUBTASK 23-24-00-865-001

- (1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Table with 4 columns: Row, Col, Number, Name

HAP 031-041, 044-054, 101-999

Table with 4 columns: C, 1, C01495, ELT INTERFACE UNIT

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SUBTASK 23-24-00-010-001-001

- (2) Do this task: Sculptured Ceiling Panel Removal, TASK 25-21-45-000-801.

SUBTASK 23-24-00-020-001-001

- (3) Do these steps to remove the ELT [5]:
(a) Make sure the ELT switch is in the OFF position.
(b) Loosen the two thumb screws [2] that attach the front cover [3] to the ELT [5].
(c) Move the front cover [3] away from the ELT [5].

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- (d) Disconnect the electrical connectors [1] from the ELT [5].
- (e) Pull down and forward on the front of the ELT bottom cover [6] to release the interlocking slots and tabs at the rear of the ELT [5].
- (f) Remove the ELT [5].

————— **END OF TASK** —————

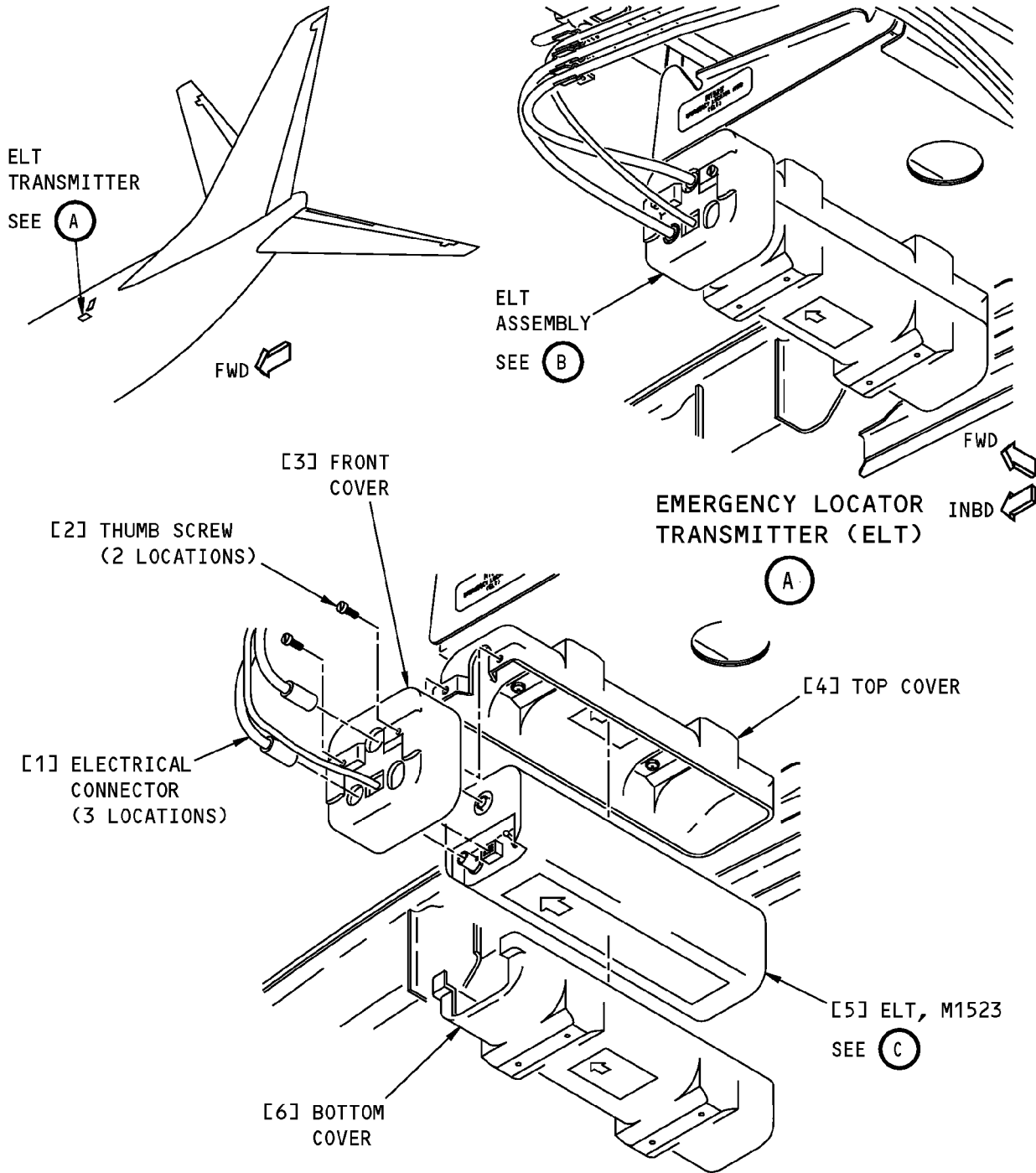
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EMERGENCY LOCATOR TRANSMITTER (ELT) ASSEMBLY

(B)

Emergency Locator Transmitter (ELT)
Figure 201 (Sheet 1 of 4)/23-24-00-990-801-001

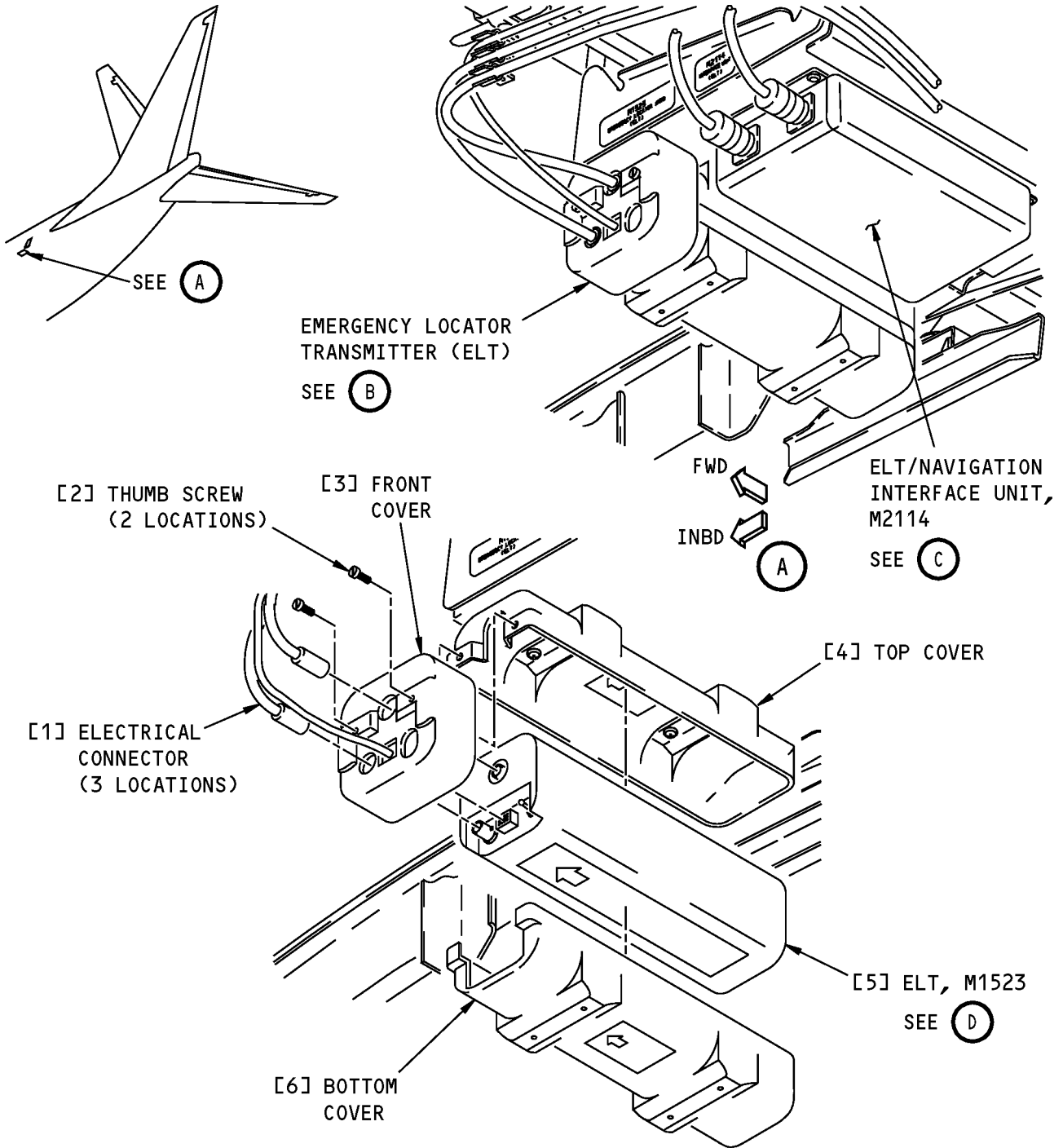
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HAP 001-013, 015-026, 028-030

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EMERGENCY LOCATOR TRANSMITTER (ELT) ASSEMBLY

(B)

**Emergency Locator Transmitter (ELT)
Figure 201 (Sheet 2 of 4)/23-24-00-990-801-001**

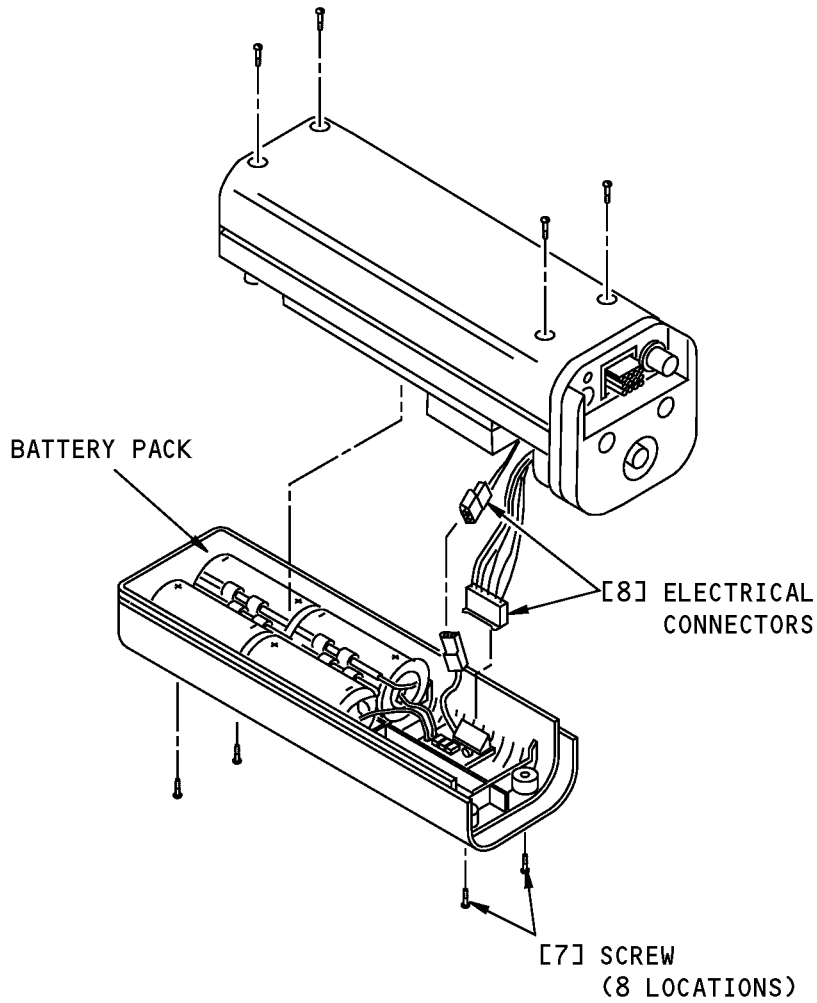
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ELT BATTERY PACK ASSEMBLY

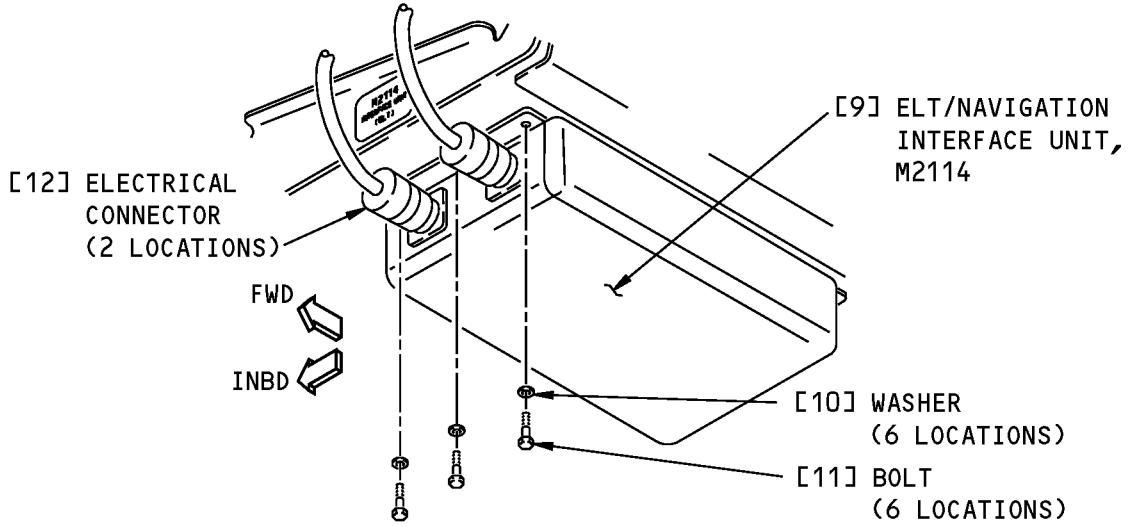
(C)

**Emergency Locator Transmitter (ELT)
Figure 201 (Sheet 3 of 4)/23-24-00-990-801-001**

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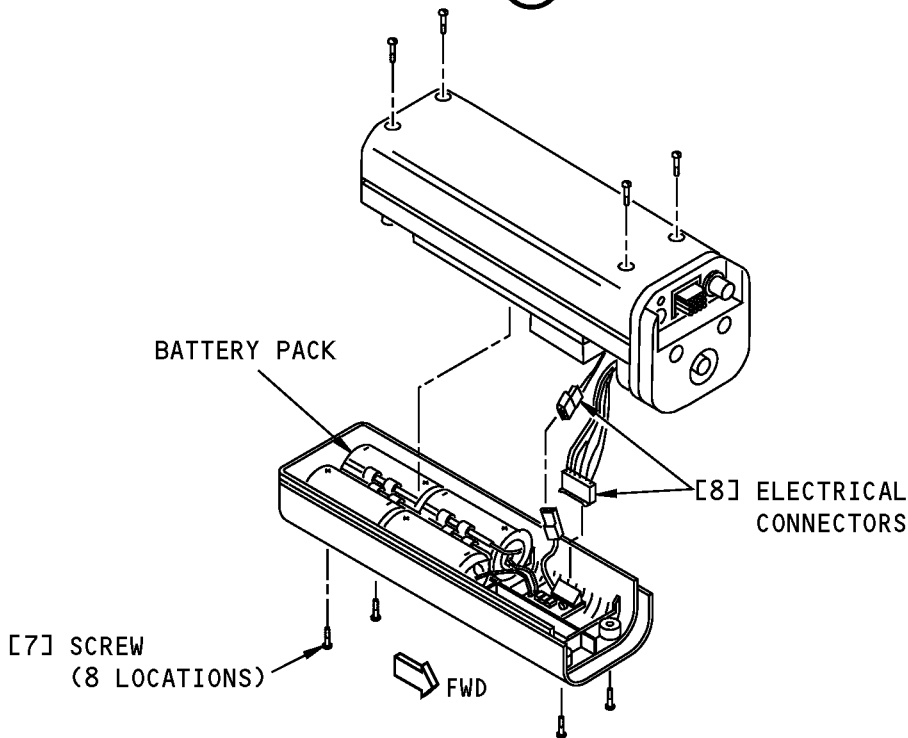
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ELT/NAVIGATION INTERFACE UNIT, M2114

(C)



ELT BATTERY PACK ASSEMBLY, M1523

(D)

**Emergency Locator Transmitter (ELT)
Figure 201 (Sheet 4 of 4)/23-24-00-990-801-001**

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TASK 23-24-00-400-801-001

3. Emergency Locator Transmitter - Installation

(Figure 201)

A. References

Reference	Title
23-24-00-710-801-001	ELT - Operational Test (P/B 501)
24-22-00 P/B 201	MANUAL CONTROL - MAINTENANCE PRACTICES
24-22-00-860-811	Supply Electrical Power (P/B 201)
25-21-45-400-801	Sculptured Ceiling Panel Installation (P/B 401)
FIM 23-24 TASK 801	Emergency Locator Transmitter (ELT) BITE Procedure

B. Location Zones

Zone	Area
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Installation Procedure

HAP 031-054, 101-999

SUBTASK 23-24-00-865-002

- (1) Make sure that this circuit breaker is open:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name

HAP 031-041, 044-054, 101-999

C	1	C01495	ELT INTERFACE UNIT
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SUBTASK 23-24-00-420-001-001

- (2) Do these steps to install the ELT [5]:

NOTE: For all airplanes with an operational ELT/Nav Interface Unit (ELT/NIU) and Programmable Switch Module, the ELT 406 MHz message protocol must be Standard Location Protocol (long message) encoded with Aircraft 24-bit address to be compatible with the 24-bit ICAO code. The unique airplane's 24-bit ICAO address (Mode S Code) will automatically be encoded by the ELT/Nav Interface Unit into the ELT during its installation.

- (a) Make sure the ELT switch is in the OFF position.
- (b) Put the ELT [5] in its position.
- (c) Put the ELT bottom cover in its position.
- (d) Connect the electrical connectors [1] to the ELT [5].
- (e) Attach the ELT front cover [3] to the tray with the two thumb screws [2].

D. ELT Installation Test

SUBTASK 23-24-00-861-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

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HAP 031-054, 101-999

SUBTASK 23-24-00-740-001

- (2) Do these steps to make sure that the ELT/NIU does an automatic programming to the ELT correctly:

NOTE: You must monitor the LED activity on the front panel of the ELT for a minimum of two minutes after the circuit breaker closed in the step follow.

- (a) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row Col Number Name

HAP 031-041, 044-054, 101-999

C 1 C01495 ELT INTERFACE UNIT

HAP 031-054, 101-999

- (b) Monitor the LED activity on the front panel of the ELT for a minimum two minutes.
- (c) Make sure that the LED on the ELT does not flash rapidly. This is an indication that the ELT is programmed correctly.
 - 1) If the LED on the ELT flashes rapidly two minutes after power applied to the ELT/NIU, then do the fault isolation for the ELT system (FIM 23-24 TASK 801).

NOTE: For airplane's configuration with an operational ELT/NIU, no other message protocols are compatible, including Standard Location Protocol (long message) encoded with ELT serial identification. If an improperly programmed ELT is installed in an airplane configured with an operational ELT/NIU, two minutes after power is applied, an error condition will be annunciated with the LED on the ELT flashing rapidly. This indicates by one of the following error conditions: 1) The ELT is programed for a protocol other than Aircraft 24-bit address and the ELT/NIU has been strapped for a 24-bit address. Or 2) The RS-232 TX line from the ELT (pin 12) to the ELT/NIU (pin 10) is not connected.

HAP ALL

SUBTASK 23-24-00-710-002-001

- (3) Do this task: ELT - Operational Test, TASK 23-24-00-710-801-001.

NOTE: The ELT 15 character hexadecimal beacon identification and serial number must be provided to the local registration, coding, and type approval office.

E. Put the Airplane Back in Its Usual Condition

SUBTASK 23-24-00-410-001-001

- (1) Do this task: Sculptured Ceiling Panel Installation, TASK 25-21-45-400-801.

SUBTASK 23-24-00-862-001

- (2) If applicable, remove the electrical power from the airplane (PAGEBLOCK 24-22-00/201).

————— **END OF TASK** —————

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HAP 031-054, 101-999

TASK 23-24-00-020-801-001

4. ELT/Navigation Interface Unit - Removal

A. References

Reference	Title
25-21-45-000-801	Sculptured Ceiling Panel Removal (P/B 401)

B. Location Zones

Zone	Area
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Removal Procedure

SUBTASK 23-24-00-010-006-001

(1) Do this task: Sculptured Ceiling Panel Removal, TASK 25-21-45-000-801.

SUBTASK 23-24-00-020-006-001

(2) Do these steps to remove the ELT/Nav Interface Unit [9]:

- (a) Disconnect the electrical connectors [12] from the ELT/Nav Interface Unit [9].
- (b) Remove the six bolts [11] and six washers [10] that attach the ELT/Nav Interface Unit [9] to the airplane structure.
- (c) Remove the ELT/Nav Interface Unit [9].

————— **END OF TASK** —————

TASK 23-24-00-420-801-001

5. ELT/Navigation Interface Unit - Installation

A. References

Reference	Title
23-24-00-710-801-001	ELT - Operational Test (P/B 501)
25-21-45-400-801	Sculptured Ceiling Panel Installation (P/B 401)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
9	ELT/Nav Interface Unit	23-24-51-10-010	HAP 031-054, 101-999

C. Location Zones

Zone	Area
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Installation Procedure

SUBTASK 23-24-00-420-006-001

(1) Do these steps to install the ELT/Nav Interface Unit [9]:

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HAP 031-054, 101-999 (Continued)

- (a) Put the ELT/Nav Interface Unit [9] in its position.
- (b) Install the six bolts [11] and six washers [10] to attach the ELT/Nav Interface Unit [9] to the airplane structure.
- (c) Connect the electrical connectors [12] to the ELT/Nav Interface Unit [9].

SUBTASK 23-24-00-410-006-001

- (2) Do this task: Sculptured Ceiling Panel Installation, TASK 25-21-45-400-801.

E. ELT Installation Test

SUBTASK 23-24-00-710-005-001

- (1) Do this task: ELT - Operational Test, TASK 23-24-00-710-801-001.

NOTE: The ELT 15 character hexadecimal beacon identification must be provided to the local registration, coding, and type approval office.

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————— END OF TASK —————

TASK 23-24-00-900-801-001

6. Emergency Locator Transmitter Battery - Replacement

(Figure 201)

A. Location Zones

Zone	Area
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

B. Replacement Procedure

SUBTASK 23-24-00-010-002-001

- (1) Do this task: Emergency Locator Transmitter - Removal, TASK 23-24-00-000-801-001.

SUBTASK 23-24-00-020-002-001

- (2) Do these steps to remove the battery pack assembly:
 - (a) Remove the four screws [7] that attach the battery pack assembly to the ELT [5].
 - (b) Disconnect electrical connectors [8].

SUBTASK 23-24-00-420-002-001

- (3) Do these steps to install the new battery pack assembly:
 - (a) Connect electrical connectors [8].
 - (b) Immediately set the ON/OFF switch to ON and then back to OFF to reset the ELT.
 - (c) Hold the battery pack in its position.
 - (d) Make sure all gaskets are aligned correctly.
 - (e) Install the four screws [7] that attach the battery pack to the ELT [5].
 - 1) Make sure the wires are not between the edges of the ELT [5] where they can be pinched.

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SUBTASK 23-24-00-410-002-001

(4) Do this task: Emergency Locator Transmitter - Installation, TASK 23-24-00-400-801-001.

————— **END OF TASK** —————

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EMERGENCY LOCATOR TRANSMITTER - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure contains this task:
 - (1) An operational test of the Emergency Locator Transmitter (ELT) system.

TASK 23-24-00-710-801-001

2. ELT - Operational Test

A. References

Reference	Title
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
23-24-00-000-801-001	Emergency Locator Transmitter - Removal (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
FIM 23-24 TASK 801	Emergency Locator Transmitter (ELT) BITE Procedure
WDM 23-24-11	Wiring Diagram Manual

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Prepare for the Test

SUBTASK 23-24-00-860-001-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-24-00-860-002-001

- (2) Make sure the switch on the front cover of the ELT is in the OFF position.

NOTE: For the location of the ELT, refer to the ELT removal procedure (TASK 23-24-00-000-801-001).

SUBTASK 23-24-00-860-003-001

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	3	C00166	COMMUNICATIONS VHF 2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	22	C00086	AUDIO F/O

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	12	C00132	MASTER CAUTION ANNUNCIATOR BUS 1
B	13	C00131	MASTER CAUTION ANNUNCIATOR BAT

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT
D	12	C00310	INDICATOR MASTER DIM BAT
D	13	C00311	INDICATOR MASTER DIM BUS 1
E	10	C00328	OVERHEAD 5V SECONDARY
E	11	C00313	INDICATOR MASTER DIM SECT 1

D. ELT Operational Test

SUBTASK 23-24-00-710-001-001

- (1) Do these steps to prepare for the ELT test:
 - (a) Push and hold the ELT light switch on the ELT control panel, P5.
 - 1) Make sure the ELT light comes on.
 - (b) Release the ELT light switch.
 - 1) Make sure the ELT light goes off.
 - (c) Push and release the MASTER CAUTION reset button on the glareshield panel, P7.
 - 1) Make sure the MASTER CAUTION and OVERHEAD lights are off.

HAP 017-026, 028-054, 101-999; HAP 001-013, 015, 016 POST SB 737-23A1170

- (d) Set the No. 2 VHF communication system (VHF COMM 2) to a frequency of 121.5 MHz (TASK 23-12-00-730-801).

HAP 001-013, 015, 016 PRE SB 737-23A1170

- (e) Set the No. 1 VHF communication system (VHF COMM 1) to a frequency of 121.5 MHz (TASK 23-12-00-730-801).

NOTE: Any VHF COMM System with a bottom mounted antenna can be used for this test. If the VHF antenna is on the top, it is possible to hear the ELT signal even though the ELT antenna has failed.

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CAUTION: DURING THE PERFORMANCE OF THIS TEST, THE ELT CONTROL PANEL SWITCH AND THE SWITCH ON THE ELT FRONT PANEL MUST NOT BE KEPT IN THE "ON" POSITION FOR MORE THAN 15 SECONDS AT A TIME. IF ANY TWO CONSECUTIVE STEPS (REQUIRING EITHER OF THESE SWITCHES TO BE SET TO THE "ON" POSITION) TAKE LONGER THAN 15 SECONDS TO COMPLETE, MOVE THE ELT CONTROL PANEL SWITCH TO THE "ARM" POSITION AND THEN BACK TO "ON" POSITION AND CONTINUE. IF THE ELT IS INADVERTENTLY OPERATED FOR LONGER THAN 15 SECONDS THEN THE AUTHORITIES MUST BE INFORMED TO PREVENT EMERGENCY SEARCH OPERATIONS THAT ARE NOT NECESSARY.

- (f) Follow the local ELT operation requirements.

NOTE: When the ELT is set to ON it will transmit immediately on 121.5 and 243 MHz. After 15 seconds, the P/N 453-0004 ELT will transmit on 406 MHz. After 50 seconds, the P/N 453-5004 ELT will transmit on 406 MHz. If the -5004 ELT is inadvertently kept in the ON position for longer than 50 seconds, then the authorities must be informed.

- (g) Open the guard on the ELT ARM/ON switch on the forward overhead panel P5.
- (h) Set the ELT ARM/ON switch to the ON position for less than 15 seconds.
 - 1) Make sure you hear the ELT signal on VHF COMM system.
 - 2) Make sure the ELT light comes on.

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- 3) Make sure the MASTER CAUTION and OVERHEAD lights, on the glareshield panel P7, come on.
- (i) Set the ELT ARM/ON switch to the ARM position.
 - 1) Make sure you do not hear the ELT signal on VHF COMM system.
 - 2) Make sure the ELT light is off.
 - 3) Make sure the MASTER CAUTION and OVERHEAD lights, on the glareshield panel P7, are off.
- (j) Close the guard on the ELT ARM/ON switch on the forward overhead panel P5.
- (k) Move the switch on the front cover of the ELT from the OFF position to the ON position for about 1 second, and then back to the OFF position.

NOTE: The ELT self-test includes a 406 MHz test transmission. This test transmission does not cause a search operation.

HAP 001-013, 015-026, 028-030

- 1) Make sure the light-emitting diode (LED) on the ELT comes on for approximately a one second pulse and then goes off after the switch is moved to OFF.

NOTE: If the self-test detects a fault, the LED gives a coded signal AFTER the initial one second pulse. The LED will flash in order of importance with approximately one-half second to one second pause between error codes.

The coded signal and related problems are as follows:

- If the LED flashes one time, this indicates a G-switch loop open failure.
- If the LED flashes three times or four times (depends on ELT part number), this indicates a transmitter problem (bad or unconnected coax, antenna problem, low power output or programming error).
- If the LED flashes five times, ignore this indication (this is not a fault because the ELT/NAV Interface unit is not installed).
- If the LED flashes seven times, this indicates a battery problem.

HAP 031-054, 101-999

- 2) Make sure the light-emitting diode (LED) on the ELT comes on for approximately a one second pulse and then goes off after the switch is moved to OFF.

NOTE: If the self-test detects a fault, the LED gives a coded signal AFTER the initial one second pulse. The LED will flash in order of importance with approximately one-half second to one second pause between error codes.

The coded signal and related problems are as follows:

- If the LED flashes one time, this indicates a G-switch loop open failure.
- If the LED flashes three times or four times (depends on ELT part number), this indicates a transmitter problem (bad or unconnected coax, antenna problem, low power output or programming error).
- If the LED flashes five times, this indicates a problem with the navigation system connection. Please note that if the ELT/NAV Interface unit (or PPIU) is installed but is not connected to the navigation system to provide current latitude/longitude position updates, this is not a fault. Please refer to WDM 23-24-11 to determine the correct airplane configuration.
- If the LED flashes seven times, this indicates a battery problem.

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3) If there was a self-test failure, do this task: FIM 23-24 TASK 801.

E. Put the Airplanes Back to Its Usual Condition

SUBTASK 23-24-00-860-004-001

(1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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EMERGENCY LOCATOR TRANSMITTER ANTENNA - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the emergency locator transmitter (ELT) antenna.
- (2) An installation of the ELT antenna.

TASK 23-24-02-000-801

2. ELT Antenna - Removal

(Figure 401)

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Antenna	23-24-02-01-010 23-24-02-04-010	HAP 001-011 HAP 012, 013, 015-026, 028-054, 101-999

C. Location Zones

Zone	Area
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Removal Procedure

SUBTASK 23-24-02-020-001

- (1) Do these steps to remove the ELT antenna [1]:
 - (a) Remove the six bolts [2] that attach the antenna [1] to the airplane.

CAUTION: BE CAREFUL WHEN YOU REMOVE THE FILLET SEAL WITH THE SEALANT REMOVAL TOOL. DAMAGE TO THE AIRPLANE SKIN CAN OCCUR.

- (b) While you hold the antenna [1], use a sealant removal tool, COM-2481 to break the fillet seal around the base of the antenna.

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CAUTION: DO NOT PULL ON THE COAXIAL CABLE. CAREFULLY MOVE THE ANTENNA. DISCONNECT THE COAXIAL CONNECTOR. THIS WILL PREVENT DAMAGE TO THE COAXIAL CABLE.

- (c) Move the antenna [1] away from the airplane to get access to the coaxial connectors [3] on the coaxial cables.
- (d) Disconnect the coaxial connectors [3] from the antenna [1] and remove the antenna [1].

NOTE: Make sure the coaxial connectors do not fall down through the opening.

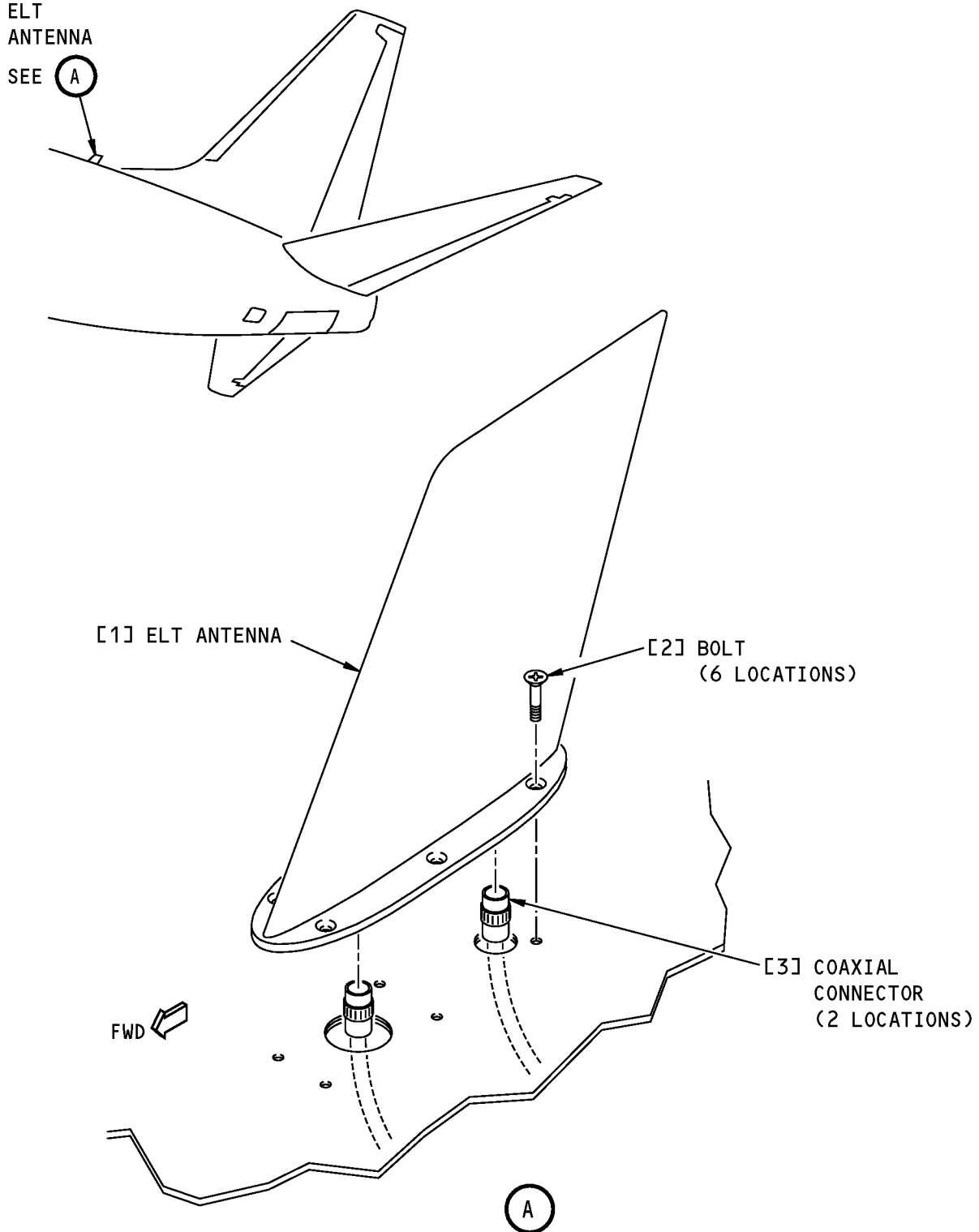
————— **END OF TASK** —————

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TASK 23-24-02-400-801

3. ELT Antenna - Installation

(Figure 401)

A. References

Reference	Title
23-24-00-710-801-001	ELT - Operational Test (P/B 501)
51-21-31-350-801	Removal and Control of Corrosion for Aluminum and Aluminum Alloys (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-804	Fillet Seal Application (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS 11-9
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC 5750, ASTM D740 / ASTM D1007
C50005	Coating - Chemical Conversion - Alodine 1200S	
G00009	Compound - Organic Corrosion Inhibiting	BMS3-23
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Antenna	23-24-02-01-010 23-24-02-04-010	HAP 001-011 HAP 012, 013, 015-026, 028-054, 101-999

E. Location Zones

Zone	Area
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

F. Installation Procedure

SUBTASK 23-24-02-100-002

(1) Clean the airplane mating surface:

- (a) Remove sealant with a sealant removal tool, COM-2481.

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the airplane mating surface with a cotton wiper, G00034 that is moist with one of the solvents that follow:
 - 1) solvent, B00148
 - 2) solvent, B00666
 - 3) solvent, B00184
 - 4) FCC-55 solvent, B01026
 - 5) solvent, B01054
- (c) Use a clean cotton wiper, G00034 and clean the airplane mating surface again.
- (d) Do these two steps above until the airplane mating surface is clean and dry.

SUBTASK 23-24-02-100-003

(2) If the mating surface has corrosion or other damage, or if the airplane mating surface has no alodine, then do these steps to prepare the airplane mating surface:

NOTE: An alternative installation procedure is to apply corrosion inhibiting compound, G00009 on an airplane mating surface that has no alodine.

- (a) If there is corrosion, then, do this task: Removal and Control of Corrosion for Aluminum and Aluminum Alloys, TASK 51-21-31-350-801.
- (b) Apply a layer of Alodine 1200S coating, C50005 to the airplane mating surface. To apply the alodine, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.

SUBTASK 23-24-02-420-001

(3) Do these steps to install the ELT antenna [1]:

- (a) Examine the coaxial connectors for dirt and damage.
- (b) Connect the coaxial connectors to the antenna [1].
- (c) Apply a layer of sealant, A00247 to the shank and threads of 5 of the 6 bolts [2].

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- (d) Put the ELT antenna [1] in its position and install the 5 bolts [2].

NOTE: Leave one of the 6 bolts [2] out to do an electrical bond check.

- (e) Use bonding meter, COM-1550 to measure the resistance between the antenna base and the airplane skin.

NOTE: Use the empty bolt hole to get access to the antenna [1] base.

- 1) Make sure the resistance is less than or equal to 0.005 ohm.

- (f) Apply a layer of sealant, A00247 to the shank and threads of the last bolt [2].

- (g) Install the last bolt [2].

G. Seal the ELT antenna

SUBTASK 23-24-02-390-001

- (1) Apply sealant, A00247 around the base of the antenna [1] to make a corrosion fillet seal. To apply the sealant, do this task: Fillet Seal Application, TASK 51-31-00-390-804.

H. ELT Antenna Installation Test

SUBTASK 23-24-02-710-001

- (1) Do this task: ELT - Operational Test, TASK 23-24-00-710-801-001.

————— **END OF TASK** —————

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EMERGENCY LOCATOR TRANSMITTER CONTROL PANEL - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the emergency locator transmitter (ELT) control panel.
- (2) An installation of the ELT control panel.

B. The ELT control panel is installed on the forward overhead panel, P5, in the flight compartment.

TASK 23-24-03-000-801

2. Emergency Locator Transmitter (ELT) Control Panel Removal

(Figure 401)

A. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ELT Control Panel	23-24-00-02-060	HAP 001-013, 015-026, 028
		23-24-00-03-025	HAP 029-054, 101-999

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Procedure

SUBTASK 23-24-03-860-001

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
F	14	C01180	INDICATOR MASTER DIM SECT 8

SUBTASK 23-24-03-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ELT CONTROL PANEL [1]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ELT CONTROL PANEL [1].

- (2) Before you touch the ELT Control Panel [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-24-03-020-002

- (3) Do these steps to remove the ELT Control Panel [1]:
 - (a) Loosen the four Quarter turn fasteners [2].
 - (b) Remove the ELT Control Panel [1] from the P5 overhead panel to get access to the Electrical Connector [3].
 - (c) Disconnect the Electrical Connector [3] from the rear of the ELT Control Panel [1].

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- (d) To install a protective cover on the Electrical Connector [3], do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

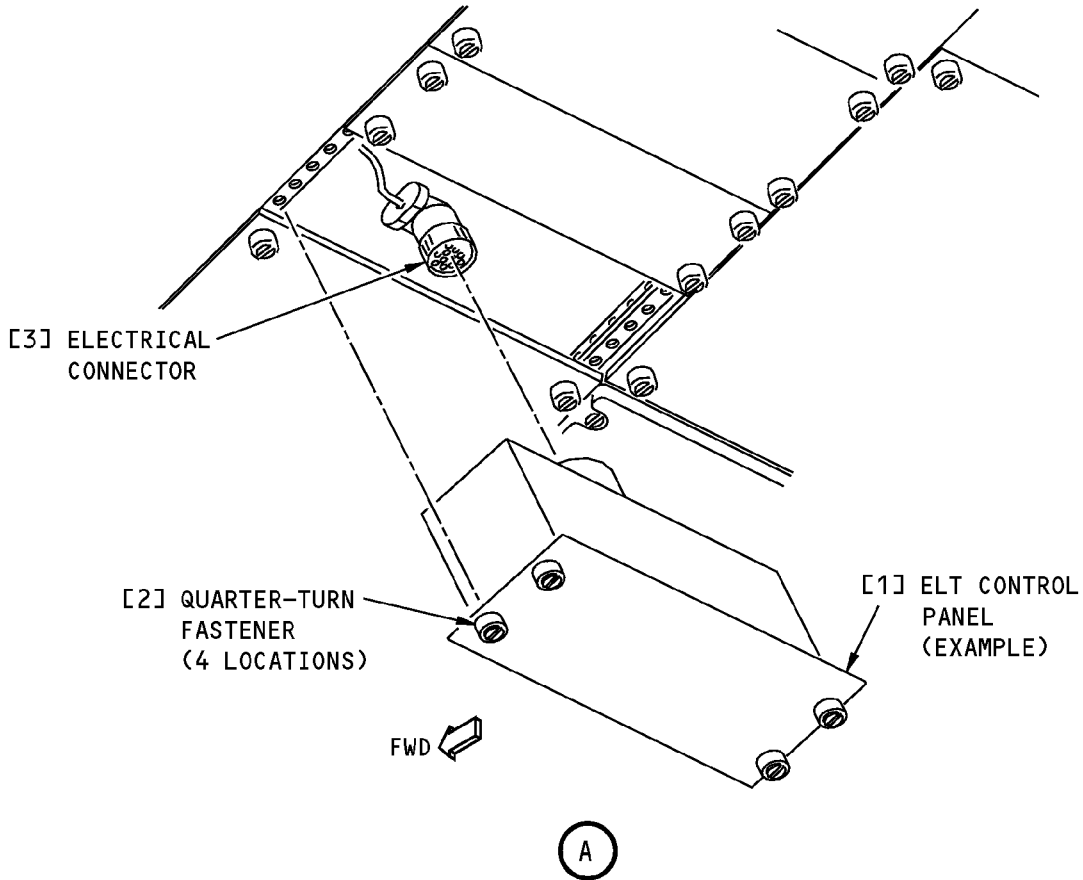
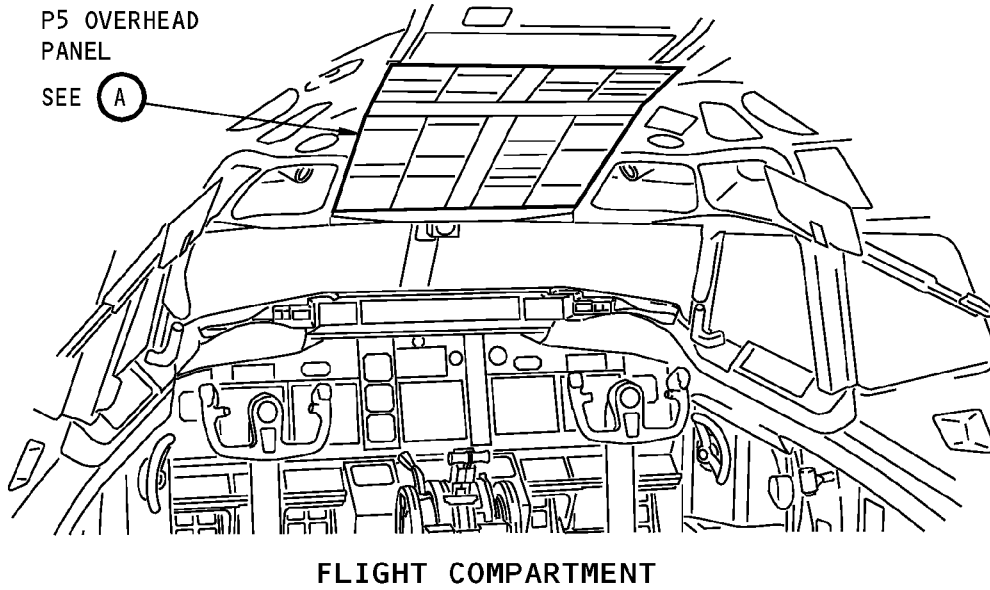
END OF TASK

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Emergency Locator Transmitter (ELT) Control Panel Installation
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TASK 23-24-03-400-801

3. Emergency Locator Transmitter (ELT) Control Panel Installation

(Figure 401)

A. References

Reference	Title
20-40-12-000-804	Conductive Dust Cap and Conductor Cover Removal (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-24-00-710-801-001	ELT - Operational Test (P/B 501)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ELT Control Panel	23-24-00-02-060	HAP 001-013, 015-026, 028
		23-24-00-03-025	HAP 029-054, 101-999

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Procedure

SUBTASK 23-24-03-860-002

- (1) Make sure that these circuit breakers are open:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
F	14	C01180	INDICATOR MASTER DIM SECT 8

SUBTASK 23-24-03-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ELT CONTROL PANEL [1]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ELT CONTROL PANEL [1].

- (2) Before you touch the ELT Control Panel [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-24-03-420-002

- (3) Do these steps to install the ELT Control Panel [1]:
 - (a) To remove the protective cover from the Electrical Connector [3], do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.
 - (b) Examine the Electrical Connector [3] for bent or broken pins, dirt, and damage.
 - (c) Connect the Electrical Connector [3].
 - (d) Install the ELT Control Panel [1] in its position on the P5 panel.
 - (e) Tighten the four Quarter turn fasteners [2].

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SUBTASK 23-24-03-860-003

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

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
F	14	C01180	INDICATOR MASTER DIM SECT 8

E. Installation Test

SUBTASK 23-24-03-860-004

(1) Do this task: ELT - Operational Test, TASK 23-24-00-710-801-001.

————— **END OF TASK** —————

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ACARS SYSTEM - ADJUSTMENT/TEST

HAP 1. General

HAP A. This procedure has these tasks:

- HAP (1) An operational test of the ARINC Communications Addressing and Reporting System (ACARS).
HAP (2) A system test of the ACARS.

HAP TASK 23-27-00-740-814-009

HAP 2. ACARS - Operational Test

HAP A. References

Table with 2 columns: Reference, Title. Rows include 23-27-33-470-802 (ACARS Communications Management Unit Software Installation with an Airborne Data Loader (ADL) (P/B 201)), 23-27-33-700-802 (ACARS Communications Management Unit (CMU) Software Configuration Check (P/B 201)), 24-22-00-860-811 (Supply Electrical Power (P/B 201)), 24-22-00-860-812 (Remove Electrical Power (P/B 201)).

HAP B. Location Zones

Table with 2 columns: Zone, Area. Rows include 117 (Electrical and Electronics Compartment - Left), 118 (Electrical and Electronics Compartment - Right).

HAP C. Procedure

HAP SUBTASK 23-27-00-860-123-009

- HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP SUBTASK 23-27-00-860-124-009

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

HAP F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Rows include HAP 031-036 (E, 7, C00744, ACARS MU AC), HAP 031-054, 101-999 (E, 8, C01483, CMU-1 AC), HAP (E, 9, C01500, CMU/ACARS DC).

HAP SUBTASK 23-27-00-710-017-009

- HAP (3) Do these steps to do a test of ACARS:

- HAP (a) Push and hold the TEST switch on the front of the ACARS Communications Management Unit (CMU) on the E4-1 shelf in the Electrical and Electronics compartment.
HAP (b) Make sure that all the lights on the front of the MU are on.
HAP (c) Release the switch and wait at least one minute.
HAP (d) Make sure that only the green MU PASS light remains on.
HAP (e) If the yellow LOAD SW light is on, then, do this task: ACARS Communications Management Unit Software Installation with an Airborne Data Loader (ADL), TASK 23-27-33-470-802.

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HAP 031-054, 101-999

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SUBTASK 23-27-00-750-002-009

HAP (4) Do this task: ACARS Communications Management Unit (CMU) Software Configuration
HAP Check, TASK 23-27-33-700-802.

SUBTASK 23-27-00-760-002-009

HAP (5) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

HAP
HAP

TASK 23-27-00-700-812-009

3. ACARS - System Test

A. General

- HAP (1) For the ACARS system to operate correctly, it must be linked to a remote ground station.
- HAP (2) For ACARS to link to the ground station through the VHF communication system, the airplane
HAP must be within range of the ground station. Also, the VHF antenna must have a clear view to the
HAP station tower.
- HAP (3) The ACARS ground station and network must also be operational.
- HAP (4) The system test is based on the default Boeing AOC software. If airline customized AOC
HAP software is loaded, there may be differences in MCDU screen formats and screen prompts.

B. References

Reference	Title
23-12-00-730-801	VHF Communication System - System Test (P/B 501)
23-27-33-470-802	ACARS Communications Management Unit Software Installation with an Airborne Data Loader (ADL) (P/B 201)
23-27-35-700-801	ACARS Airplane Personality Module (APM) Data Verification Check (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
31-31-00-730-801	Flight Data Recorder System - System Test (P/B 501)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
32-44-00-710-801	Parking Brake System - Operational Test (P/B 501)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
34-61-00-730-801	Flight Management Computer System - System Test (P/B 501)
52-11-00-700-804	Forward Entry Door System Test (P/B 501)
52-13-00-700-805	Aft Entry Door System Test (P/B 501)
52-31-00-700-801	Cargo Door System Test (P/B 501)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

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HAP D. Procedure

HAP SUBTASK 23-27-00-860-125-009

HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP SUBTASK 23-27-00-860-126-009

HAP (2) Set the Captain's clock to the current Greenwich mean time (GMT).

HAP SUBTASK 23-27-00-860-127-009

HAP (3) Make sure the IRS is aligned to the current position (latitude, longitude) (TASK 34-21-00-820-802 or TASK 34-21-00-820-801).

HAP SUBTASK 23-27-00-860-128-009

HAP (4) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-1

	<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
HAP	HAP 031-036			
HAP	E	7	C00744	ACARS MU AC
HAP	HAP 031-054, 101-999			
HAP	E	8	C01483	CMU-1 AC
HAP	E	9	C01500	CMU/ACARS DC

HAP SUBTASK 23-27-00-860-129-009

HAP (5) Make sure these systems are serviceable:

- HAP (a) The VHF communication system (TASK 23-12-00-730-801).
- HAP (b) The flight data recorder (FDR) system (TASK 31-31-00-730-801).
- HAP (c) The parking brake system (TASK 32-44-00-710-801).
- HAP (d) The flight management computer (FMC) system (TASK 34-61-00-730-801).
- HAP (e) The passenger doors system (TASK 52-11-00-700-804).
- HAP (f) The aft entry door system (TASK 52-13-00-700-805).
- HAP (g) The cargo door system (TASK 52-31-00-700-801).

HAP SUBTASK 23-27-00-710-025-009

HAP (6) Do this task: ACARS - Operational Test, TASK 23-27-00-740-814-009.

HAP SUBTASK 23-27-00-700-060-009

HAP (7) Do this task: ACARS Airplane Personality Module (APM) Data Verification Check, TASK 23-27-35-700-801

HAP SUBTASK 23-27-00-730-081-009

HAP (8) Do these steps to do the Initialization, Registry and Printer test:

- HAP (a) Push the MENU function key on both MCDUs.
 - HAP 1) Make sure the MENU page shows, with the < ACARS in the left position on line 2 of both displays.
 - HAP (b) Push the line select key (LSK) adjacent to the < ACARS prompt on MCDU-1.
 - HAP 1) Make sure the ACARS PREFLT MENU page shows on the display.
- NOTE:** Unless otherwise specified, all MCDU key selections are done on MCDU-1 and all pages and messages show on MCDU-1.
- HAP 2) If the message "ENTER AIRLINE ID" does not show on the MCDU, continue with step (c).

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- HAP 3) If the message "ENTER AIRLINE ID" shows on the MCDU, do these steps:
- HAP a) Push the LSK adjacent to the < MISC prompt.
- HAP < 1 > Make sure the ACARS MISC page shows on the display.
- HAP b) Push the LSK adjacent to the MAINT > prompt.
- HAP < 1 > Make sure the ACARS MAINTENANCE page shows on the display.
- HAP c) Use the MCDU keypad to enter "SERGE" into the MCDU scratchpad.
- HAP d) Push the top right LSK.
- HAP < 1 > Make sure the ACARS INIT page shows on the display.
- HAP e) Push the LSK adjacent to the < AIRLINE ID prompt.
- HAP < 1 > Make sure the ACARS AIRLINE ID INIT page shows on the display.
- HAP f) Push the LSK adjacent to the < SELECT prompt until the < SEL > prompt is adjacent
- HAP to the boxes on the line under the MANUAL prompt.
- HAP g) Use the MCDU keypad to enter the two character airline ID code into the MCDU
- HAP scratchpad.
- HAP (c) Push the LSK adjacent to the < MISC prompt.
- HAP 1) Make sure the ACARS MISC page shows on the display.
- HAP (d) Push the LSK adjacent to the MAINT > prompt.
- HAP 1) Make sure the ACARS MAINTENANCE pages shows on the display.
- HAP (e) Push the LSK adjacent to the < PART NUMBERS prompt.
- HAP 1) Make sure the ACARS PART NUMBERS page shows on the display.
- HAP 2) Make sure the ACARS CORE S/W, APP S/W and DB part numbers are correct.
- HAP 3) If any software part numbers are not correct, do this task: ACARS Communications
- HAP Management Unit Software Installation with an Airborne Data Loader (ADL),
- HAP TASK 23-27-33-470-802.
- HAP (f) Push the LSK adjacent to the PRINT > prompt.
- HAP 1) Make sure the printer prints the information that shows on the display.
- HAP NOTE: The print format is not the same as the display format.
- HAP 2) Make sure the printed aircraft registration number matches the registration number of
- HAP the airplane as shown on the captain's or first officer's main instrument panel placard.
- HAP (g) Push the LSK adjacent to the < MAINT MENU prompt to go back to the ACARS
- HAP MAINTENANCE page.
- HAP (h) Push the LSK adjacent to the < ACARS MENU prompt to go back to the ACARS PREFLT
- HAP MENU page.
- HAP (i) From the ACARS PREFLT MENU page, push the LSK adjacent to the < MISC prompt.
- HAP (j) From the ACARS MISC page, push the LSK adjacent to the < FREQUENCY prompt.
- HAP 1) Make sure the ACARS DATA FREQ page shows on the display.
- HAP 2) Make sure the data frequency shows below the ACARS DATA FREQ prompt.
- HAP 3) Make sure that OPERATING IN VDL M2 shows centered on line 5 of the MCDU display.
- HAP (k) Push the LSK adjacent to the < ACARS MENU prompt to go back to the ACARS PREFLT
- HAP MENU page..

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HAP SUBTASK 23-27-00-730-082-009

HAP (9) Do these steps to do the VHF link test:

HAP (a) From the ACARS PREFLT MENU page, push the LSK adjacent to the < MISC prompt.

HAP (b) From the ACARS MISC page, push the LSK adjacent to the MAINT > prompt.

HAP (c) From the ACARS MAINTENANCE page, push the LSK adjacent to the < TEST prompt.

HAP 1) Make sure the ACARS TEST page 1 shows on the display.

HAP (d) Push the LSK adjacent to the < INITIATE prompt under the VHF LINK prompt.

HAP 1) Make sure the word INITIATE, then the word TEST, then the word PASS, then the word
HAP INITIATE shows on the display.

HAP SUBTASK 23-27-00-730-086-009

HAP (10) Do these steps to do the FMC and Registry test:

HAP (a) From the ACARS PREFLT MENU page, push the LSK adjacent to the < PREFLIGHT prompt.

HAP 1) Make sure the ACARS PREFLIGHT INIT page shows on the display.

HAP (b) On MCDU-2, push the RTE function key.

HAP (c) On MCDU-2, enter DEMO1 in the scratchpad.

HAP (d) On MCDU-2, push the LSK adjacent to < CO ROUTE prompt.

HAP (e) On MCDU-2, type a valid flight number in the scratchpad.

HAP (f) On MCDU-2, push the LSK adjacent to the FLT NO. prompt.

HAP (g) On MCDU-2, push the LSK adjacent to the < ACTIVATE prompt.

HAP (h) On MCDU-2, push the EXEC function key.

HAP 1) Make sure the ORIGIN, DESTINATION and FLIGHT number data that shows on the
HAP MCDU-2 ROUTE page also shows on the ACARS PREFLIGHT INIT page on MCDU-1.

HAP (i) On MCDU-2, push the MENU function key.

HAP (j) On MCDU-1, push the LSK adjacent to the < ACARS MENU prompt.

HAP NOTE: Unless otherwise specified, all MCDU key selections are done on MCDU-1 and all
HAP pages and messages show on MCDU-1.

HAP (k) From the ACARS PREFLT MENU page, push the LSK adjacent to the < MISC prompt.

HAP (l) From the ACARS MISC page, push the LSK adjacent to the MAINT > prompt.

HAP (m) From the ACARS MAINTENANCE page, push the LSK adjacent to the < STATUS prompt.

HAP 1) Make sure the ACARS STATUS page shows on the display.

HAP (n) Push the LSK adjacent to the < RCV 429 DATA prompt.

HAP 1) Make sure the ACARS RCV 429 DATA page shows.

HAP 2) Make sure the airline registration number that shows on the line under the A/C REG
HAP prompt is the same as the registration number on either the captain's or first officer's
HAP main instrument panel placard

HAP (o) Push the LSK adjacent to the < STATUS MENU prompt to go back to the ACARS STATUS
HAP page.

HAP SUBTASK 23-27-00-730-118

HAP (11) Do these steps to do the Digital Interface test.

HAP (a) From the ACARS STATUS page, push the LSK adjacent to the < LRU prompt.

HAP 1) Make sure the ACARS LRU STATUS page 1 shows.

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HAP 2) Make sure all interfaced LRUs listed on page 1 show ACTIVE adjacent to the LRU
HAP prompt.

HAP NOTE: If an LRU is not interfaced to the ACARS CMU, "NOT INSTALL" shows
HAP adjacent to the LRU prompt.

HAP (b) Push the NEXT PAGE function key

HAP 1) Make sure the ACARS LRU STATUS page 2 shows.

HAP 2) Make sure all interfaced LRUs listed on page 2 show ACTIVE adjacent to the LRU
HAP prompt.

HAP NOTE: If an LRU is not interfaced to the ACARS CMU, "NOT INSTALL" shows
HAP adjacent to the LRU prompt.

HAP (c) Push the NEXT PAGE function key

HAP 1) Make sure the ACARS LRU STATUS page 3 shows.

HAP 2) Make sure all interfaced LRUs listed on page 3 show ACTIVE adjacent to the LRU
HAP prompt.

HAP NOTE: If an LRU is not interfaced to the ACARS CMU, "NOT INSTALL" shows
HAP adjacent to the LRU prompt.

HAP (d) Push the NEXT PAGE function key

HAP 1) Make sure the ACARS LRU STATUS page 4 shows.

HAP 2) Make sure all interfaced LRUs listed on page 4 show ACTIVE adjacent to the LRU
HAP prompt.

HAP NOTE: If an LRU is not interfaced to the ACARS CMU, "NOT INSTALL" shows
HAP adjacent to the LRU prompt.

HAP (e) Push the NEXT PAGE function key

HAP 1) Make sure the ACARS LRU STATUS page 5 shows.

HAP 2) Make sure all interfaced LRUs listed on page 5 show ACTIVE adjacent to the LRU
HAP prompt.

HAP NOTE: If an LRU is not interfaced to the ACARS CMU, "NOT INSTALL" shows
HAP adjacent to the LRU prompt.

HAP (f) Push the NEXT PAGE function key

HAP 1) Make sure the ACARS LRU STATUS page 6 shows.

HAP 2) Make sure all interfaced LRUs listed on page 6 show ACTIVE adjacent to the LRU
HAP prompt.

HAP NOTE: If an LRU is not interfaced to the ACARS CMU, "NOT INSTALL" shows
HAP adjacent to the LRU prompt.

HAP (g) Push the LSK adjacent to the < STATUS MENU prompt to go back to the ACARS STATUS
HAP page.

HAP (h) From the ACARS STATUS menu, push the LSK adjacent to the < MAINT MENU prompt to
HAP go back to the ACARS MAINTENANCE MENU.

HAP (i) From the ACARS MAINTENANCE menu, push the LSK adjacent to the < ACARS MENU
HAP prompt to go back to the ACARS PREFLT MENU.

SUBTASK 23-27-00-730-087-009

HAP (12) Do these steps to do the OOOI sensor test:

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- HAP (a) From the ACARS PREFLT MENU page, push the LSK adjacent to the < MISC prompt.
- HAP (b) From the ACARS MISC page, push the LSK adjacent to the < STATUS prompt.
- HAP (c) From page 1 of the ACARS OOOI STATUS page, push the NEXT PAGE function key two times.
- HAP 1) Make sure the ACARS OOOI STATUS page 3 shows on the display.
- HAP NOTE: The following steps test each OOOI parameter. If the OOOI parameters have been working correctly and the ACARS Communications Management Unit (CMU) was not removed or replaced, these steps are optional.
- HAP (d) Open the left forward entry door.
- HAP 1) Make sure OPEN shows adjacent to the LH FWD CAB prompt.
- HAP (e) Close the left forward entry door.
- HAP 1) Make sure CLOSED shows adjacent to the LH FWD CAB prompt.
- HAP (f) Open the left aft entry door.
- HAP 1) Make sure OPEN shows adjacent to the LH AFT CAB prompt.
- HAP (g) Close the left aft entry door.
- HAP 1) Make sure CLOSED shows adjacent to the LH AFT CAB prompt.
- HAP (h) Open the right forward door.
- HAP 1) Make sure OPEN shows adjacent to the SERVICE prompt.
- HAP (i) Close the right forward door.
- HAP 1) Make sure CLOSED shows adjacent to the SERVICE prompt.
- HAP (j) Open the right aft door.
- HAP 1) Make sure OPEN shows adjacent to the SERVICE prompt.
- HAP (k) Close the right aft door.
- HAP 1) Make sure CLOSED shows adjacent to the SERVICE prompt.
- HAP (l) Open the forward cargo compartment door.
- HAP 1) Make sure OPEN shows adjacent to the CARGO/AV prompt.
- HAP (m) Close the forward cargo compartment door.
- HAP 1) Make sure CLOSED shows adjacent to the CARGO/AV prompt.
- HAP (n) Push the PREV PAGE function key.
- HAP 1) Make sure the ACARS OOOI STATUS page 2 shows on the display.
- HAP 2) Make sure SET shows adjacent to the PRK BRAKE prompt.
- HAP **WARNING**: MAKE SURE THAT THE AIRPLANE WILL NOT MOVE BEFORE YOU RELEASE THE PARKING BRAKE. IF THE AIRPLANE MOVES, IT CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.
- HAP (o) Release the parking brake.
- HAP 1) Make sure REL shows adjacent to the PRK BRAKE prompt.
- HAP (p) Set the parking brake.
- HAP 1) Make sure SET shows adjacent to the PRK BRAKE prompt.
- HAP (q) Make sure GND shows adjacent to the STRUT prompt.
- HAP (r) Do these steps to test the STRUT AIR/GND switch.

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- HAP 1) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.
- HAP 2) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.
 - HAP a) Make sure AIR shows adjacent to the STRUT prompt.
- HAP 3) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.
- HAP 4) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802
 - HAP a) Make sure GND shows adjacent to the STRUT prompt.
 - HAP (s) Push the LSK adjacent to the < ACARS MENU prompt.
- HAP SUBTASK 23-27-00-860-130-009
- HAP (13) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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ACARS SYSTEM - ADJUSTMENT/TEST

HAP

HAP

1. General

HAP

A. This procedure has these tasks:

HAP

(1) An operational test of the ARINC Communications Addressing and Reporting System (ACARS).

HAP

(2) A system test of the ACARS.

HAP

TASK 23-27-00-710-803

HAP

2. ACARS - Operational Test

HAP

A. General

HAP

(1) For the ACARS system to operate correctly, it must be linked to a remote ground station.

HAP

(2) For ACARS to link to the ground station through the VHF communication system, the airplane must be within range of the ground station. Also, the VHF antenna must have a clear view to the station tower.

HAP

(3) The ACARS ground station and network must also be operational.

HAP

HAP

HAP

B. References

HAP

Reference	Title
23-27-32-470-801	ACARS Software Installation with a Portable Data Loader (PDL) (P/B 201)
23-27-32-700-801	ACARS Software Configuration Check (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

HAP

HAP

HAP

HAP

HAP

C. Location Zones

HAP

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

HAP

HAP

HAP

D. Procedure

HAP

SUBTASK 23-27-00-861-003

HAP

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP

SUBTASK 23-27-00-865-003

HAP

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

HAP

F/O Electrical System Panel, P6-1

HAP

Row	Col	Number	Name
E	7	C00744	ACARS MU AC
E	8	C00743	ACARS MU DC

HAP

HAP

HAP

SUBTASK 23-27-00-710-026

HAP

(3) Do these steps to do a test of ACARS:

HAP

(a) Push and hold the TEST switch on the front of the ACARS Management Unit (MU) on the E3-3 shelf in the Electrical and Electronics compartment.

HAP

1) Make sure that all the lights on the front of the MU are on.

HAP

(b) Release the switch and wait at least one minute.

HAP

1) Make sure that only the green MU PASS light remains on.

HAP

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HAP (c) If the yellow LOAD SW light is on, then do this task: ACARS Software Installation with a
HAP Portable Data Loader (PDL), TASK 23-27-32-470-801.

HAP SUBTASK 23-27-00-710-027

HAP (4) Do this task: ACARS Software Configuration Check, TASK 23-27-32-700-801.

HAP SUBTASK 23-27-00-862-003

HAP (5) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

HAP TASK 23-27-00-730-809

3. ACARS - System Test

A. References

Table with 2 columns: Reference, Title. Lists various tasks and their titles such as VHF Communication System - System Test, ACARS Software Installation with a Portable Data Loader (PDL), etc.

B. Location Zones

Table with 2 columns: Zone, Area. Lists zones 211 (Flight Compartment - Left) and 212 (Flight Compartment - Right).

C. Procedure

HAP SUBTASK 23-27-00-861-004

HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP SUBTASK 23-27-00-860-179

HAP (2) Set the Captain's clock to the current Greenwich mean time (GMT).

HAP SUBTASK 23-27-00-860-180

HAP (3) Make sure the IRS is aligned to the current position (latitude, longitude) (TASK 34-21-00-820-802
HAP or TASK 34-21-00-820-801).

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HAP SUBTASK 23-27-00-865-004

HAP (4) Make sure that these circuit breakers are closed:

HAP F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C00744	ACARS MU AC
E	8	C00743	ACARS MU DC

HAP SUBTASK 23-27-00-860-181

HAP (5) Make sure these systems are serviceable:

- HAP (a) The VHF communication system (TASK 23-12-00-730-801).
- HAP (b) The flight data recorder (FDR) system (TASK 31-31-00-730-801).
- HAP (c) The parking brake system (TASK 32-44-00-710-801).
- HAP (d) The flight management computer (FMC) system (TASK 34-61-00-730-801).
- HAP (e) The passenger doors system (TASK 52-11-00-700-804).
- HAP (f) The aft entry door system (TASK 52-13-00-700-805).
- HAP (g) The cargo door system (TASK 52-31-00-700-801).

HAP SUBTASK 23-27-00-710-028

HAP (6) Do this task: ACARS - Operational Test, TASK 23-27-00-710-803.

HAP SUBTASK 23-27-00-730-123

HAP (7) Do these steps to do the Initialization, Registry and Printer test:

- HAP (a) Push the MENU function key on both MCDUs.
 - HAP 1) Make sure <DLK shows on both MCDU displays.
- HAP (b) Push the line select key (LSK) adjacent to the <DLK prompt on both MCDU displays.
 - HAP 1) Make sure the DATALINK (DLK) MENU page shows both MCDU displays.
- HAP (c) On MCDU-1, push the LSK adjacent to the <ATC MENU prompt.
 - HAP 1) On MCDU-2, make sure the "<" to the left of the ATC MENU prompt goes away.
- HAP (d) On MCDU-1, push the LSK adjacent to the AOC MENU > prompt.
 - HAP 1) On MCDU-2, make sure the ">" to the right of the AOC MENU prompt goes away.
- HAP (e) On MCDU-2, push the LSK adjacent to the <ATC MENU prompt.
 - HAP 1) On MCDU-1, make sure the "<" to the left of the ATC MENU prompt goes away.
- HAP (f) On MCDU-2, push the LSK adjacent to the AOC MENU > prompt.
 - HAP 1) On MCDU-1, make sure the ">" to the right of the AOC MENU prompt goes away.
- HAP (g) Push the LSK adjacent to the MAINT > prompt.
 - HAP 1) Make sure the CMU MAINTENANCE pages shows on the display.
- HAP (h) Push the LSK adjacent to the <PART NUMBERS prompt.
 - HAP 1) Make sure the CMU PART NUMBERS page 1 of 2 shows on the display.
 - HAP 2) Make sure the hardware (HW), core software (CORE SW), application software (APP SW), ATC database (ATC DB) and AOC database (AOC DB) part numbers are correct.
 - HAP 3) If any software part numbers are not correct, do this task: ACARS Software Installation with a Portable Data Loader (PDL), TASK 23-27-32-470-801.
- HAP (i) Push the LSK adjacent to the PRINT > prompt.

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- HAP 1) Make sure the printer prints the information that shows on the display.
- HAP NOTE: The print format is not the same as the display format.
- HAP 2) Make sure the printed aircraft registration number matches the registration number of
HAP the airplane as shown on the captains or first officer's main instrument panel placard.
- HAP (j) Push the LSK adjacent to the < MAINT MENU prompt.
- HAP (k) From the CMU MAINTENANCE page, enter SERGE into the MCDU scratchpad and push
HAP LSK 1R (no prompt).
- HAP 1) Make sure the CMU INIT page shows on the display.
- HAP (l) Push the LSK adjacent to the < AIRLINE ID prompt.
- HAP 1) Make sure the CMU AIRLINE ID INIT page shows on the display.
- HAP 2) Make sure the airline ID is correct.
- HAP (m) Push the LSK adjacent to the < INIT MENU prompt.
- HAP (n) From the CMU INIT page, push the LSK adjacent to the < A/C CONFIG prompt.
- HAP 1) Make sure the CMU A/C CONFIG INIT page 1 of 3 shows on the display.
- HAP 2) The transponder address that is sent from the ATC Transponder shows on the line
HAP under the XPONDER ADDR(A1-A24) prompt.
- HAP 3) Make sure the ICAO address that shows on the line under the ICAO ADDR(A1-A24)
HAP prompt is correct.
- HAP (o) Push the NEXT PAGE function key.
- HAP 1) Make sure the CMU A/C CONFIG INIT page 2 of 3 shows on the display.
- HAP 2) Make sure the configuration shown on the display is correct:
- HAP • HYBRID 724B
 - HAP • VDR1 NOT INSTALLED
 - HAP • VDR2 NOT INSTALLED
 - HAP • VDR3 INSTALLED
 - HAP • B738
- HAP (p) Push the NEXT PAGE function key.
- HAP 1) Make sure the CMU A/C CONFIG INIT page 3 of 3 shows on the display.
- HAP 2) Make sure the configuration shown on the display is correct:
- HAP • PRT INSTALLED
 - HAP • TP9G,H NOT USED 4 CPDLC
 - HAP • CLOSED TP9G,H FOR AOC
 - HAP • SET FOR AOC ONLY
- HAP (q) If a configuration setting is incorrect, push the LSK adjacent to the configuration item until
HAP the correct configuration shows, then push the LSK adjacent to the STORE AND RESET >
HAP prompt.
- HAP (r) The <DLK prompt should appear on the MCDU MAIN menu after approximately 4 to 5
HAP minutes.
- HAP SUBTASK 23-27-00-730-124
- HAP (8) Do these steps to do the VHF link test:
- HAP (a) Push the LSK adjacent to the <DLK prompt.
- HAP (b) From the DATALINK (DLK) MENU page, push the LSK adjacent to the MAINT > prompt.

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- HAP (c) From the CMU MAINTENANCE page, push the LSK adjacent to the <TEST prompt.
- HAP 1) Make sure the CMU TEST page shows on the display.
- HAP (d) Push the LSK adjacent to the <INITIATE prompt under the VHF LINK prompt.
- HAP 1) Make sure the word INITIATE, then the word TEST, then the word PASS, then the word INITIATE shows on the display.
- HAP (e) Push the LSK adjacent to the <INITIATE prompt under the PRINTER prompt.
- HAP 1) Make sure the word INITIATE, then the word TEST, then the word PASS, then the word INITIATE shows on the display.
- HAP (f) Push the LSK adjacent to the <INITIATE prompt under the RAM TEST prompt.
- HAP 1) Make sure the word INITIATE, then the word TEST, then the word PASS, then the word INITIATE shows on the display.
- HAP (g) Push the LSK adjacent to the LRUS > prompt.
- HAP 1) Make sure the AOC LRU TESTS page 1 of 2 shows.
- HAP (h) Push the LSK adjacent to the <INITIATE prompt under the FMC prompt.
- HAP 1) Make sure the word INITIATE, then the word TEST, then the word PASS, then the word INITIATE shows on the display.
- HAP (i) Push the NEXT PAGE function key.
- HAP 1) Make sure the AOC LRU TESTS page 2 of 2 shows.
- HAP (j) Push the LSK adjacent to the <INITIATE prompt under the VDR 3 prompt.
- HAP 1) Make sure the word INITIATE, then the word TEST, then the word PASS, then the word INITIATE shows on the display.
- HAP (k) Push the LSK adjacent to the <TEST MENU prompt to go back to the CMU TEST page.
- HAP (l) Push the LSK adjacent to the <MAINT MENU prompt to go back to the CMU MAINTENANCE page.
- HAP SUBTASK 23-27-00-730-126
- HAP (9) Do these steps to do the Interface Status Verification test.
- HAP (a) Push the LSK adjacent to the <STATUS prompt.
- HAP 1) Make sure the CMU STATUS page shows.
- HAP (b) Push the LSK adjacent to the <RCV 429 DATA prompt.
- HAP 1) Make sure the CMU RCV 429 DATA page shows on the display.
- HAP 2) Make sure the airplane registration number shown on the line under the A/C REG prompt is correct.
- HAP 3) Make sure the time shown on the line under the UTC BC prompt is correct.
- HAP 4) Make sure the date shown on the line under the DATE BC prompt is correct.
- HAP (c) Push the LSK adjacent to the <STATUS MENU prompt to go back to the CMU STATUS page.
- HAP (d) Push the LSK adjacent to the <LRU prompt.
- HAP 1) Make sure the CMU LRU STATUS page 1 of 6 shows.
- HAP 2) Make sure the LRU STATUS is as follows:
- HAP a) FMC, PRINTER, ACMS and MCDU L show ACTIVE.
- HAP b) HFDR 1 shows NOT INSTALL.

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- HAP c) SPARE 2, SPARE 3 and SPARE 5 show NO 429 DATA.
- HAP (e) Push the NEXT PAGE function key
 - HAP 1) Make sure the CMU LRU STATUS page 2 of 6 shows.
 - HAP 2) Make sure the LRU STATUS is as follows:
 - HAP a) MCDU R, AIRSHOW, FMC 02 BC and SPARE-6 show ACTIVE.
 - HAP b) SDU 2 LS shows NOT INSTALL.
 - HAP c) SDU 1 LS, MCDU 3 and CABIN 2 show INACTIVE.
 - HAP (f) Push the NEXT PAGE function key
 - HAP 1) Make sure the CMU LRU STATUS page 3 of 6 shows.
 - HAP 2) Make sure the LRU STATUS is as follows:
 - HAP a) ADL, SPARE 7, SPARE 8 and SPARE 9 show NO 429 DATA.
 - HAP b) The 4 SPAREs (20, 21, 22 and 23) show NOT INSTALL
 - HAP (g) Push the NEXT PAGE function key
 - HAP 1) Make sure the CMU LRU STATUS page 4 of 6 shows.
 - HAP 2) Make sure the LRU STATUS is as follows:
 - HAP a) The two SPAREs, VDR 1 and VDR 2 show NOT INSTALL.
 - HAP b) XPDR 1, VDR 3 and XPDR 2 show ACTIVE.
 - HAP c) SDU 1 HS shows INACTIVE.
 - HAP (h) Open this circuit breaker:

CAPT Electrical System Panel, P18-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

 - HAP 1) Make sure XPDR 1 changes from ACTIVE to INACTIVE.
 - HAP (i) Close this circuit breaker:

CAPT Electrical System Panel, P18-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

 - HAP 1) Make sure XPDR 1 changes from INACTIVE to ACTIVE.
 - HAP (j) Open this circuit breaker:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2

 - HAP 1) Make sure XPDR 2 changes from ACTIVE to INACTIVE.
 - HAP (k) Close this circuit breaker:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2

 - HAP 1) Make sure XPDR 2 changes from INACTIVE to ACTIVE.
 - HAP (l) Push the NEXT PAGE function key

EFFECTIVITY

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- HAP 1) Make sure the CMU LRU STATUS page 5 of 6 shows.
- HAP 2) Make sure the LRU STATUS is as follows:
 - HAP a) SDU 2 LS shows INACTIVE.
 - HAP b) All others show NOT INSTALL.
- HAP (m) Push the NEXT PAGE function key
 - HAP 1) Make sure the CMU LRU STATUS page 6 of 6 shows.
 - HAP 2) Make sure the LRU STATUS is as follows:
 - HAP a) GPS shows ACTIVE.
 - HAP b) All others show NOT INSTALL.
- HAP (n) Open this circuit breaker:
 - HAP CAPT Electrical System Panel, P18-1
 - HAP

Row	Col	Number	Name
HAP 001, 004-013, 015-026, 028-030			
A	2	C01479	RADIO NAVIGATION MMR 1
 - HAP **HAP 001-013, 015-026, 028-030**
 - HAP 1) Make sure GPS changes from ACTIVE to INACTIVE.
- HAP (o) Close this circuit breaker:
 - HAP CAPT Electrical System Panel, P18-1
 - HAP

Row	Col	Number	Name
HAP 001, 004-013, 015-026, 028-030			
A	2	C01479	RADIO NAVIGATION MMR 1
 - HAP **HAP 001-013, 015-026, 028-030**
 - HAP 1) Make sure GPS changes from INACTIVE to ACTIVE.
- HAP (p) Push the LSK adjacent to the < STATUS MENU prompt to go back to the CMU STATUS page.
- HAP (q) From the CMU STATUS menu, push the LSK adjacent to the < DISCRETES prompt.
 - HAP 1) Make sure the CMU DISCRETE page 1 of 5 shows on the display.
- HAP (r) Push the NEXT PAGE function key more than once until the CMU DISCRETE page 5 of 5 shows on the display.
 - HAP 1) Make sure that the state of these discretets agrees with the airplane configuration:

SCREEN DISPLAY	SENSOR	PIN	STATE
OOOI SENSOR 1	Parking Brake	TP15A	0 = SET 1 = RELEASED
OOOI SENSOR 2	Fwd Entry Door	TP15B	0 = OPEN 1 = CLOSED
OOOI SENSOR 3	Aft Entry Door	TP15C	0 = OPEN 1 = CLOSED
OOOI SENSOR 4	not used	TP15D	n/a
OOOI SENSOR 5	not used	TP15E	n/a

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(Continued)

HAP	SCREEN DISPLAY	SENSOR	PIN	STATE
HAP	OOOI SENSOR 6	not used	TP15F	n/a
HAP HAP	OOOI SENSOR 7	Cargo/EE Doors	TP15G	0 = OPEN 1 = CLOSED
HAP HAP	OOOI SENSOR 8	Service Doors	TP15H	0 = OPEN 1 = CLOSED
HAP HAP	STRUT SENSOR	Air/Ground Switch	TP15J	0 = ON GROUND 1 = IN AIR

HAP (s) Push the LSK adjacent to the < STATUS MENU prompt to go back to the CMU STATUS
HAP menu.

HAP SUBTASK 23-27-00-730-127

HAP (10) Do these steps to do the CMU COMM STATUS test:

HAP (a) From the CMU STATUS menu, push the LSK adjacent to the VDR 3> prompt.

HAP 1) Make sure the AOC VDR 3 STATUS page shows on the display.

HAP 2) Make sure the part numbers shown agree with the software part numbers from the
HAP VDR front panel.

HAP 3) Make sure the VDR and ANTENNA show status of OK.

HAP 4) Make sure the VSWR value is within the allowable range.

HAP (b) Push the LSK adjacent to the < STATUS MENU prompt to go back to the CMU STATUS
HAP page.

HAP (c) Push the LSK adjacent to the < MAINT MENU prompt to go back to the CMU
HAP MAINTENANCE page.

HAP (d) From the CMU MAINTENANCE page, push the LSK adjacent to the < COMM prompt.

HAP 1) Make sure the CMU COMM STATUS page shows on the display.

HAP 2) Make sure that ATN/AOA shows as the status for VHF 3.

HAP (e) Push the LSK adjacent to the < MAINT MENU prompt to go back to the CMU
HAP MAINTENANCE page.

HAP (f) From the CMU MAINTENANCE page, enter SERGE into the MCDU scratchpad and push
HAP LSK 1R (no prompt).

HAP 1) Make sure the CMU INIT page shows on the display.

HAP (g) Push the LSK adjacent to the < UTC prompt.

HAP 1) Make sure the CMU UTC/DATE INIT page shows on the display.

HAP 2) Make sure the A/C UTC and A/C DATE values are updated from the #1 Multimode
HAP Receiver (MMR-1).

HAP (h) Push the LSK adjacent to the < DLK MENU prompt to go back to the DATALINK (DLK)
HAP MENU page.

HAP SUBTASK 23-27-00-730-132

HAP (11) Do steps that follow to do the OOOI Analog Input Test.

HAP (a) From the DATALINK (DLK) MENU, push the LSK adjacent to the AOC MENU> prompt.

HAP (b) Push the LSK adjacent to the < TECHLOG prompt.

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- HAP (c) Push the LSK adjacent to the < MISC prompt.
- HAP 1) Make sure the AOC MISC page shows on the display.
- HAP (d) Push the LSK adjacent to the < FREQUENCY prompt.
- HAP 1) Make sure the AOC DATA FREQ page shows
- HAP 2) Make sure the frequency that shows on the line under the screen title is the data
- HAP frequency for the geographic area where the airplane is located.
- HAP 3) Make sure OPERATING IN VDL M2 shows on the display.
- HAP (e) Push the LSK adjacent to the < ACARS MENU prompt.
- HAP (f) From the DATALINK (DLK) MENU, push the LSK adjacent to the AOC MENU > prompt.
- HAP (g) Push the LSK adjacent to the < TECHLOG prompt.
- HAP (h) From the AOC MISC page, push the LSK adjacent to the < STATUS prompt.
- HAP 1) Make sure the AOC OOI STATUS page 1 of 3 shows on the display.
- HAP (i) Push the NEXT PAGE function key twice.
- HAP 1) Make sure the AOC OOI STATUS page 3 of 3 shows on the display.
- HAP NOTE: The following steps test each OOOI parameter. If the OOOI parameters have
- HAP been working correctly and the ACARS Communications Management Unit
- HAP (CMU) was not removed or replaced, these steps are optional.
- HAP (j) Open the left forward entry door.
- HAP 1) Make sure OPEN shows adjacent to the LH FWD CAB prompt.
- HAP (k) Close the left forward entry door.
- HAP 1) Make sure CLOSED shows adjacent to the LH FWD CAB prompt.
- HAP (l) Close the left aft entry door.
- HAP 1) Make sure CLOSED shows adjacent to the LH AFT CAB prompt.
- HAP (m) Close all the cabin doors, cargo doors, EE and Section 41 bay doors.
- HAP 1) Make sure the FWD MAIN, AFT MAIN, CARGOEBAY, and SERVICE show CLOSED on
- HAP the display.
- HAP (n) Open the left forward entry door.
- HAP 1) Make sure OPEN shows adjacent to the FWD MAIN prompt.
- HAP (o) Close the left forward entry door.
- HAP 1) Make sure CLOSED shows adjacent to the FWD MAIN prompt.
- HAP (p) Open the right forward galley door.
- HAP 1) Make sure OPEN shows adjacent to the SERVICE prompt.
- HAP (q) Close the right forward galley door.
- HAP 1) Make sure CLOSED shows adjacent to the SERVICE prompt.
- HAP (r) Open the left aft entry door.
- HAP 1) Make sure OPEN shows adjacent to the AFT MAIN prompt.
- HAP (s) Close the left aft entry door.
- HAP 1) Make sure CLOSED shows adjacent to the AFT MAIN prompt.
- HAP (t) Open the right aft galley door.
- HAP 1) Make sure OPEN shows adjacent to the SERVICE prompt.

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- HAP (u) Close the right aft galley door.
 - HAP 1) Make sure CLOSED shows adjacent to the SERVICE prompt.
- HAP (v) Open the forward access compartment door.
 - HAP 1) Make sure OPEN shows adjacent to the CARGOEBAY prompt.
- HAP (w) Close the forward access compartment door.
 - HAP 1) Make sure CLOSED shows adjacent to the CARGOEBAY prompt.
- HAP (x) Open the E/E compartment door.
 - HAP 1) Make sure OPEN shows adjacent to the CARGOEBAY prompt.
- HAP (y) Close the E/E cargo compartment door.
 - HAP 1) Make sure CLOSED shows adjacent to the CARGOEBAY prompt.
- HAP (z) Open the forward cargo compartment door.
 - HAP 1) Make sure OPEN shows adjacent to the CARGOEBAY prompt.
- HAP (aa) Close the forward cargo compartment door.
 - HAP 1) Make sure CLOSED shows adjacent to the CARGOEBAY prompt.
- HAP (ab) Open the aft cargo compartment door.
 - HAP 1) Make sure OPEN shows adjacent to the CARGOEBAY prompt.
- HAP (ac) Close the aft cargo compartment door.
 - HAP 1) Make sure CLOSED shows adjacent to the CARGOEBAY prompt.
- HAP (ad) Make sure SET shows adjacent to the PRK BRAKE prompt.

WARNING: MAKE SURE THAT THE AIRPLANE WILL NOT MOVE BEFORE YOU RELEASE THE PARKING BRAKE. IF THE AIRPLANE MOVES, IT CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- HAP (ae) Release the parking brake.
 - HAP 1) Make sure RELEASED shows adjacent to the PRK BRAKE prompt.
- HAP (af) Set the parking brake.
 - HAP 1) Make sure SET shows adjacent to the PRK BRAKE prompt.
- HAP (ag) Make sure ON GROUND shows adjacent to the STRUT prompt.

NOTE: Before placing the airplane in air mode, make sure that all non required aircraft systems that may be energized in air mode are deactivated (Probe Heat, Master Drain Heat, Control Surfaces (Hydraulics, etc..))

- HAP (ah) Do these steps to test the STRUT switch.
 - HAP 1) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.
 - HAP 2) Do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.
 - HAP a) Make sure AIRBORNE shows adjacent to the STRUT prompt.
 - HAP 3) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.
 - HAP 4) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802
 - HAP a) Make sure ON GROUND shows adjacent to the STRUT prompt.
- HAP (ai) Push the LSK adjacent to the < ACARS MENU prompt.

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HAP

SUBTASK 23-27-00-862-004

HAP

(12) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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ACARS MANAGEMENT UNIT (MU) - MAINTENANCE PRACTICES

HAP

HAP

1. General

HAP

A. This procedure has these tasks:

HAP

(1) A software configuration check for the ACARS Management Unit.

HAP

(2) An installation of the ACARS software with a portable data loader.

HAP

TASK 23-27-32-700-801

HAP

2. ACARS Software Configuration Check

HAP

A. General

HAP

(1) This software configuration check makes sure that ACARS has the correct software loaded.

HAP

(2) A Flight Management Control and Display Unit (CDU) is necessary for this procedure.

HAP

B. References

HAP

Reference

Title

HAP

24-22-00-860-811

Supply Electrical Power (P/B 201)

HAP

24-22-00-860-812

Remove Electrical Power (P/B 201)

HAP

C. Location Zones

HAP

Zone

Area

HAP

211

Flight Compartment - Left

HAP

212

Flight Compartment - Right

HAP

D. Procedure

HAP

SUBTASK 23-27-32-860-008

HAP

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP

SUBTASK 23-27-32-200-001

HAP

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

HAP

TASK 23-27-32-470-801

HAP

3. ACARS Software Installation with a Portable Data Loader (PDL)

HAP

A. General

HAP

(1) This procedure tells you how to install software in the aircraft communication addressing and reporting system (ACARS) with a portable data loader (PDL).

HAP

HAP

(2) The ACARS management unit must contain these pieces of software:

HAP

(a) Core and Application software.

HAP

(b) Airplane operational control (AOC) database software.

HAP

(c) Air Traffic Control (ATC) database software.

HAP

(3) A PDL and a control display unit (CDU) are necessary for this procedure. A data loader control panel and a PDL interface connector are also necessary. The data loader control panel is installed above the DATA TRANSFER UNIT RECEPTACLE connector on the P61 panel.

HAP

HAP

HAP

(4) A PDL is not a Boeing supplied part. Refer to the PDL supplier for instructions for operation. PDLs have a disk drive for software installation from disks. Some PDLs have an internal mass storage device. If the software is stored in the PDL, then disks are not necessary.

HAP

HAP

HAP

(5) Make sure the airplane is on the ground with the engines shutdown before you install the software.

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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HAP (6) To read about software installation times and data loaders, do this task: On-Airplane Software
 HAP Installation, TASK 20-15-11-400-801.

HAP B. References

Reference	Title
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

HAP C. Tools/Equipment

HAP **NOTE:** When more than one tool part number is listed under the same "Reference" number, the
 HAP tools shown are alternates to each other within the same airplane series. Tool part numbers
 HAP that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1915	Data Loader - ARINC 615 (Part #: 11615-20, Supplier: 0D4J3, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -ALL, -BBJ) (Part #: 2231560-1-B, Supplier: 98571, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: 30100, Supplier: 0BAW0, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: 460048 (MODEL 2766), Supplier: 07342, A/P Effectivity: 737-300, -400, -500, -600, -700, -700ER, -800, -BBJ) (Part #: 465130-01-01, Supplier: 30782, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: 800-0631, Supplier: 1JSZ6, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER) (Part #: 964-0400-024, Supplier: 97896, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: 964-0400-055, Supplier: 97896, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: CEI-715-DL-2, Supplier: 0BPH5, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: P2K-615A-05, Supplier: 0BAW0, A/P Effectivity: 737-600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Part #: YV68A110, Supplier: F6151, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Opt Part #: 11615-02, Supplier: 0D4J3, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ) (Opt Part #: 18000-02, Supplier: 0D4J3, A/P Effectivity: 737-ALL) (Opt Part #: 80000-03-01010203, Supplier: 0BAW0, A/P Effectivity: 737-ALL) (Opt Part #: 80000-04-01020301, Supplier: 0BAW0, A/P Effectivity: 737-ALL) (Opt Part #: 964-0400-020, Supplier: 97896, A/P Effectivity: 737-600, -700, -800) (Opt Part #: 964-0400-025, Supplier: 97896, A/P Effectivity: 737-300, -400, -500, -600, -700, -700C, -700ER, -700QC, -800, -900, -900ER, -BBJ)

HAP D. Location Zones

Zone	Area
212	Flight Compartment - Right

HAP E. Procedure

HAP SUBTASK 23-27-32-860-010

HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

EFFECTIVITY
 HAP 001-013, 015-026, 028-030

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HAP SUBTASK 23-27-32-410-003

HAP (2) Do these steps to prepare for the software installation:

HAP NOTE: Make sure that you know the correct software part numbers for the ACARS
HAP Management Unit (MU). For ACARS to be an approved installation, the correct software
HAP must be installed.

HAP (a) Make sure the system select switch on the data loader control panel (P61) is set to NORM
HAP or NORMAL.

HAP CAUTION: MAKE SURE THAT THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN
HAP BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT
HAP BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

HAP (b) Open this circuit breaker and install safety tag:

HAP CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

HAP CAUTION: MAKE SURE THAT THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN
HAP BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT
HAP BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

HAP (c) Connect the interface cable of the ARINC 615 data loader, COM-1915, to the DATA
HAP TRANSFER UNIT RECEPTACLE on the P61 panel.

HAP (d) Remove the safety tag and close this circuit breaker:

HAP CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

HAP 001-011 PRE SB 737-31-1136

HAP (e) Set the system select switch on the data loader control panel to the ACARS/CMU-1
HAP position.

HAP 012, 013, 015-026, 028-030; HAP 001-011 POST SB 737-31-1136

HAP (f) Do these steps at the data loader control panel:

HAP 1) Set the upper switch to L.

HAP 2) Set the system select switch to the ACARS/CMU position.

HAP 001-013, 015-026, 028-030

HAP SUBTASK 23-27-32-470-004

HAP 001-013, 015-026, 028-030; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE

HAP (3) Load the operational software:

HAP (a) The yellow LOADING SW LED on the front panel of the CMU should be flashing at about 1
HAP Hz.

HAP (b) Put disk 1 of the ATN software disks in the disk drive (963-2439-003).

HAP NOTE: It may take one to two minutes for the installation to start.

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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HAP 001-013, 015-026, 028-030; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE (Continued)

- HAP (c) Verify that loading occurs: the yellow XFER BUSY LED on the front panel of the MU should
HAP be flashing at about 1 Hz.
- HAP NOTE: Loading should take about 20-30 minutes per disk.
- HAP (d) Follow the prompts on the data loader to complete the installation.
- HAP 1) If there is more than one disk to install, wait 10 seconds after each disk is completed
HAP before you remove and install the subsequent disk.
- HAP NOTE: CHNG, CHANGE DISK, DISK CHANGE and INSERT DISK are examples of data
HAP loader prompts for a subsequent disk.
- HAP (e) When complete, remove the disk: the green XFER COMP LED on the front panel of MU
HAP should be on.
- HAP (f) Remove the disk from the disk drive when the software installation is completed.
- HAP NOTE: COMP, LOAD COMPLETE and TRANSF COMPLETE are examples of data loader
HAP prompts for a completed installation.
- HAP (g) Repeat the steps above, loading the AOC disk.
- HAP NOTE: It is important to give the MU plenty of time, as specified above, to power up after
HAP each data load is completed. Early removal of power to the MU will prevent the
HAP data load from completing normally, and the load will have to be repeated.
- HAP NOTE: Loading the operational software deletes the ATC database and the Hapag Lloyd
HAP AOC database.
- HAP NOTE: Loading the operational software deletes the MU configuration settings from the
HAP MU NVM. When operation software is loaded then the NVM values are set to the
HAP default values specified in the core SRD (998-3512-210).
- HAP NOTE: To test with default the ATC database and default AOC database then turn ADL
HAP selector switch to NOT CMU.
- HAP (4) Load the ATC database software:
- HAP (a) Insert disk 1 of the ATN software disks (998-3965-501).
- HAP (b) Verify that loading occurs: the yellow XFER BUSY LED on the front panel of the MU should
HAP be flashing at about 1 Hz.
- HAP (c) When complete, remove the disk: the green XFER COMP LED on the front panel of MU
HAP should be on.
- HAP NOTE: NOTE: Loading time less than 4 minutes.
- HAP NOTE: To test with default the ATC database and default AOC database then turn ADL
HAP selector switch to NOT CMU.
- HAP (5) Load the Hapag Lloyd AOC database:
- HAP (a) Insert disk 1 of the ATN software disks (HLF-2525-50P or provided from Hapag Lloyd).
- HAP (b) Verify that loading occurs: the yellow XFER BUSY LED on the front panel of the MU should
HAP be flashing at about 1 Hz.

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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HAP 001-013, 015-026, 028-030; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE (Continued)

HAP (c) When complete, remove the disk: the green XFER COMP LED on the front panel of MU
HAP should be on.

HAP NOTE: NOTE: Loading time less than 3 minutes.

HAP NOTE: To test with default the ATC database and default AOC database then turn ADL
HAP selector switch to NOT CMU.

HAP (6) Do a MU cold start:

HAP (a) The CMU performs a cold start whenever software or a database is loaded.

HAP (b) If the system select switch is in the CMU position then the MU remains in the data load
HAP state.

HAP (c) Turn the system select switch to something other than CMU.

HAP (d) The green MU PASS light and the red HW FAIL light should illuminate. Both lights will
HAP remain illuminated while the MU performs a CRC check of software and databases. This
HAP will take about 4-5 minutes.

HAP (e) If the CRC checks pass then green MU PASS light remain illuminate and the red HW FAIL
HAP light should turn off. After 4-5 minutes the MU prompt text <DLK should appear on the
HAP MCDU Menu

HAP HAP 001-013, 015-026, 028-030

SUBTASK 23-27-32-860-014

HAP (7) Set the system select switch on the data loader control panel (P61) to NORM or NORMAL.

HAP SUBTASK 23-27-32-860-015

HAP (8) Set the power switch on the PDL to the off position.

HAP SUBTASK 23-27-32-470-003

HAP (9) Do this task: ACARS Software Configuration Check, TASK 23-27-32-700-801.

HAP SUBTASK 23-27-32-020-005

HAP (10) Do these steps to put the airplane back to its usual condition:

HAP CAUTION: MAKE SURE THAT THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN
HAP BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT
HAP BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

HAP (a) Open this circuit breaker and install safety tag:

HAP CAPT Electrical System Panel, P18-2

Table with 4 columns: Row, Col, Number, Name. Row A, Col 9, Number C00923, Name DATA LOADER

HAP (b) Remove the interface cable from the DATA TRANSFER UNIT RECEPTACLE.

HAP (c) Remove the safety tag and close this circuit breaker:

HAP CAPT Electrical System Panel, P18-2

Table with 4 columns: Row, Col, Number, Name. Row A, Col 9, Number C00923, Name DATA LOADER

HAP (d) Do this task: Remove Electrical Power, TASK 24-22-00-860-812

END OF TASK

EFFECTIVITY
HAP 001-013, 015-026, 028-030
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AIRCRAFT MAINTENANCE MANUAL

ACARS MANAGEMENT UNIT (MU) - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A removal of the ARINC Communications Addressing and Reporting (ACARS) management unit.

HAP

(2) An installation of the ACARS management unit.

HAP

HAP

B. The ACARS management unit is located on the E3-3 shelf in the main equipment center.

HAP

TASK 23-27-32-020-801

HAP

2. ACARS Management Unit Removal

HAP

(Figure 401)

HAP

A. References

HAP

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

HAP

HAP

HAP

B. Location Zones

HAP

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

HAP

HAP

HAP

C. Access Panels

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

HAP

D. Removal Procedure

HAP

SUBTASK 23-27-32-860-001

HAP

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

HAP

F/O Electrical System Panel, P6-1

HAP

Row	Col	Number	Name
E	7	C00744	ACARS MU AC
E	8	C00743	ACARS MU DC

HAP

HAP

HAP

SUBTASK 23-27-32-010-001

HAP

(2) Open this access panel:

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

HAP

SUBTASK 23-27-32-020-001

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ACARS MANAGEMENT UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ACARS MANAGEMENT UNIT.

HAP

HAP

HAP

(3) Before you touch the ACARS MANAGEMENT UNIT [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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HAP

SUBTASK 23-27-32-020-002

HAP

- (4) Remove the ACARS MANAGEMENT UNIT [1] from the shelf. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

HAP

————— END OF TASK —————

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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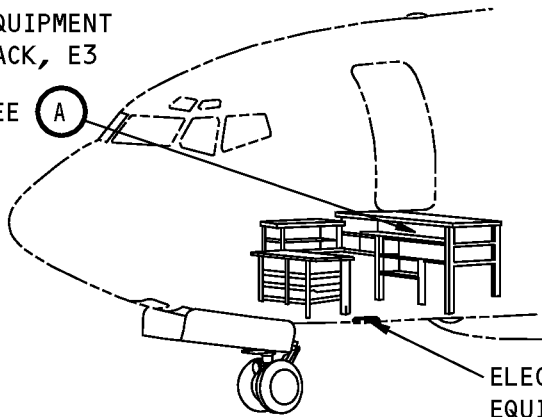
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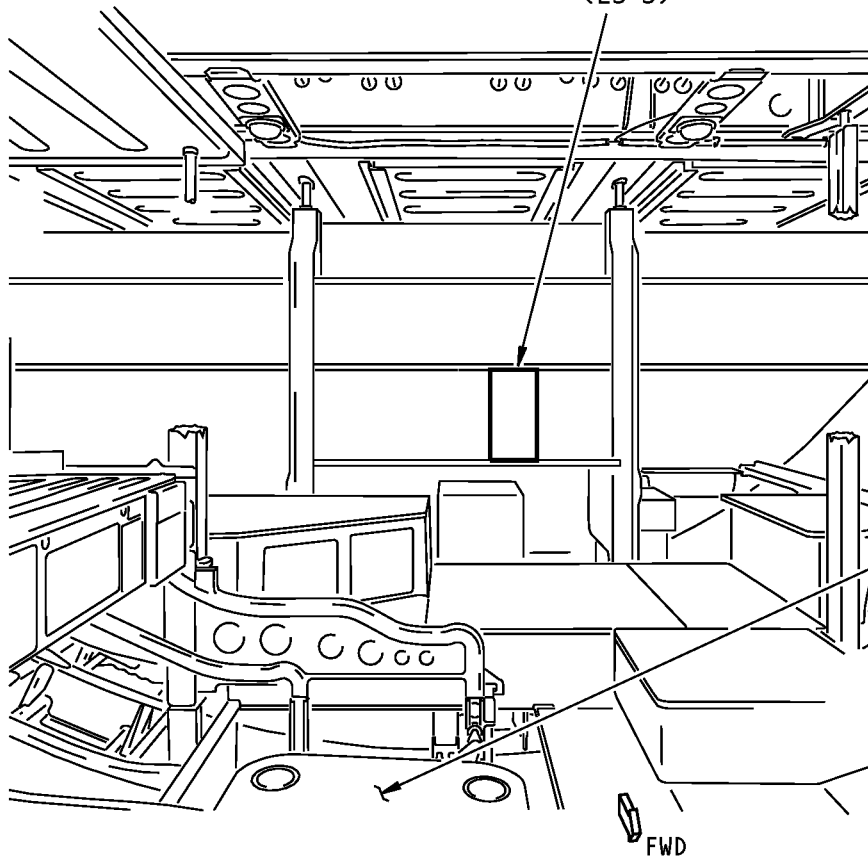
ELECTRONIC
EQUIPMENT
RACK, E3

SEE (A)



ELECTRONIC
EQUIPMENT
ACCESS DOOR, 117A

[1] ACARS (MU)
(E3-3)



ELECTRONIC
EQUIPMENT
ACCESS
DOOR, 117A

ELECTRONIC EQUIPMENT RACK, E3

(A)

**Aircraft Communications Addressing and Reporting System (ACARS) Management Unit (MU)
Installation**

Figure 401/23-27-32-990-801

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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HAP TASK 23-27-32-420-801

HAP 3. ACARS Management Unit Installation

HAP (Figure 401)

HAP A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

HAP B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ACARS MANAGEMENT UNIT	23-27-32-01-005	HAP 001-011
		23-27-32-02-005	HAP 012, 013, 015-026, 028-030

HAP C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

HAP D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

HAP E. Installation Procedure

HAP SUBTASK 23-27-32-860-004

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	7	C00744	ACARS MU AC
E	8	C00743	ACARS MU DC

HAP SUBTASK 23-27-32-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ACARS MANAGEMENT UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ACARS MANAGEMENT UNIT.

HAP (2) Before you touch the ACARS MANAGEMENT UNIT [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

HAP SUBTASK 23-27-32-410-001

HAP (3) Install the ACARS MANAGEMENT UNIT [1]. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

HAP SUBTASK 23-27-32-860-006

HAP (4) Close these circuit breakers:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	7	C00744	ACARS MU AC

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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	<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
HAP	E	8	C00743	ACARS MU DC

HAP F. Installation Test
HAP SUBTASK 23-27-32-740-001

HAP (1) Do this task: Reference Not Currently Available.

HAP G. Put the Airplane Back to Its Initial Condition
HAP SUBTASK 23-27-32-410-002

HAP (1) Close this access panel:

	<u>Number</u>	<u>Name/Location</u>
HAP	117A	Electronic Equipment Access Door

HAP SUBTASK 23-27-32-860-007

HAP (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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ACARS COMMUNICATIONS MANAGEMENT UNIT (CMU) - MAINTENANCE PRACTICES

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A software configuration check for the ACARS Communications Management Unit (CMU).

HAP

(2) An installation of the ACARS Communications Management Unit (CMU) software with an airborne data loader.

HAP

TASK 23-27-33-700-802

HAP

2. ACARS Communications Management Unit (CMU) Software Configuration Check

HAP

A. General

HAP

(1) This software configuration check makes sure that ACARS has the correct software loaded.

HAP

(2) A Flight Management Control and Display Unit (CDU) is necessary for this procedure.

HAP

HAP

B. References

HAP

Reference	Title
23-27-33-020-801	ACARS Communications Management Unit (CMU) Removal (P/B 401)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-61-00-730-801	Flight Management Computer System - System Test (P/B 501)

HAP

HAP

HAP

HAP

HAP

C. Location Zones

HAP

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP

HAP

HAP

D. Procedure

HAP

SUBTASK 23-27-33-860-001

HAP

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-27-33-840-001

HAP

(2) Make sure that the Flight Management Computer System is serviceable (TASK 34-61-00-730-801).

HAP

HAP

SUBTASK 23-27-33-700-001

HAP

(3) Do these steps to verify the software installation for Honeywell Mark II Communications Management Units:

HAP

HAP

NOTE: Make sure that you know the correct software part numbers for the ACARS Communications Management Unit (CMU). For ACARS to be an approved installation, the correct software part numbers must be installed.

HAP

HAP

HAP

(a) Push the MENU function key on the CDU.

HAP

1) Make sure that the CDU MENU page shows on the CDU.

HAP

(b) Push the line-select-key (LSK) adjacent to the < ACARS prompt.

HAP

1) Make sure that the ACARS PREFLT MENU page shows on the CDU.

HAP

(c) Push the LSK adjacent to the < MISC prompt.

HAP

1) Make sure that the ACARS MISC page shows on the display.

HAP

(d) Push the LSK adjacent to the MAINT > prompt.

EFFECTIVITY

HAP 031-054, 101-999

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- HAP 1) Make sure that the ACARS MAINTENANCE page shows on the display.
HAP (e) Push the LSK adjacent to the <PART NUMBERS prompt.
HAP 1) Make sure that the ACARS PART NUMBERS page shows on the CDU.
HAP 2) Make sure that the correct ACARS software part numbers show on the CDU.
HAP a) If the ACARS software part numbers are not correct, do this task: ACARS
HAP Communications Management Unit Software Installation with an Airborne Data
HAP Loader (ADL), TASK 23-27-33-470-802
HAP or replace the ACARS CMU with one that has the correct software loaded
HAP (TASK 23-27-33-020-801).

E. Return The Airplane To Its Usual Condition

SUBTASK 23-27-33-860-015

- HAP (1) Push the MENU key on the CDU.
HAP (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

TASK 23-27-33-470-802

3. ACARS Communications Management Unit Software Installation with an Airborne Data Loader (ADL)

A. General

- HAP (1) This procedure tells you how to install software into the ACARS communications management
HAP unit (CMU) with an airborne data loader (ADL).
HAP (a) The ACARS CMU must contain these pieces of software:
HAP 1) Core software
HAP 2) Operational software.
HAP 3) Customer Unique Database software.
HAP (b) The ACARS Operational software must be installed before the Customer Unique Database
HAP software. If the Operational software is already installed, then you can install only the
HAP Customer Unique Database software.
HAP (2) An airborne data loader (ADL) and a control display unit (CDU) are necessary for this procedure.
HAP A data loader control panel is also necessary. The data loader control panel is installed above
HAP the airborne data loader on the P61 panel.
HAP (3) The airplane must be on the ground with the engines shutdown before you can install software.
HAP (4) To read about software installation times and data loaders, do this task: On-Airplane Software
HAP Installation, TASK 20-15-11-400-801.

B. References

Table with 2 columns: Reference, Title. Rows include 20-15-11-400-801 On-Airplane Software Installation (P/B 201), 24-22-00-860-811 Supply Electrical Power (P/B 201), 24-22-00-860-812 Remove Electrical Power (P/B 201)

C. Location Zones

Table with 2 columns: Zone, Area. Rows include 211 Flight Compartment - Left, 212 Flight Compartment - Right

EFFECTIVITY
HAP 031-054, 101-999

23-27-33



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HAP D. Procedure

HAP SUBTASK 23-27-33-860-002

HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP SUBTASK 23-27-33-860-008

HAP (2) Make sure that this circuit breaker is closed:

HAP CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

HAP SUBTASK 23-27-33-860-009

HAP (3) Use an ADL to install software in the ACARS Communications Management Unit.

HAP NOTE: Make sure that you know the correct software part numbers for the ACARS CMU. For
HAP ACARS to be an approved installation, the correct software must be installed.

HAP SUBTASK 23-27-33-860-010

HAP (4) Do these steps to prepare for the software installation:

HAP (a) Make sure the system select switch on the data loader control panel (P61) is set to NORM
HAP or NORMAL.

HAP (b) Do these steps at the data loader control panel:

HAP 1) Set the upper switch to L.

HAP 2) Set the system select switch to the ACARS/CMU position.

SUBTASK 23-27-33-020-001

HAP (5) Do these steps to install the software:

HAP (a) Put the Operational software or Customer Unique Database disk in the disk drive.

HAP NOTE: If the Operational software has not been installed, it must be installed before the
HAP Customer Unique Database disk. It may take one to two minutes for the
HAP installation to start.

HAP (b) Follow the prompts on the data loader to complete the installation.

HAP 1) If there is more than one disk to install, wait 10 seconds after each disk is completed
HAP before you remove and install the subsequent disk.

HAP NOTE: CHNG, CHANGE DISK, DISK CHANGE and INSERT DISK are examples of data
HAP loader prompts for a subsequent disk.

HAP (c) Remove the disk from the disk drive when the software installation is completed.

HAP NOTE: COMP, LOAD COMPLETE and TRANSF COMPLETE are examples of data loader
HAP prompts for a completed installation.

HAP (d) Set the system select switch on the data loader control panel to NORM or NORMAL.

HAP (e) Make sure the < ACARS prompt shows on the CDU.

HAP NOTE: It can take up to 3 minutes for the prompt to show on the CDU.

HAP SUBTASK 23-27-33-470-001

HAP (6) Do this task: ACARS Communications Management Unit (CMU) Software Configuration
HAP Check, TASK 23-27-33-700-802.

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HAP 031-054, 101-999

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HAP
HAP
HAP

E. Return The Airplane To Its Usual Condition

SUBTASK 23-27-33-862-001

(1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY
HAP 031-054, 101-999

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ACARS COMMUNICATIONS MANAGEMENT UNIT - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A removal of the ARINC Communications Addressing and Reporting System (ACARS) communications management unit (CMU).

HAP

(2) An installation of the ACARS communications management unit (CMU).

HAP

B. The ACARS communications management unit (CMU) is located on the E4-1 shelf in the main equipment center.

HAP

TASK 23-27-33-020-801

HAP

2. ACARS Communications Management Unit (CMU) Removal

HAP

(Figure 401)

HAP

A. References

HAP

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

HAP

HAP

HAP

HAP

B. Location Zones

HAP

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP

HAP

HAP

HAP

HAP

C. Access Panels

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

HAP

D. Removal Procedure

SUBTASK 23-27-33-860-004

HAP

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

HAP

F/O Electrical System Panel, P6-1

HAP

Row	Col	Number	Name
E	8	C01483	CMU-1 AC
E	9	C01500	CMU/ACARS DC

HAP

HAP

HAP

SUBTASK 23-27-33-010-001

HAP

(2) Open this access panel:

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

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HAP 031-054, 101-999

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HAP

SUBTASK 23-27-33-020-004

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CMU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CMU.

HAP

HAP

HAP

(3) Before you touch the CMU [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP

HAP

SUBTASK 23-27-33-020-005

HAP

(4) Remove the CMU [1] from the shelf. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

HAP

————— **END OF TASK** —————

EFFECTIVITY

HAP 031-054, 101-999

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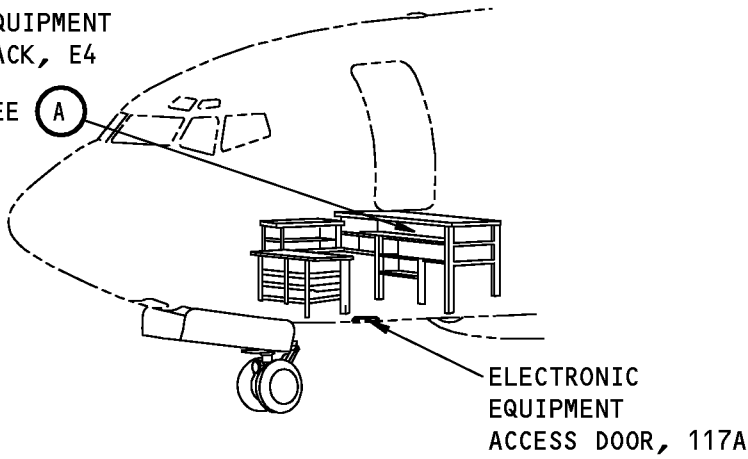
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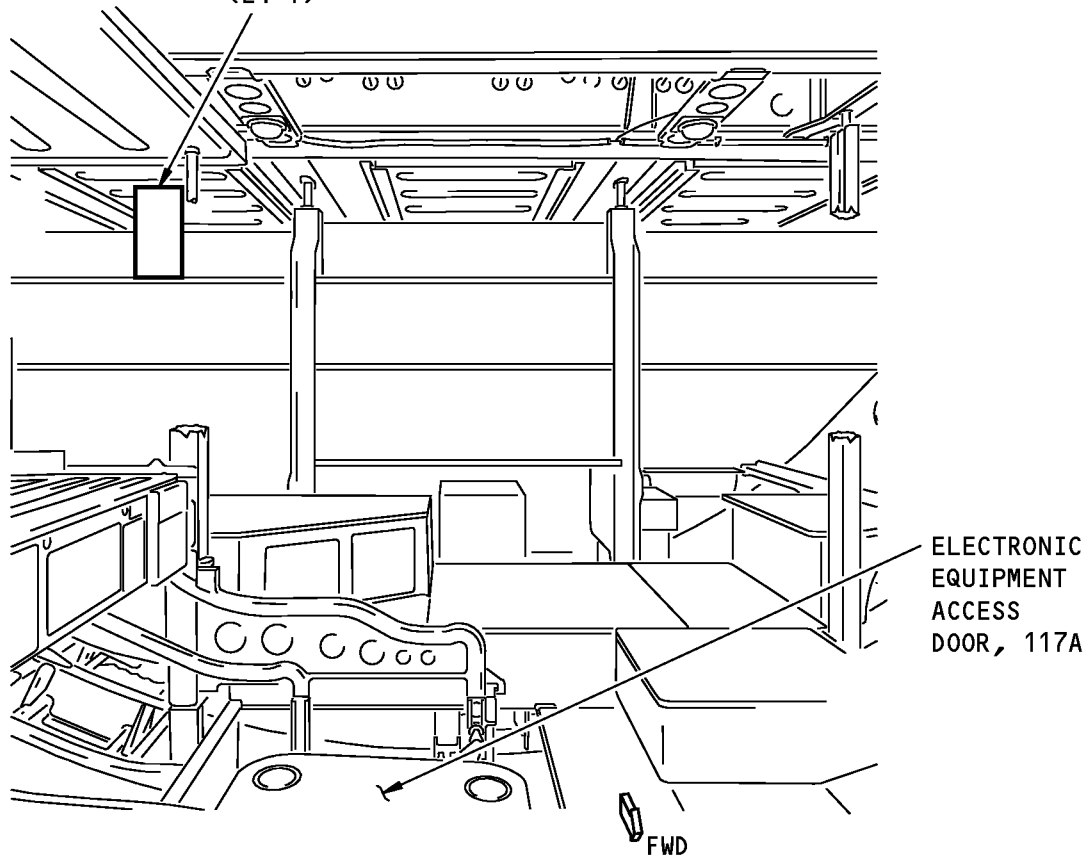
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ELECTRONIC
EQUIPMENT
RACK, E4

SEE (A)



[1] ACARS (CMU)
(E4-1)



ELECTRONIC EQUIPMENT RACK, E4

(A)

Aircraft Communications Addressing and Reporting System (ACARS) Communications Management Unit (CMU) Installation
Figure 401/23-27-33-990-801

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HAP TASK 23-27-33-420-801

HAP 3. ACARS Communications Management Unit (CMU) Installation

HAP (Figure 401)

HAP A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-27-00-740-814-009	ACARS - Operational Test (P/B 501)
24-22-00-860-812	Remove Electrical Power (P/B 201)

HAP B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	CMU	23-27-51-06-005	HAP 031-054, 101-999

HAP C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

HAP E. Installation Procedure

SUBTASK 23-27-33-860-005

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	8	C01483	CMU-1 AC
E	9	C01500	CMU/ACARS DC

SUBTASK 23-27-33-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE CMU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE CMU.

(2) Before you touch the CMU [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-27-33-410-002

(3) Install the CMU [1]. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-27-33-860-006

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	8	C01483	CMU-1 AC

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	<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
HAP	E	9	C01500	CMU/ACARS DC

HAP F. Installation Test
HAP SUBTASK 23-27-33-740-001
HAP (1) Do this task: ACARS - Operational Test, TASK 23-27-00-740-814-009.

HAP G. Put the Airplane Back to its Initial Condition.
HAP SUBTASK 23-27-33-410-003

HAP (1) Close this access panel:

	<u>Number</u>	<u>Name/Location</u>
HAP	117A	Electronic Equipment Access Door

HAP SUBTASK 23-27-33-860-007

HAP (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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- HAP or replace the ACARS APM (TASK 23-27-33-020-801).
HAP (f) Push the LSK 6L twice to get back to < ACARS PREFLT MENU.
HAP E. Return The Airplane To Its Usual Condition
HAP SUBTASK 23-27-35-862-001
HAP (1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

TASK 23-27-35-700-802

3. ACARS Airplane Personality Module (APM) Software Installation

A. General

- (1) This software installation writes data values into the APM.
(2) A Flight Management Control and Display Unit (CDU) is necessary for this procedure.

B. References

Table with 2 columns: Reference, Title. Rows include 24-22-00-860-811 (Supply Electrical Power), 24-22-00-860-812 (Remove Electrical Power), and 34-61-00-730-801 (Flight Management Computer System - System Test).

C. Location Zones

Table with 2 columns: Zone, Area. Rows include 211 (Flight Compartment - Left) and 212 (Flight Compartment - Right).

D. Procedure

- HAP SUBTASK 23-27-35-860-006
HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.
HAP SUBTASK 23-27-35-840-002
HAP (2) Make sure that the Flight Management Computer System is serviceable (TASK 34-61-00-730-801).
HAP SUBTASK 23-27-35-730-009
HAP (3) Do these steps on the #1 multi-purpose control display unit (MCDU-1) to write data into the APM:
HAP (a) Push the MENU key on both MCDUs.
HAP 1) Make sure the MAIN menu shows on both MCDUs.
HAP (b) Push the line select key (LSK) adjacent to the < ACARS prompt on MCDU-1.
HAP 1) Make sure the ACARS PREFLT MENU page shows on the MCDU display.
HAP (c) Push the LSK adjacent to the < MISC prompt.
HAP 1) Make sure the ACARS MISC page shows on the MCDU display.
HAP (d) Push the LSK adjacent to the MAINT > prompt.
HAP 1) Make sure the ACARS MAINTENANCE page shows on the MCDU display.
HAP (e) Push the LSK adjacent to the < APM prompt.
HAP 1) Make sure the ACARS APM MENU page 1 of 3 (1/3) shows on the MCDU display.
HAP (f) Push the LSK adjacent to the EDIT > prompt.
HAP 1) Make sure the ACARS APM EDIT page shows on the MCDU display.

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- HAP (g) Use the MCDU keypad to enter "THUYVAN" in the scratchpad.
- HAP (h) Push the LSK adjacent to the boxes under the ENTER PASSWORD prompt.
- HAP (i) Push the LSK adjacent to the CONTINUE > prompt.
- HAP 1) Make sure the ACARS APM EDIT page 1 of 3 (1/3) shows on the MCDU display.
- HAP (j) Push the LSK adjacent to the line under the A/C TYPE prompt until B737 shows.
- HAP (k) Use the MCDU keypad to enter the registration number of the airplane as shown on the captain's or first officer's main instrument panel placard in the scratchpad.
- HAP NOTE: Enter 7 characters. If the registration number is less than 7 characters, enter leading decimal points. Example: ..N1239 or .A-2345
- HAP (l) Push the LSK adjacent to the line under the A/C REG prompt.
- HAP (m) Use the MCDU keypad to enter the ICAO Address number of the airplane in the scratchpad.
- HAP NOTE: The ICAO code must be converted to hexadecimal. Type the hexadecimal value of the ICAO number into the scratchpad. See W/D 34-53-11 or 34-53-21.
- HAP (n) Push the LSK adjacent to the line under the ICAO ADDR prompt.
- HAP (o) Push the LSK adjacent to the HFDR1 DLK prompt until NO HFDR1 DLK shows.
- HAP (p) Push the LSK adjacent to the HFDR2 DLK prompt until NO HFDR2 DLK shows.
- HAP (q) Push the NEXT PAGE function key.
- HAP 1) Make sure the ACARS APM EDIT page 2 of 3 (2/3) shows on the MCDU display.
- HAP (r) Push the LSK adjacent to the ARINC 750 line until CLASSIC 750 shows.
- HAP (s) Push the LSK adjacent to VDR1 until VDR1 NOT INSTALLED shows.
- HAP (t) Push the LSK adjacent to VDR2 until VDR2 NOT INSTALLED shows.
- HAP (u) Push the LSK adjacent to VDR3 until VDR3 INSTALLED shows.
- HAP (v) Push the NEXT PAGE function key.
- HAP 1) Make sure the ACARS APM EDIT page 3 of 3 (3/3) shows on the MCDU display.
- HAP (w) Push the LSK adjacent to PTR until PTR INSTALLED shows.
- HAP (x) Push the LSK adjacent to the STORE AND RESET > prompt.
- HAP NOTE: The CMU will reset.
- HAP (y) When the < ACARS prompt shows on the MCDU display, verify the changes you made were saved. To verify the APM data, do this task: ACARS Airplane Personality Module (APM) Data Verification Check, TASK 23-27-35-700-801
- HAP SUBTASK 23-27-35-200-002
- HAP (4) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

ACARS AIRPLANE PERSONALITY MODULE - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A removal of the ARINC Communications Addressing and Reporting System (ACARS) airplane personality module (APM).

HAP

HAP

(2) An installation of the ACARS airplane personality module (APM).

HAP

B. The APM [1] is located behind the ACARS communications management unit (CMU) , M02127, on the E4-1 shelf in the main equipment center.

HAP

TASK 23-27-35-020-801

HAP

2. ACARS Airplane Personality Module (APM) Removal

HAP

(Figure 401)

HAP

A. References

HAP

HAP

Reference	Title
20-40-12-000-801	ESDS Handling for Printed Circuit Board Removal (P/B 201)
25-52-16-000-801	Forward Cargo Compartment Forward Bulkhead Liner Removal (P/B 401)

HAP

HAP

HAP

HAP

B. Location Zones

HAP

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP

HAP

HAP

HAP

HAP

HAP

HAP

C. Access Panels

HAP

Number	Name/Location
117A	Electronic Equipment Access Door
821	Forward Cargo Door

HAP

HAP

HAP

D. Removal Procedure

HAP

SUBTASK 23-27-35-860-001

HAP

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

HAP

F/O Electrical System Panel, P6-1

HAP

Row	Col	Number	Name
E	8	C01483	CMU-1 AC
E	9	C01500	CMU/ACARS DC

HAP

HAP

HAP

SUBTASK 23-27-35-010-001

HAP

(2) Open this access panel:

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

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HAP 031-054, 101-999

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HAP

SUBTASK 23-27-35-010-002

HAP

(3) Open this access panel:

HAP

<u>Number</u>	<u>Name/Location</u>
821	Forward Cargo Door

HAP

HAP

SUBTASK 23-27-35-020-001

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE APM. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE APM.

HAP

HAP

HAP

(4) Before you touch the APM [1], do this task: ESDS Handling for Printed Circuit Board Removal, TASK 20-40-12-000-801.

HAP

SUBTASK 23-27-35-020-002

HAP

HAP

(5) Do these steps to remove the APM [1]:

HAP

NOTE: Access to the APM [1] is from the forward cargo area, through the pressure relief panel [5] and the wire bundle disconnect bracket [4] on the back of the E3-3 shelf.

HAP

HAP

(a) Remove the pressure relief panel [5] (TASK 25-52-16-000-801).

HAP

(b) From behind the E3-3 shelf, loosen the four fasteners that hold the E3-3 shelf wire bundle disconnect bracket [4].

HAP

HAP

(c) Lower the E3-3 shelf wire bundle disconnect bracket [4] for access to the APM [1].

HAP

(d) Remove the two screws [2] that hold the APM [1] to the APM support bracket [6].

HAP

(e) Loosen the two fasteners that hold the connector [3] to the APM [1].

HAP

(f) Disconnect the connector [3] and remove the APM [1].

————— **END OF TASK** —————

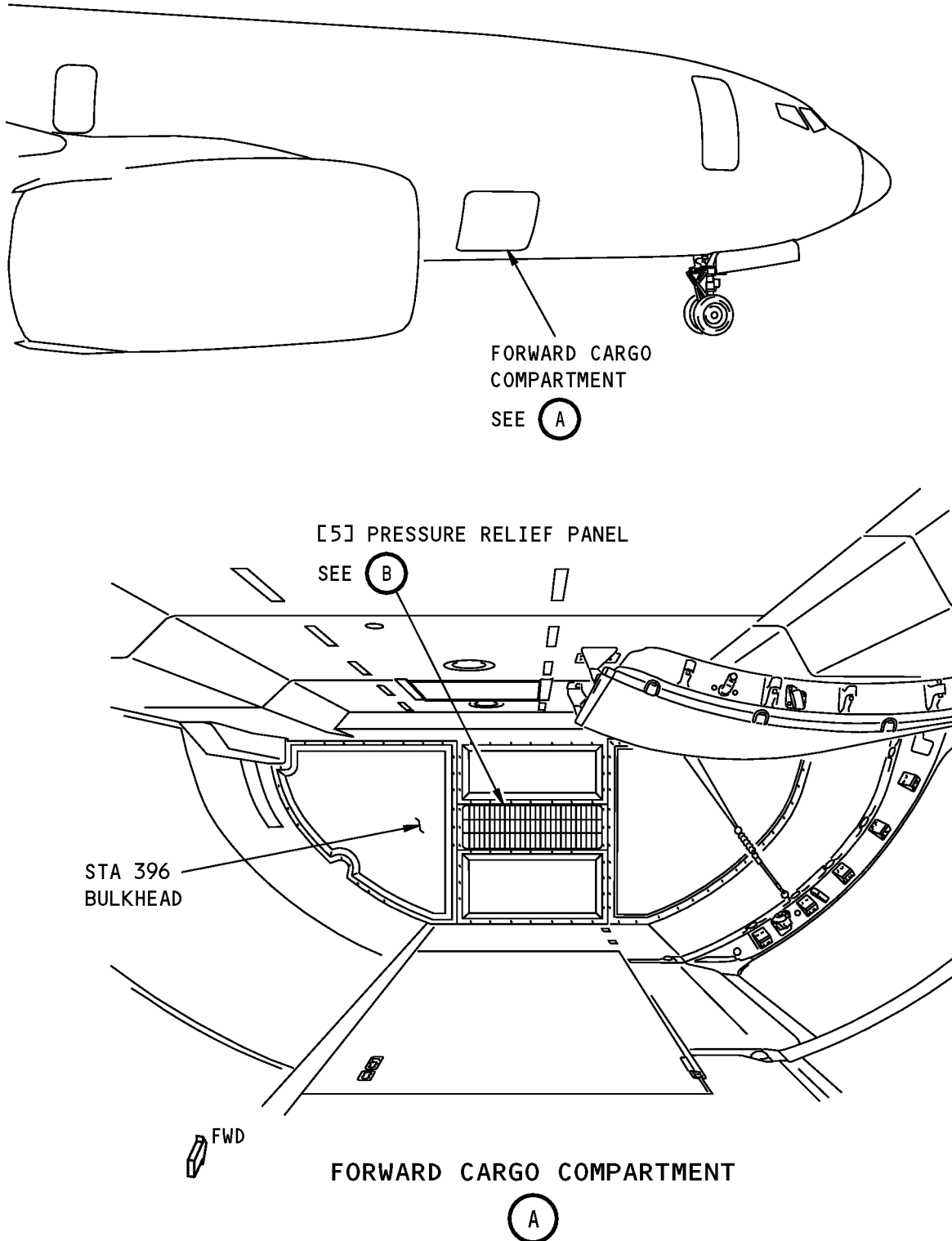
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Aircraft Communications Addressing and Reporting System (ACARS) Airplane Personality Module (APM)

Figure 401 (Sheet 1 of 2)/23-27-35-990-801

EFFECTIVITY
HAP 031-054, 101-999

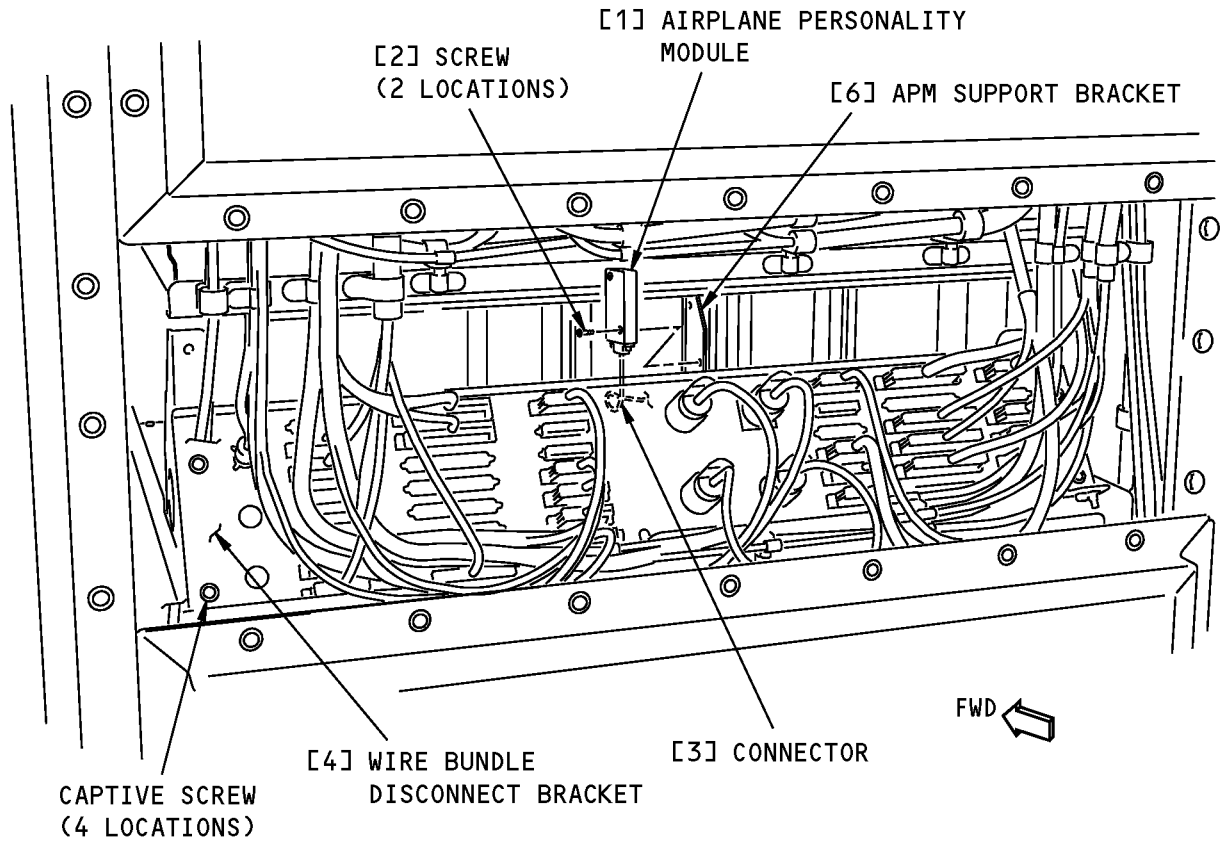
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PRESSURE RELIEF PANEL
(SHOWN REMOVED)

(B)

Aircraft Communications Addressing and Reporting System (ACARS) Airplane Personality Module (APM)

Figure 401 (Sheet 2 of 2)/23-27-35-990-801

EFFECTIVITY
HAP 031-054, 101-999

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HAP TASK 23-27-35-420-801

HAP 3. ACARS Airplane Personality Module (APM) Installation

HAP (Figure 401)

HAP A. References

Reference	Title
20-40-12-400-801	ESDS Handling for Printed Circuit Board Installation (P/B 201)
23-27-00-740-814-009	ACARS - Operational Test (P/B 501)
23-27-35-700-801	ACARS Airplane Personality Module (APM) Data Verification Check (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
25-52-16-400-801	Forward Cargo Compartment Forward Bulkhead Liner Installation (P/B 401)

HAP B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door
821	Forward Cargo Door

HAP D. Installation Procedure

HAP SUBTASK 23-27-35-860-002

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

HAP F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	8	C01483	CMU-1 AC
E	9	C01500	CMU/ACARS DC

HAP SUBTASK 23-27-35-020-003

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE APM. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE APM.

HAP (2) Before you touch the APM [1], do this task: ESDS Handling for Printed Circuit Board Installation, TASK 20-40-12-400-801.

HAP SUBTASK 23-27-35-020-004

HAP (3) Do these steps to install the APM [1]:

HAP **NOTE:** Access to the APM [1] is from the forward cargo area, through the pressure relief panel [5] and the wire bundle disconnect bracket [4] on the back of the E3-3 or E4-1 shelf.

HAP (a) Connect the APM [1] to the connector [3].

EFFECTIVITY
HAP 031-054, 101-999

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- HAP (b) Tighten the two fasteners that hold the connector [3] to the APM [1].
- HAP (c) Install the two screws [2] that hold the APM [1] to the APM support bracket [6].
- HAP (d) Install the E3-3 shelf wire bundle disconnect bracket [4].
- HAP 1) Make sure the four fasteners that secure the wire bundle disconnect bracket [4] are
- HAP tightened.
- HAP (e) Install the pressure relief panel [5] (TASK 25-52-16-400-801).

SUBTASK 23-27-35-860-003

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

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C01483	CMU-1 AC
E	9	C01500	CMU/ACARS DC

E. Installation Test

SUBTASK 23-27-35-700-004

- (1) Do this task: ACARS Airplane Personality Module (APM) Data Verification Check, TASK 23-27-35-700-801.

SUBTASK 23-27-35-740-001

- (2) Do this task: ACARS - Operational Test, TASK 23-27-00-740-814-009.

F. Put the Airplane Back to its Initial Condition.

SUBTASK 23-27-35-410-001

- (1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-27-35-410-002

- (2) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
821	Forward Cargo Door

SUBTASK 23-27-35-860-004

- (3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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SELCAL - ADJUSTMENT/TEST

1. General

A. This procedure has this task:

- (1) An operational test of the Selective Calling (SELCAL) system.

TASK 23-28-00-700-801

2. SELCAL System - Operational Test

A. References

Reference	Title
23-11-00-710-801	HF Communication System - Operational Test (P/B 501)
23-12-00-710-801	VHF Communication System - Operational Test (P/B 501)
23-51-00-710-801	Flight Interphone System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1613	Transmitter Tester - Selcal, Ground Equipment (Part #: CTS-700, Supplier: 30242, A/P Effectivity: 737-ALL) (Part #: IFR-4000, Supplier: 51190, A/P Effectivity: 737-ALL) (Part #: N1304A, Supplier: 30242, A/P Effectivity: 737-ALL) (Part #: N1304B-1, Supplier: 30242, A/P Effectivity: 737-ALL)

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Procedure

SUBTASK 23-28-00-860-001

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-28-00-860-002

- (2) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	15	C00058	COMMUNICATIONS SELCAL

I HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-28-00-860-003

- (3) Make sure that the HF communication system (TASK 23-11-00-710-801) and VHF communication system (TASK 23-12-00-710-801) are serviceable.

EFFECTIVITY
HAP 037-054, 101-999

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HAP 038, 041-054, 102-999; HAP 037, 039, 040 POST SB 737-23-1299 (Continued)

I HAP 101; HAP 037, 039, 040 PRE SB 737-23-1299

SUBTASK 23-28-00-860-005

(4) Make sure that the VHF communication system (TASK 23-12-00-710-801) is serviceable.

HAP 037-054, 101-999

SUBTASK 23-28-00-860-007

(5) Make sure that the Flight Interphone System (TASK 23-51-00-710-801) is serviceable.

SUBTASK 23-28-00-710-008

(6) Do the steps that follow for VHF 1:

- (a) Set the captain's audio control panel to the VHF 1 communication system.
- (b) Set the VHF 1 to an approved test frequency.
- (c) Have a SELCAL identified signal transmitted on the VHF 1 test frequency.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder. Make sure the signal is approved and the SELCAL Transmitter/Tester, COM-1613 set to the SELCAL code for the airplane.

- (d) Make sure the VHF 1 call light on all the audio control panels comes on.
- (e) Make sure you hear a single high-low chime in the flight compartment.
- (f) Push and release the VHF 1 button on the captain's audio control panel.
- (g) Make sure the VHF 1 light on all the audio control panels goes off.

SUBTASK 23-28-00-710-010

(7) Do the steps that follow for VHF 2:

- (a) Set the captain's audio control panel to the VHF 2 communication system.
- (b) Set the VHF 2 to an approved test frequency.
- (c) Have a SELCAL identified signal transmitted on the VHF 2 test frequency.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder. Make sure the signal is approved and the SELCAL Transmitter/Tester, COM-1613 set to the SELCAL code for the airplane.

- (d) Make sure the VHF 2 call light on all the audio control panels comes on.
- (e) Make sure you hear a single high-low chime in the flight compartment.
- (f) Push and release the VHF 2 button on the captain's audio control panel.
- (g) Make sure the VHF 2 light on all the audio control panels goes off.

SUBTASK 23-28-00-710-012

(8) Do the steps that follow for VHF 3:

- (a) Set the captain's audio control panel to the VHF 3 communication system.
- (b) Set the VHF 3 to an approved test frequency.
- (c) Have a SELCAL identified signal transmitted on the VHF 3 test frequency.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder. Make sure the signal is approved and the SELCAL Transmitter/Tester, COM-1613 set to the SELCAL code for the airplane.

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- (d) Make sure the VHF 3 call light on all the audio control panels comes on.
- (e) Make sure you hear a single high-low chime in the flight compartment.
- (f) Push and release the VHF 3 button on the captain's audio control panel.
- (g) Make sure the VHF 3 light on all the audio control panels goes off.

HAP 038, 041-054; HAP 037, 039, 040 POST SB 737-23-1299

SUBTASK 23-28-00-710-014

(9) Do the steps that follow for HF 1:

- (a) Set the captain's audio control panel to the HF 1 communication system.
- (b) Set the HF 1 to an approved test frequency.
- (c) Have a SELCAL identified signal transmitted on the HF 1 test frequency.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder. Make sure the signal is approved and the SELCAL Transmitter/Tester, COM-1613 set to the SELCAL code for the airplane.

- (d) Make sure the HF 1 call light on all the audio control panels comes on.
- (e) Make sure you hear a single high-low chime in the flight compartment.
- (f) Push and release the HF 1 button on the captain's audio control panel.
- (g) Make sure the HF 1 light on all the audio control panels goes off.

HAP 048

SUBTASK 23-28-00-710-016

(10) Do the steps that follow for HF 2:

- (a) Set the captain's audio control panel to the HF 2 communication system.
- (b) Set the HF 2 to an approved test frequency.
- (c) Have a SELCAL identified signal transmitted on the HF 2 test frequency.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder. Make sure the signal is approved and the SELCAL Transmitter/Tester, COM-1613 set to the SELCAL code for the airplane.

- (d) Make sure the HF 2 call light on all the audio control panels comes on.
- (e) Make sure you hear a single high-low chime in the flight compartment.
- (f) Push and release the HF 2 button on the captain's audio control panel.
- (g) Make sure the HF 2 light on all the audio control panels goes off.

HAP 037-054, 101-999

SUBTASK 23-28-00-860-006

(11) Set the communication systems back to their usual conditions.

SUBTASK 23-28-00-860-004

(12) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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SELCAL DECODER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the selective calling (SELCAL) decoder.
- (2) An installation of the SELCAL decoder.

B. The SELCAL decoder is located on the E4-1 electronics shelf in the main equipment center.

TASK 23-28-11-020-801

2. SELCAL Decoder Unit Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Removal Procedure

SUBTASK 23-28-11-010-001

(1) Open this access panel to get access to the main equipment center:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 23-28-11-860-001

(2) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	15	C00058	COMMUNICATIONS SELCAL

SUBTASK 23-28-11-860-002

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE SELCAL DECODER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SELCAL DECODER.

(3) Before you touch the SELCAL decoder [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

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SUBTASK 23-28-11-020-001

- (4) Remove the SELCAL decoder [1] from the shelf. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— **END OF TASK** —————

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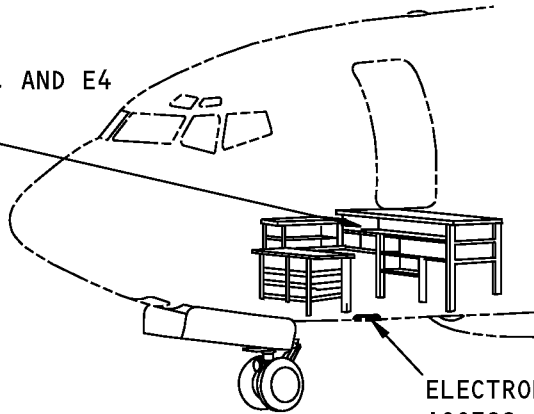
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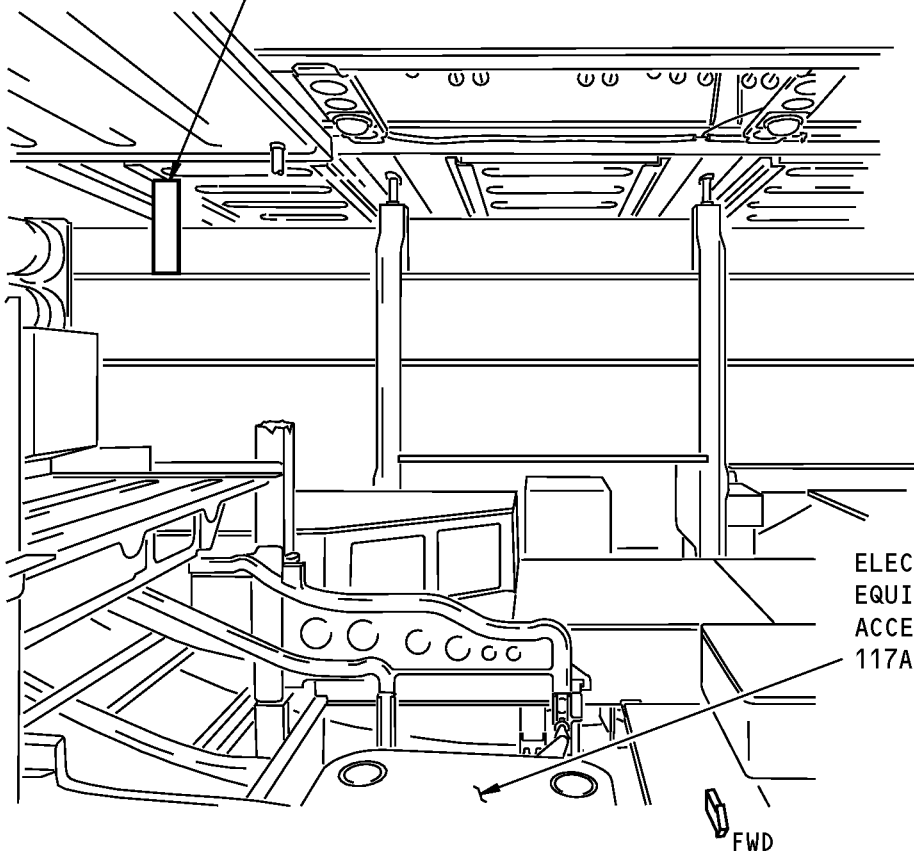
ELECTRONIC
EQUIPMENT
RACKS E2, E3, AND E4

SEE (A)



ELECTRONIC EQUIPMENT
ACCESS DOOR, 117A

[1] SELCAL DECODER
(E4-1)



ELECTRONIC
EQUIPMENT
ACCESS DOOR,
117A

FWD

ELECTRONIC EQUIPMENT RACKS, E2, E3 AND E4

(A)

Selective Calling (SELCAL) Decoder Installation
Figure 401/23-28-11-990-801

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TASK 23-28-11-420-801

3. SELCAL Decoder Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-12-00-710-801	VHF Communication System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1613	Transmitter Tester - Selcal, Ground Equipment (Part #: CTS-700, Supplier: 30242, A/P Effectivity: 737-ALL) (Part #: IFR-4000, Supplier: 51190, A/P Effectivity: 737-ALL) (Part #: N1304A, Supplier: 30242, A/P Effectivity: 737-ALL) (Part #: N1304B-1, Supplier: 30242, A/P Effectivity: 737-ALL)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	SELCAL decoder	23-22-11-02-005	HAP 037-054, 101-999

D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Installation Procedure

SUBTASK 23-28-11-860-003

(1) Make sure that this circuit breaker is open and has safety tag:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	15	C00058	COMMUNICATIONS SELCAL

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SUBTASK 23-28-11-860-004

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE SELCAL DECODER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SELCAL DECODER.

- (2) Before you touch the SELCAL decoder [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-28-11-420-001

- (3) Install the SELCAL decoder [1] on the shelf. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-28-11-860-005

- (4) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C00058	COMMUNICATIONS SELCAL

G. Installation Test

SUBTASK 23-28-11-860-006

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-28-11-860-007

- (2) Make sure that the VHF communication system (TASK 23-12-00-710-801) is serviceable.

SUBTASK 23-28-11-700-002

- (3) Do the SELCAL decoder installation test.
 - (a) Set the captain's audio control panel to the VHF 1 communication system.
 - (b) Set the VHF 1 to an approved test frequency.
 - 1) Make sure you can communicate on this system.
 - (c) Have a SELCAL identified signal transmitted on the VHF 1 test frequency.

NOTE: If a station is not available to transmit from, make a SELCAL signal with a SELCAL ground station encoder. Make sure the signal is approved and the SELCAL Transmitter/Tester, COM-1613 set to the SELCAL code for the airplane.

- (d) Make sure the VHF 1 light on the SELCAL control panel comes on.
- (e) Make sure you hear a single high-low chime in the flight compartment.
- (f) Push and release the VHF 1 button on the SELCAL control panel.
- (g) Make sure the VHF 1 light on the SELCAL control panel goes off.
- (h) Set the communication system back to its usual condition.

H. Put the Airplane Back to Its Initial Condition

SUBTASK 23-28-11-410-001

- (1) Close this access panel for the main equipment center:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-28-11-860-008

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PASSENGER ADDRESS SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure does a full test of the passenger address system.
- C. This procedure contains:
 - (1) An operational test of the passenger address system
 - (2) A system flight mode test of the sound level in the passenger cabin.

TASK 23-31-00-740-801

2. Passenger Address System - Operational Test

A. General

- (1) This procedure is a scheduled maintenance task.
- (2) The operational test is a fast check of the system. The test has a number of different parts. All parts of the test follow in a given sequence.
- (3) The operational test has these test sections:
 - (a) Boarding Music Operation Test
 - (b) Prerecorded Announcement Test
 - (c) Emergency Announcement Test
 - (d) Passenger Address Operation Test
 - (e) Chime Operation Test

B. References

Reference	Title
23-31-07-900-801	Tape Replacement (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Procedure

SUBTASK 23-31-00-860-007

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 031-054, 101-999

SUBTASK 23-31-00-710-015

- (2) Do a test of the boarding music operation:
 - (a) Push the ENT button on the prerecorded announcement machine (PRAM).
 - (b) Push the MUSIC button on the PRAM.
 - (c) Push a number, '1', '2', '3', or '4', on the PRAM keypad to select a boarding music channel.
 - (d) Push the START button.

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HAP 031-054, 101-999 (Continued)

- 1) Make sure you hear music on the attendant, PSU, and lavatory speakers.
- (e) Turn the volume control clockwise.
 - 1) Make sure the volume level increases at all of the speakers.
- (f) Turn the volume control counterclockwise.
 - 1) Make sure the volume level decreases at all of the speakers.
- (g) Turn the volume control to the middle position.
- (h) Make an announcement from the flight compartment and from each attendant station.
 - 1) Make sure the announcement is heard at all of the speakers.
 - 2) Make sure the music is not heard.

HAP 006-013, 015-026, 028-030

SUBTASK 23-31-00-710-007

- (3) Do a test of the boarding music operation:
 - (a) Put cassette tape part number 980-3022-001 into the prerecorded announcement machine (PRAM). To install the tape, do this task: Tape Replacement, TASK 23-31-07-900-801.
 - (b) Touch the applicable selections on the video system control unit (VSCU) to turn on the boarding music.
 - (c) Adjust the volume so that you can hear the boarding music clearly.
 - 1) Make sure you can hear clear music on the PSU, lavatory, and attendant speakers.
 - (d) Increase the boarding music volume.
 - 1) Make sure the volume level increases at all of the speakers.
 - (e) Decrease the boarding music volume.
 - 1) Make sure the volume level decreases at all of the speakers.
 - (f) Adjust the volume to a comfortable level.
 - (g) Make an announcement from the flight compartment and from each attendant station.
 - 1) Make sure the announcement is heard at all of the speakers.
 - 2) Make sure the music is not heard.

HAP 031-054, 101-999

SUBTASK 23-31-00-710-016

- (4) Do a test of the prerecorded announcement operation:
 - (a) Push the ANNC button on the PRAM.
 - (b) Enter a three-digit number for an announcement.
 - (c) Push the START button.
 - 1) Make sure you hear an announcement on all of the PA speakers.
 - 2) Make sure that the boarding music is not heard while the prerecorded announcement is heard.
 - 3) Make sure you hear the boarding music after the announcement stops.
 - (d) Make an announcement from the flight compartment and each attendant station while you hear the prerecorded announcement.

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HAP 031-054, 101-999 (Continued)

- 1) Make sure you can hear the announcement on all of the speakers.
 - 2) Make sure you cannot hear the prerecorded announcement while the voice announcement is being made.
- (e) Push the STOP button.

HAP 006-013, 015-026, 028-030

SUBTASK 23-31-00-710-008

- (5) Do a test of the prerecorded announcement operation:
- (a) Touch the applicable selections on the video system control unit (VSCU) to play a prerecorded announcement.
 - 1) Make sure an announcement is heard on the attendant, PSU, and lavatory speakers.
 - 2) Make sure that the boarding music is not heard while the prerecorded announcement is heard.
 - 3) Make sure you hear the boarding music after the announcement stops.
 - (b) Touch the applicable selections on the video system control unit (VSCU) to play a prerecorded announcement.
 - (c) Make an announcement from the flight compartment and each attendant station while the prerecorded announcement plays.
 - 1) Make sure you can hear the voice announcement from all of the speakers.
 - 2) Make sure you cannot hear the prerecorded announcement while the voice announcement is being made.

HAP ALL

SUBTASK 23-31-00-710-024

- (6) Do a test of the emergency announcement:
- (a) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C00784	OXYGEN PASS RIGHT
F	10	C00783	OXYGEN PASS LEFT
 - (b) Set the PASS OXYGEN switch on the P5 overhead panel to ON.
 - 1) Make sure that you hear an emergency announcement or tone on the passenger address speakers.

NOTE: If there is no auto announcement chip in the PRAM, you will hear a short low-level tone on the PA speakers.
 - (c) Set the PASS OXYGEN switch on the P5 overhead panel to NORMAL.
 - (d) Open and close this circuit breaker:

CAPT Electrical System Panel, P18-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	7	C00156	OXYGEN IND

- 1) Make sure the passenger OXYGEN ON light on the P5-14 panel is not illuminated

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

CAPT Electrical System Panel, P18-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	9	C00784	OXYGEN PASS RIGHT
F	10	C00783	OXYGEN PASS LEFT

SUBTASK 23-31-00-710-005

- (7) Do a test to do a check of the Passenger Address priority system from the aft control stand:
- Attach a PA microphone to the jack (D6001) on the aft control stand if a microphone or handset is not installed.
 - Push and hold the PTT switch on the control stand PA microphone.
 - Make sure you can hear the announcement from these speakers:
 - Attendant's speakers.
 - Lavatory speakers
 - PSU speakers
 - Release the PTT switch.
 - Remove the PA microphone from the jack as applicable.

SUBTASK 23-31-00-710-027

- (8) Do a test of the passenger address operation from the from the captain's boom mic:
- Push and hold the PTT switch on the captain's control wheel to MIC.
 - Speak into the captain's boom mic
 - Make sure you can hear the announcement from these speakers:
 - Attendant's speakers.
 - Lavatory speakers
 - PSU speakers

SUBTASK 23-31-00-710-017

- (9) Do a test of the passenger address operation from a forward attendant station:
- Set the attendant handset to the PA mode.
 - Push and hold the PTT switch on the captain's control wheel to the MIC position.
 - Push the PTT button on the attendant handset.
 - At the same time, speak into the captain's boom mic and have someone speak into the attendant handset.
 - Make sure you can hear the captain's announcement on these speakers:
 - Attendant's speakers.
 - Lavatory speakers.
 - PSU speakers
 - Make sure you cannot hear the announcement from the attendant handset on the speakers.
- (e) Release the PTT switch on the captain's control wheel.
- Make sure you can hear the announcement from the attendant handset on the speakers.
 - Make sure that you cannot hear the announcement on the forward attendant speakers.

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- (f) Put the attendant handset in the handset cradle.
- (g) Do this test again using a handset from a different Forward attendant station (if installed).

SUBTASK 23-31-00-710-028

(10) Do a test of the passenger address operation from an aft attendant station:

- (a) Set the handset from an aft attendant station to the PA mode.
- (b) Push and hold the PTT switch on the captain's control wheel to the MIC position.
- (c) Push the PTT button on the attendant handset.
- (d) At the same time, speak into the captain's boom mic and have someone speak into the aft attendant handset.
 - 1) Make sure you can hear the captain's announcement on the attendant, PSU, and lavatory speakers.
 - 2) Make sure you cannot hear the announcement from the attendant handset on the speakers.
- (e) Release the PTT switch on the captain's control wheel.
 - 1) Make sure you can hear the announcement from the attendant handset on the forward attendant, PSU, and lavatory speakers.
 - 2) Make sure that you cannot hear the announcement from the attendant handset on the aft attendant speakers.
- (f) Put the attendant handset in the handset cradle.
- (g) Do this test again using a handset from a different Aft attendant station (if installed).

SUBTASK 23-31-00-710-006

(11) Do a test of the chime operation:

- (a) Push the attendant call button on a PSU.
 - 1) Make sure you hear one high tone on the PA speakers.
- (b) Push the attendant call button on all other PSUs.
 - 1) Make sure you hear a high tone each time you push an attendant call button.
- (c) Push the attendant call buttons once more to reset them.
 - 1) Make sure the attendant light goes off.
- (d) Push the PILOT call button on each attendant handset.
 - 1) Make sure you hear a high tone in the flight compartment.
- (e) Push the button for the attendant on each attendant handset.
 - 1) Make sure you hear a high/low tone on the attendant speakers and in the passenger cabin.
- (f) Push the ATT call button on the captain's overhead panel (P5).
 - 1) Make sure you hear a high/low tone on the attendant speakers and in the passenger cabin.
- (g) Put the attendant handsets in the handset cradles.
- (h) Do these steps to do a check of the Fasten Seat Belt warning function:
 - 1) Make sure the FASTEN BELTS sign switch on the captain's overhead panel is in the OFF position.
 - 2) Put the FASTEN BELTS sign switch to the ON position.

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a) Make sure you hear a low tone in the passenger cabin.

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3) Make sure you hear a fasten seat belt announcement.

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4) Put the FASTEN BELTS sign switch to the OFF position.

a) Make sure you hear a low tone in the passenger cabin.

HAP 001-013, 015-026, 028-030

(i) Do these steps to do a check of the NO SMOKING warning function:

1) Make sure the NO SMOKING sign switch on the captain's overhead panel is in the OFF position.

2) Put the NO SMOKING sign switch to the ON position.

a) Make sure you hear a low tone in the passenger cabin.

3) Put the NO SMOKING sign switch to the OFF position.

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SUBTASK 23-31-00-860-004

(12) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

TASK 23-31-00-730-801

3. Passenger Address System - System Test

A. General

(1) The system test has these test sections:

(a) A ground mode test which checks the sound level of each passenger address speaker.

(b) A flight mode test which makes sure that the sound level of the passenger address speakers increases when the engines are running.

(2) This test makes sure the sound level of the speakers in the passenger cabin increases by at least 5 dBs when the engines are running.

(3) This test checks the sound level in the airplane with the engine running relay from the #1 engine, or the #1 and #2 engines, connected to the PA amplifier.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-1322	Multimeter (Analog / Digital with sufficient internal Voltage to measure long cable) (Part #: 1587, Supplier: 89536, A/P Effectivity: 737-ALL) (Part #: 260-8XPI, Supplier: 55026, A/P Effectivity: 737-ALL) (Part #: MODEL 8 MK7, Supplier: 00426, A/P Effectivity: 737-ALL)
COM-1612	Generator - Random Noise, Audio Output (Part #: 543-1, Supplier: 21562, A/P Effectivity: 737-ALL)
COM-1616	Meter - Sound Level (Part #: 2100-10, Supplier: 90435, A/P Effectivity: 737-ALL) (Part #: CEL-254/K-1, Supplier: 01RN5, A/P Effectivity: 737-ALL) (Part #: CEL-254/K1, Supplier: 01RN5, A/P Effectivity: 737-ALL) (Opt Part #: 2400-10, Supplier: 90435, A/P Effectivity: 737-ALL)

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

E. System Ground Mode Test

SUBTASK 23-31-00-860-006

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-00-820-001

(2) Do these steps to calibrate the noise generator:

- (a) Connect the Multimeter, COM-1322 to the SIGNAL OUTPUT jacks on the noise random noise generator, COM-1612.
- (b) Set the PWR/PTT switch on the noise generator to ON.
- (c) Set the OUTPUT switch to the SIG position.
 - 1) Make sure 1.0 +/- 0.05 volts rms is shown on the voltmeter.
- (d) Adjust the SIGNAL ADJUST potentiometer on the noise generator if necessary.
- (e) Set the PWR/PTT switch on the noise generator to OFF.
- (f) Disconnect the Multimeter, COM-1322 from the SIGNAL OUTPUT jacks on the noise random noise generator, COM-1612.

SUBTASK 23-31-00-480-001

(3) Do these steps to prepare for test:

- (a) Connect the noise random noise generator, COM-1612, to a microphone jack in the flight compartment.
- (b) Set the noise random noise generator, COM-1612, PWR/PTT switch to ON.
- (c) Set the PA microphone selector switch on the applicable audio control panel to ON.
 - 1) Make sure its light comes on.
 - 2) Set the sound level meter, COM-1616 to SLOW and C.

SUBTASK 23-31-00-730-003

(4) Do this test of the sound level of the PA speakers:

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- (a) Hold the sound level meter, COM-1616 close to the speaker grill at each forward and aft attendant PA speaker.

NOTE: Do not touch the sound level meter to the speaker grill when you do the sound level test.

- 1) Make sure the sound level meter shows a value between 100 dB and 115 dB.
- (b) Adjust the PA GAIN in the front panel of the Remote Electronic Unit (M01353) in the E4-1 rack if necessary.
- (c) Hold the sound level meter close to the speaker grill at each passenger service unit with an installed speaker.
 - 1) Make sure the sound level meter shows a value between 95 dB and 110 dB.
- (d) Set the noise random noise generator, COM-1612, PWR/PTT switch to OFF.
- (e) Disconnect the noise random noise generator, COM-1612, from the microphone jack in the flight compartment.
- (f) Set the sound level meter to FAST.
- (g) Hold the sound level meter close to the speaker grill at aft right attendant speaker.
- (h) Push the ATTENDANT call button on the aft attendant handset.
 - 1) Make sure the sound level meter shows a value between 90 dB and 100 dB.
- (i) Push the ATTENDANT call button on any PSU.
 - 1) Make sure the sound level meter shows a value between 90 dB and 100 dB.
- (j) Push the FASTEN SEAT BELT sign switch to the ON position.
 - 1) Make sure the sound level meter shows a value between 100 dB and 115 dB.
- (k) Push the ATTENDANT call button on the pilot's overhead panel P5 to the ON position.
 - 1) Make sure the sound level meter shows a value between 90 dB and 100 dB.

F. System Flight Mode Test

SUBTASK 23-31-00-860-001

- (1) Do these steps to prepare for test:

- (a) Connect the noise random noise generator, COM-1612, to a microphone jack in the flight compartment.
- (b) Set the noise random noise generator, COM-1612, PWR/PTT switch to ON.
- (c) Measure the sound level of the speakers:
 - 1) Move the sound level meter across one of the main PA passenger cabin speaker panels.
 - 2) Write the value down.

NOTE: This is the value you will use to compare to the other measurements that will follow.

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

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5

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SUBTASK 23-31-00-730-001

(2) Do a test of engine 1 flight mode:

(a) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	4	C00359	FUEL SPAR VALVE ENG 1

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	3	C01312	ENGINE 1 RUN/PWR

(c) Move the engine 1 start lever to the IDLE position.

(d) Wait at least five minutes.

(e) Measure the sound level of the speakers:

- 1) Move the sound level meter across the same speaker panel used in the Prepare For Test section.
- 2) Write the value down.
 - a) Make sure the value is at least 5 dBs higher than the first measurement.

(f) Move the engine 1 start lever to the CUTOFF position.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	4	C00359	FUEL SPAR VALVE ENG 1

(h) Measure the sound level across the speaker.

- 1) Make sure the sound level is approximately the same as in the first measurement.

SUBTASK 23-31-00-730-002

(3) Do a test of engine 2 flight mode:

(a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

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F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00360	FUEL SPAR VALVE ENG 2

- (b) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C01313	ENGINE 2 RUN/PWR

- (c) Move the engine 2 start lever to the IDLE position.
- (d) Wait at least five minutes.
- (e) Measure the sound level of the speakers:
 - 1) Move the sound level meter across the same speaker panel used in the Prepare For Test section.
 - 2) Write the value down.
 - a) Make sure the value is at least 5 dBs higher than the first measurement.
- (f) Move the engine 2 start lever to the CUTOFF position.
- (g) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00360	FUEL SPAR VALVE ENG 2

- (h) Measure the sound level across the same speaker.
 - 1) Make sure the sound level is approximately the same as in the first measurement.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-31-00-860-002

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

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5

SUBTASK 23-31-00-860-003

- (2) Do the steps that follow to put the airplane back to its usual condition:
 - (a) Set the noise random noise generator, COM-1612, PWR/PTT switch to OFF.
 - (b) Disconnect the noise random noise generator, COM-1612, from the microphone jack in the flight compartment.
 - 1) Remove the test equipment from the airplane.

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SUBTASK 23-31-00-860-005

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PASSENGER ADDRESS AMPLIFIER - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
(1) A removal of the passenger address (PA) amplifier
(2) An installation of the PA amplifier.
B. The PA amplifier is located on the E1-3 shelf.

TASK 23-31-01-000-801

2. Passenger Address (PA) Amplifier Removal

(Figure 401)

A. References

Table with 2 columns: Reference, Title. Row: 20-10-07-000-801, E/E Box Removal (P/B 201)

B. Location Zones

Table with 2 columns: Zone, Area. Row: 117, Electrical and Electronics Compartment - Left

C. Removal Procedure

SUBTASK 23-31-01-860-001

- (1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Row: D, 4, C00082, COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-01-020-001

- (2) To remove the PA amplifier [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

END OF TASK

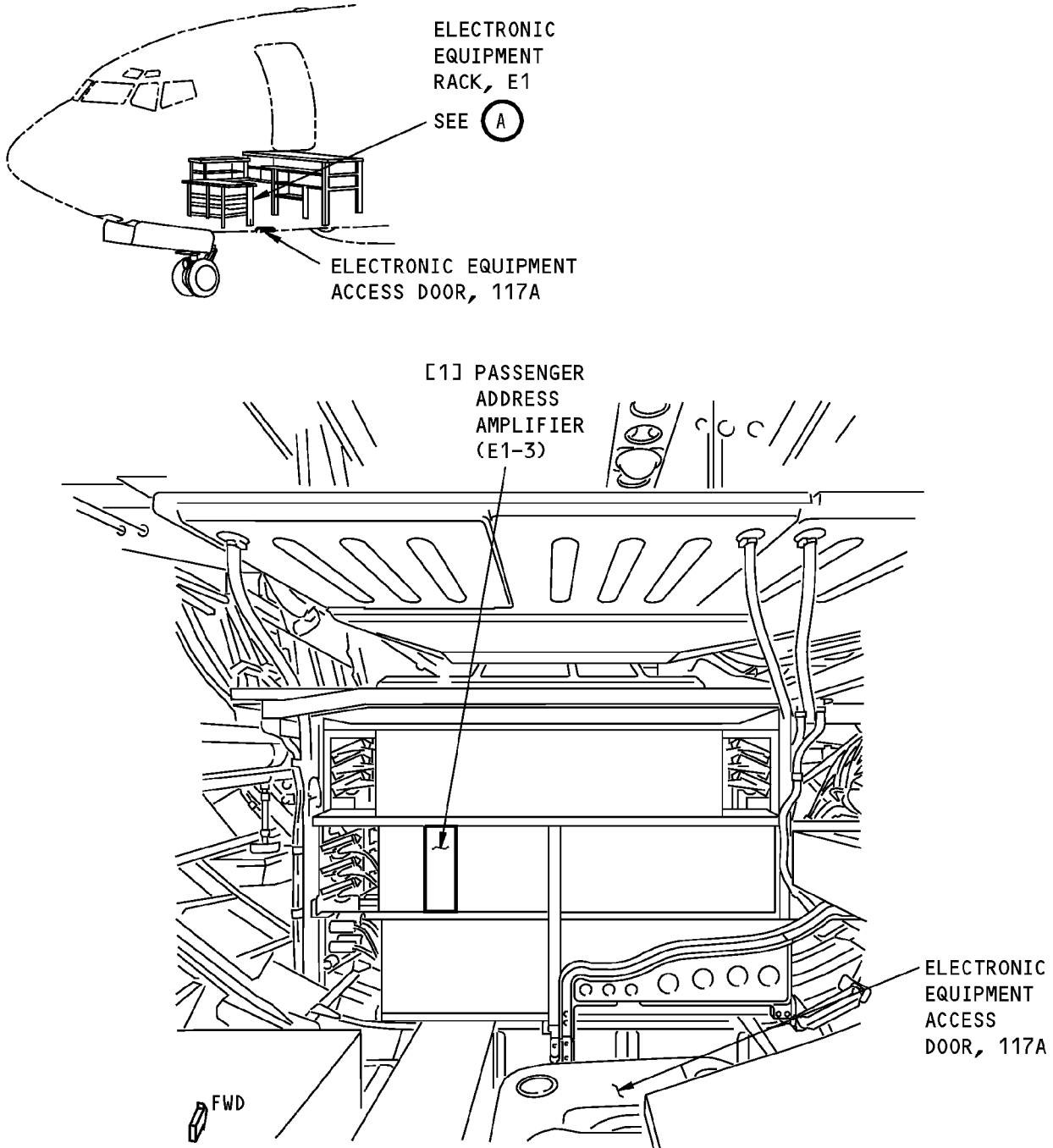
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ELECTRONIC EQUIPMENT RACK, E1

(A)

**Passenger Address Amplifier Installation
Figure 401/23-31-01-990-801**

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TASK 23-31-01-400-801

3. Passenger Address (PA) Amplifier Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Amplifier	23-31-01-01A-045	HAP 001-011

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

D. Installation Procedure

SUBTASK 23-31-01-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-01-420-001

- (2) To install the PA amplifier [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-31-01-860-003

- (3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

E. Installation Test

SUBTASK 23-31-01-860-004

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-01-710-002

- (2) Do a test of the PA amplifier operation:
 - (a) Put the OPERATE/TONE switch on the front panel of the PA amplifier to the LEVEL position.
 - 1) Make sure the display on the amplifier shows 69.0 to 71.0 VRMS.
 - (b) Put the OPERATE/TONE switch to the TONE position.
 - 1) Make sure you can hear a high tone on the passenger address speakers.
 - (c) Put the OPERATE/TONE switch to the OPERATE position.

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SUBTASK 23-31-01-860-005

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PASSENGER SERVICE UNIT SPEAKER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the passenger service unit (PSU) speaker
- (2) An installation of the PSU speaker.

B. The passenger service units have speakers installed, as necessary, to supply equal sound in the passenger compartment.

TASK 23-31-02-000-801

2. Passenger Service Unit (PSU) Speaker Removal

(Figure 401)

A. Tools/Equipment

Reference	Description
STD-1073	Wire - Standard, 18-22 Gauge, Insulation Removed

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Removal Procedure

SUBTASK 23-31-02-860-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-02-020-001

(2) Do the steps that follow to remove the PSU speaker:

- (a) Open the PSU.
 - 1) Push a 18-22 gauge insulation removed wire, STD-1073 in the holes of the PSU face panel to open the assembly.
- (b) Hold the PSU panel.
 - 1) Push the spring clip with the 18-22 gauge insulation removed wire, STD-1073 to release the assembly.
- (c) Slowly lower the PSU panel assembly until the lanyard can hold the PSU.
- (d) Disconnect the PSU electrical connector.
- (e) Identify the location of the electrical wires on the speaker transformer terminals.
- (f) Disconnect the two electrical connectors [3] from the speaker transformer terminals.
- (g) Remove the nuts [1] and washers [2] from the speaker [5].
- (h) Carefully remove the speaker from the PSU.
- (i) Remove the gasket [4].

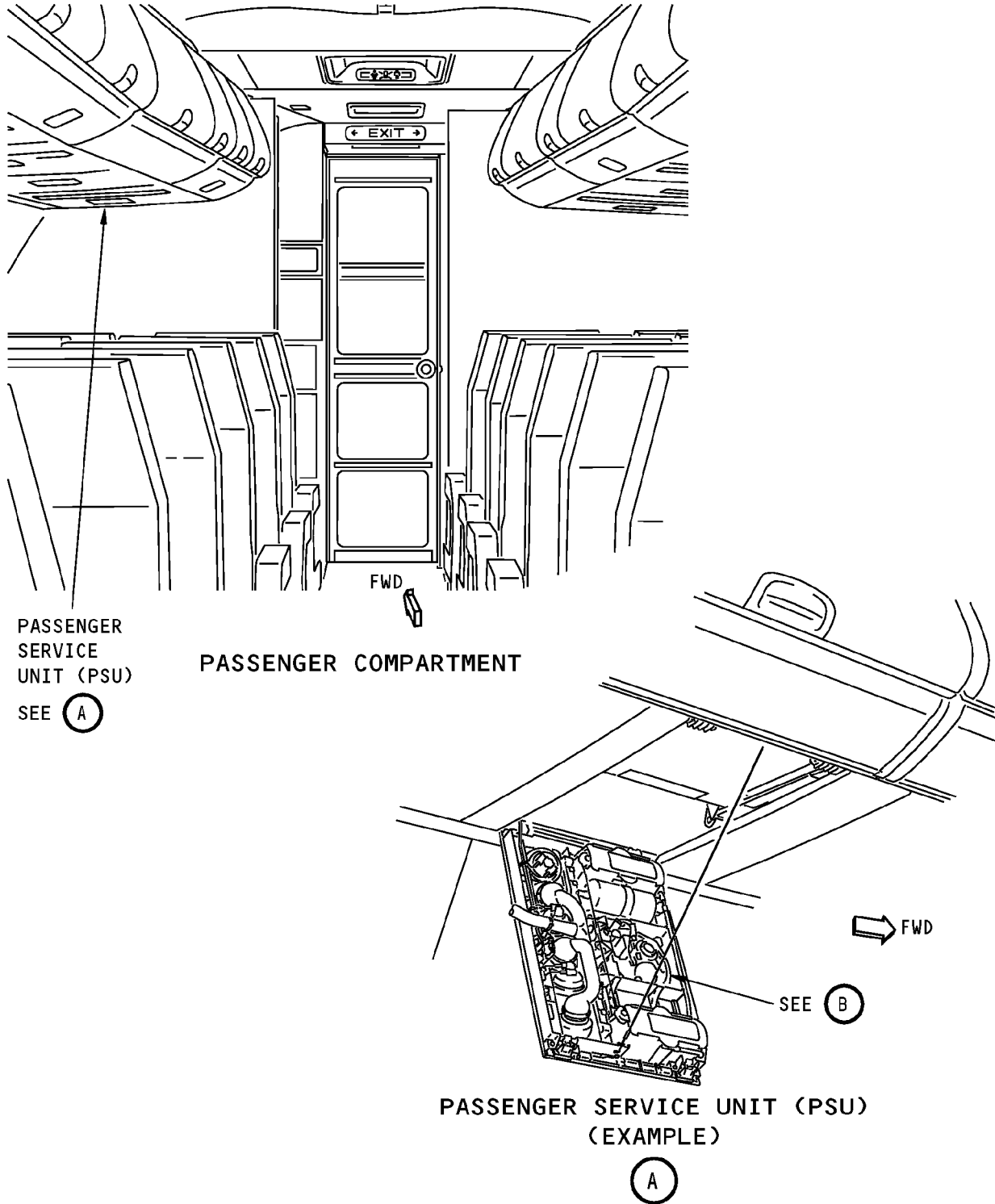
————— **END OF TASK** —————

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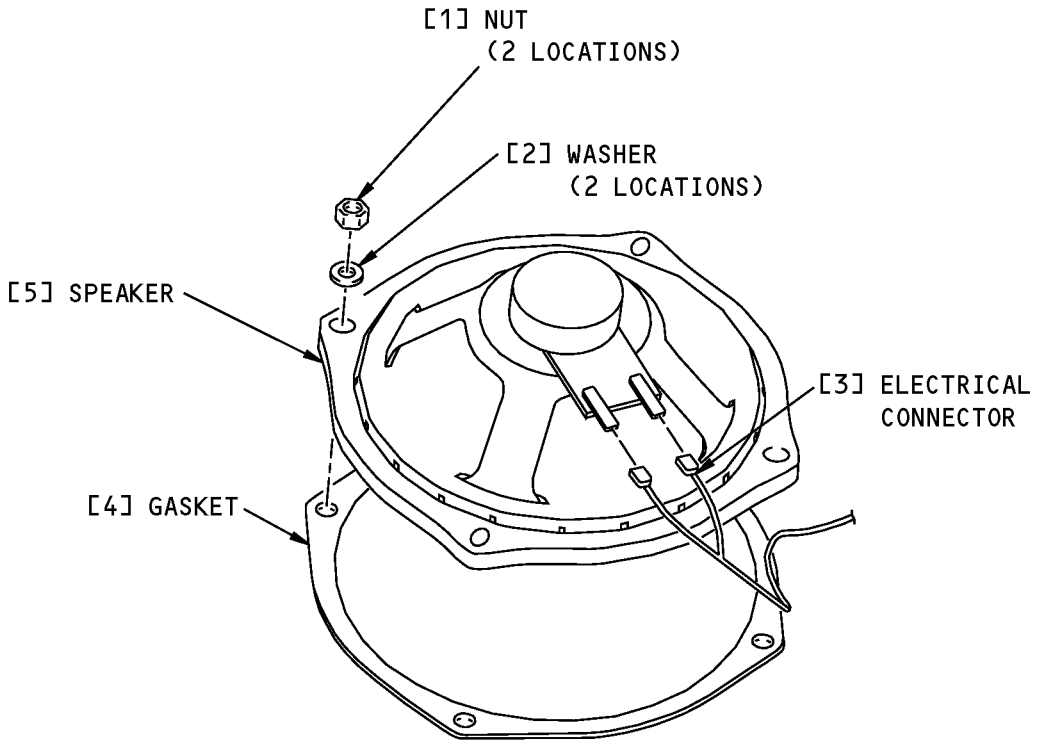


Passenger Service Unit Speaker Installation
Figure 401 (Sheet 1 of 2)/23-31-02-990-801

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PASSENGER SERVICE UNIT (PSU) SPEAKER (EXAMPLE)

B

**Passenger Service Unit Speaker Installation
Figure 401 (Sheet 2 of 2)/23-31-02-990-801**

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TASK 23-31-02-400-801

3. Passenger Service Unit (PSU) Speaker Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Installation Procedure

SUBTASK 23-31-02-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-02-420-001

- (2) Install the PSU speaker:
 - (a) Install the speaker gasket [4].
 - (b) Install the speaker [5] on the PSU assembly.
 - 1) Make sure the gasket is level after the speaker installation.
 - (c) Install the washers [2] and nuts [1].
 - (d) Connect the electrical connectors [3] to the speaker transformer terminals.
 - 1) Make sure the electrical connectors are connected to the same terminals that they were removed from.
 - (e) Connect the PSU electrical connector.
 - (f) Close the PSU panel assembly.

SUBTASK 23-31-02-860-003

- (3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

D. Installation Test

SUBTASK 23-31-02-860-004

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-02-710-001

- (2) Do a test of the PSU speaker operation:
 - (a) Lift a handset from an attendant station.
 - (b) Set the handset to PA.

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- (c) Push the PTT button on the handset.
- (d) Make an announcement on the PA system.
 - 1) Make sure you can hear the announcement on the new PSU speaker.
- (e) Put the handset back in the cradle.

SUBTASK 23-31-02-860-005

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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ATTENDANT SPEAKER - REMOVAL/INSTALLATION

1. General

A. This procedure contains:

- (1) A removal of the attendant speaker
- (2) An installation of the attendant speaker.

B. The attendant speaker is in the header panel over the door. You must remove the door header panel to get access to the speaker.

TASK 23-31-03-000-801

2. Attendant Speaker Removal

(Figure 401)

A. References

Reference	Title
25-21-24-000-801	Doorway Header Panel Removal, Aft Doors (P/B 401)
25-21-30-020-801	Doorway Header Panel Removal, Forward Entry Door (P/B 401)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Removal Procedure

SUBTASK 23-31-03-860-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-03-010-002

(2) Do this task for the forward attendant speaker: Doorway Header Panel Removal, Forward Entry Door, TASK 25-21-30-020-801

SUBTASK 23-31-03-010-001

(3) Do this task for the aft attendant speaker: Doorway Header Panel Removal, Aft Doors, TASK 25-21-24-000-801

SUBTASK 23-31-03-020-001

(4) Do these steps to remove the attendant speaker [1]:

- (a) Identify the location of the electrical wires on the speaker transformer terminals.
- (b) Disconnect the two electrical connectors [2] from the speaker [1].
- (c) Remove the screw [3] and the speaker [1].

————— **END OF TASK** —————

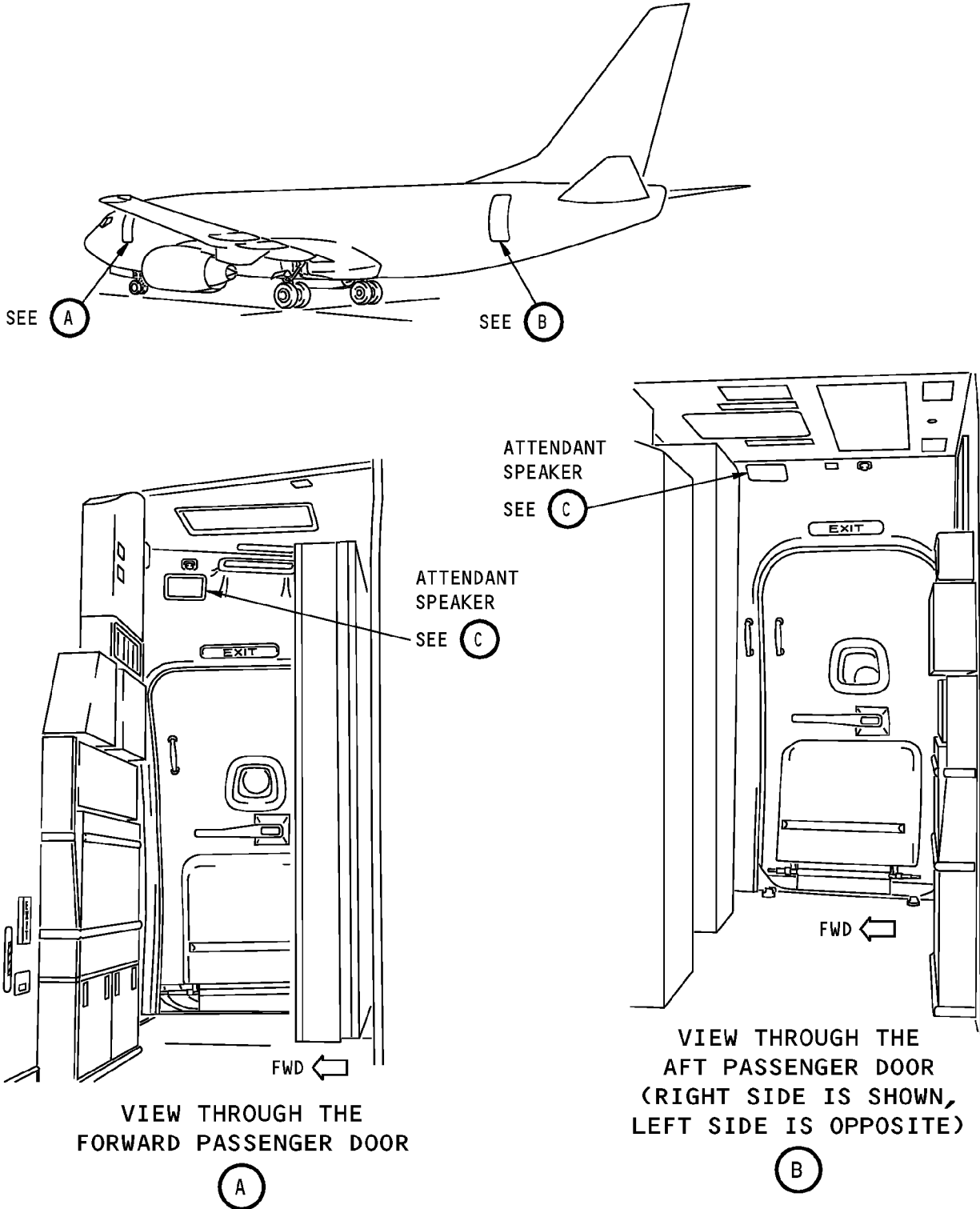
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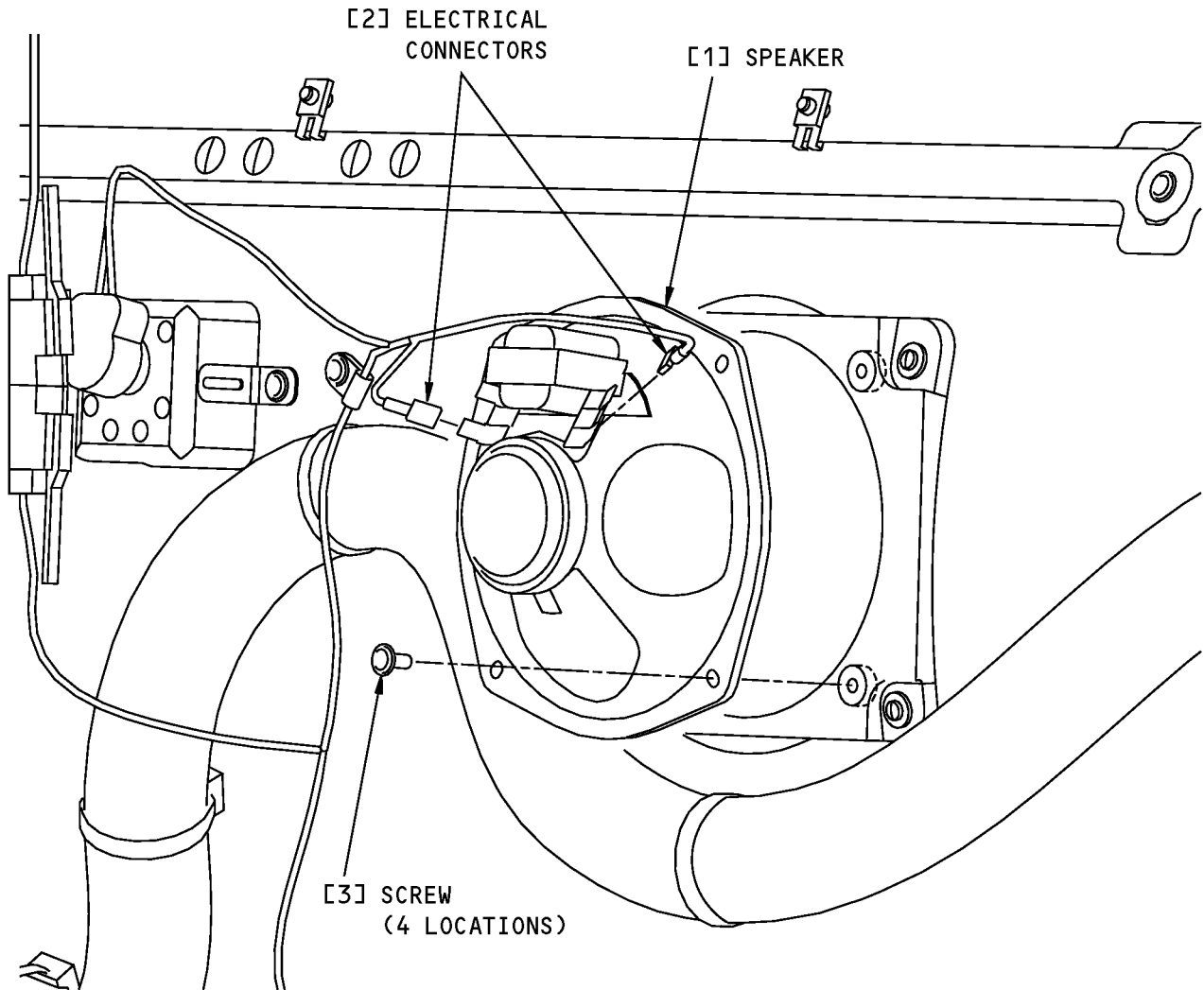
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**Attendant Speaker Installation
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ATTENDANT SPEAKER



**Attendant Speaker Installation
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TASK 23-31-03-400-801

3. Attendant Speaker Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
25-21-24-400-801	Doorway Header Panel Installation, Aft Doors (P/B 401)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Speaker	23-31-03-13A-035	HAP 001-013, 015-026
		23-31-03-32-040	HAP 001-013, 015-026
		23-31-03-93-035	HAP 028-036
		23-31-03-93A-035	HAP 037-054, 101-999

C. Location Zones

Zone	Area
200	Upper Half of Fuselage

D. Installation Procedure

SUBTASK 23-31-03-420-001

(1) Do these steps to install the attendant speaker:

- (a) Hold the speaker [1] in the correct position.
- (b) Install the speaker [1] with the screw [3].
- (c) Connect the two electrical connectors [2] to the speaker [1].

1) Make sure the electrical connectors are connected to the same terminals that they were removed from.

SUBTASK 23-31-03-410-002

(2) Do this task for the forward attendant speaker: Doorway Header Panel Installation, Aft Doors, TASK 25-21-24-400-801

SUBTASK 23-31-03-410-001

(3) Do this task for the aft attendant speaker: Doorway Header Panel Installation, Aft Doors, TASK 25-21-24-400-801

SUBTASK 23-31-03-860-002

(4) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

E. Installation Test

SUBTASK 23-31-03-860-003

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-03-710-001

(2) Do a test of the attendant speaker operation:

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- (a) Push the call button on a passenger services unit (PSU).
 - 1) Make sure that you can hear one high chime from all the attendant speakers.
 - 2) Make sure the PSU call light comes on.
- (b) Push the call button on a PSU one more time.
 - 1) Make sure that the PSU call light goes off.

SUBTASK 23-31-03-860-004

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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LAVATORY SPEAKER - REMOVAL/INSTALLATION

1. General

A. This procedure contains:

- (1) A removal of the lavatory speaker
- (2) An installation of the lavatory speaker.

B. The location of the lavatory speaker is in the passenger service unit (PSU) in the ceiling.

TASK 23-31-05-000-801

2. Lavatory Speaker Removal

(Figure 401)

A. Tools/Equipment

Reference	Description
STD-1073	Wire - Standard, 18-22 Gauge, Insulation Removed

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Removal Procedure

SUBTASK 23-31-05-860-011

- (1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-05-020-001

- (2) Do the steps that follow to remove the lavatory speaker [1]:

- (a) Open the passenger service unit (PSU).
 - 1) Put the 18-22 gauge insulation removed wire, STD-1073 in the holes of the PSU face panel to open the assembly.
- (b) Hold the PSU panel.
 - 1) Push the spring clip with the 18-22 gauge insulation removed wire, STD-1073 to release the assembly.
- (c) Slowly lower the PSU panel assembly until the lanyard can hold the PSU.
- (d) Identify the location of the speaker wires on the speaker transformer terminals.
- (e) Disconnect the electrical connectors [9] from the speaker transformer terminals.
- (f) Remove the screws [2] and [8], washers [3] and [7], spacers [5] and speaker [1].

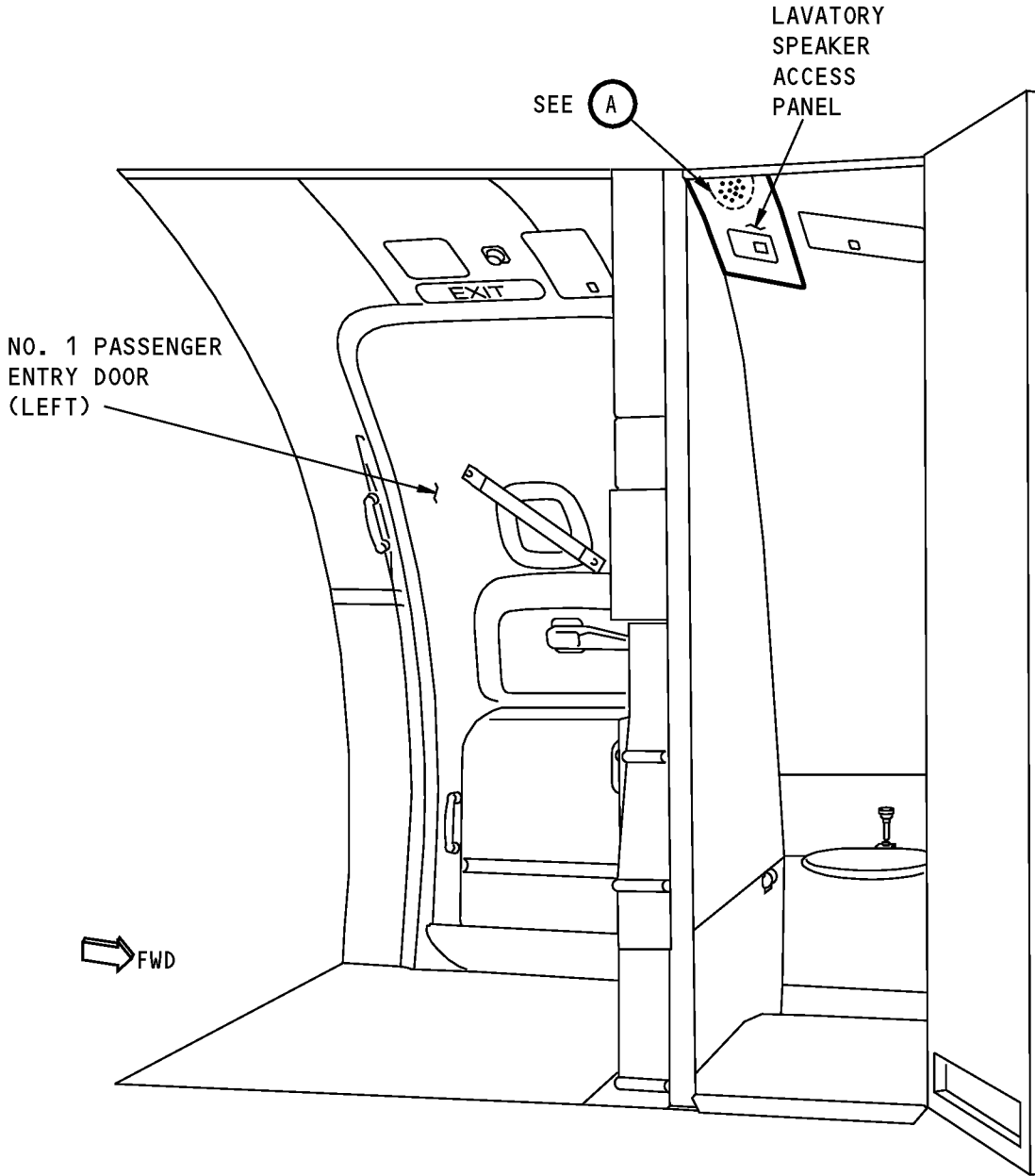
————— **END OF TASK** —————

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**PASSENGER COMPARTMENT ENTRYWAY
(TYPICAL)**

**Lavatory Speaker Installation
Figure 401 (Sheet 1 of 2)/23-31-05-990-801**

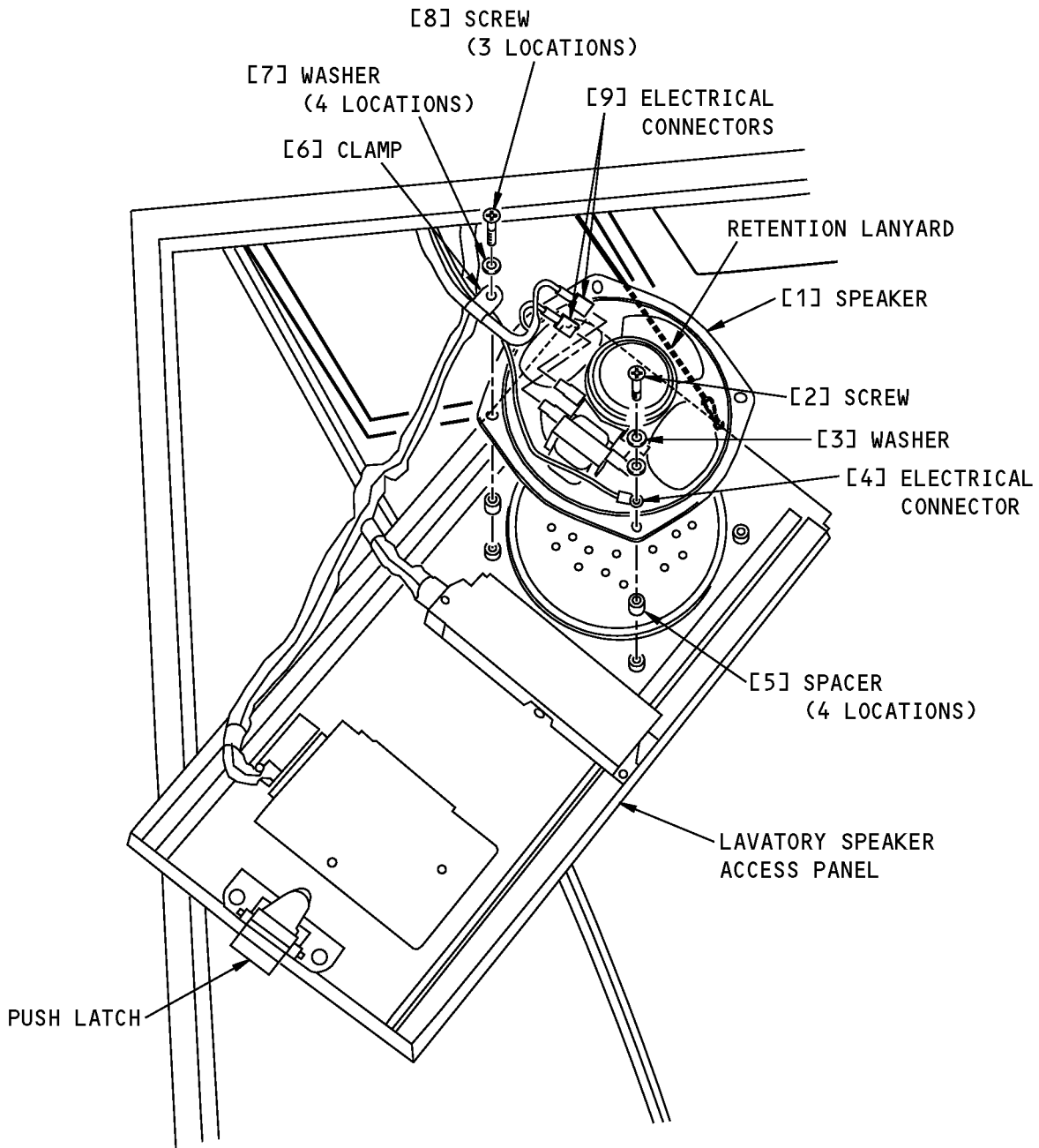
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A

Lavatory Speaker Installation
Figure 401 (Sheet 2 of 2)/23-31-05-990-801

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TASK 23-31-05-400-801

3. Lavatory Speaker Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
200	Upper Half of Fuselage

C. Installation Procedure

SUBTASK 23-31-05-860-008

- (1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-31-05-420-001

- (2) Do the steps that follow to install the lavatory speaker [1]:
 - (a) Hold the speaker [1] in the correct position.
 - (b) Make sure the clamp [6] and the electrical connector [4] are in the correct position.
 - (c) Install the screws [2] and [8], washers [3] and [7], and spacers [5].
 - (d) Attach the electrical connectors [9] to the speaker [1].
 - 1) Make sure the electrical connectors are connected to the same terminals that they were removed from.
 - (e) Push the PSU panel assembly up until it closes to the usual position.

SUBTASK 23-31-05-860-010

- (3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	4	C00082	COMMUNICATIONS PA AMPL BAT

D. Installation Test

SUBTASK 23-31-05-860-004

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-05-710-001

- (2) Do a test of the PSU speaker operation:
 - (a) Lift the PA microphone from at an attendant station.
 - (b) Push the PTT button on the microphone.
 - (c) Make an announcement on the PA system.
 - 1) Make sure you can hear the announcement on the new PSU speaker.

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(d) Put the microphone back in its cradle.

SUBTASK 23-31-05-860-005

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PRE-RECORDED ANNOUNCEMENT MACHINE (PRAM) - MAINTENANCE PRACTICES

1. General

A. This procedure contains:

HAP 006-013, 015-026, 028-030

- (1) Tape Replacement
- (2) Tape Cleaning

HAP 031-054, 101-999

- (3) Maintenance modes
- (4) Software configuration check
- (5) Software installation.

HAP 006-013, 015-026, 028-030

TASK 23-31-07-900-801

2. Tape Replacement

A. General

- (1) This procedure replaces the cassette in the PRAM.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

D. Replacement Procedure

SUBTASK 23-31-07-860-012

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-07-900-004

- (2) Do these steps to replace the cassette:
 - (a) Loosen the quarter-turn fastener for the tape access door on the front of the PRAM.
 - (b) Loosen the quarter-turn fastener for the tape access door on the front of the PRAM.
 - (c) Open the tape access door.
 - (d) Remove the tape cassette from the PRAM.
 - (e) Put the new cassette into the PRAM.
 - 1) Make sure the tape is against the PRAM head.

NOTE: The tape is installed correctly when you see the label on the cassette.

- (f) Close the door on the PRAM.
- (g) Tighten the quarter-turn fastener on the tape access door.

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HAP 006-013, 015-026, 028-030 (Continued)

E. Boarding Music Test

SUBTASK 23-31-07-710-010

(1) Do this test of the boarding music:

- (a) Touch the applicable selections on the video system control unit (VSCU) to turn on the boarding music.
- (b) Adjust the volume so that you can hear the boarding music clearly.
 - 1) Make sure you can hear clear music on the PSU, lavatory, and attendant speakers.

SUBTASK 23-31-07-860-013

(2) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

TASK 23-31-07-160-801

3. Tape Head Cleaning

A. General

(1) This task cleans the tape path and the heads on the tape reproducer.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Consumable Materials

Reference	Description	Specification
B00130	Alcohol - Isopropyl	TT-I-735
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5
G01659	Swab - Disposable, Cotton Or Rayon Applicator	GG-A-616

D. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

E. Cleaning Procedure

SUBTASK 23-31-07-860-014

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-07-020-004

(2) Do these steps to remove the cassette:

- (a) Loosen the quarter-turn fastener for the tape access door on the front of the tape reproducer.
- (b) Open the tape access door.
- (c) Remove the tape cassette from the tape reproducer.

SUBTASK 23-31-07-160-001

(3) Do these steps to clean the tape reproducer heads and the tape path:

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HAP 006-013, 015-026, 028-030 (Continued)

- (a) Make the swab, G01659, or cotton wiper, G00034, moist with alcohol, B00130.
- (b) Carefully clean the tape head or tape path with the swab, G01659, or cotton wiper, G00034, until there is no change in the color of the applicator.
- (c) Let the cleaned surfaces dry fully.

SUBTASK 23-31-07-420-003

(4) Do these steps to install the cassette:

- (a) Put the new cassette into the tape reproducer.
 - 1) Make sure the tape is against the tape reproducer head.

NOTE: The tape is installed correctly when you see the label on the cassette.

- (b) Close the door on the tape reproducer.
- (c) Tighten the quarter-turn fastener on the tape access door.

F. Boarding Music Test

SUBTASK 23-31-07-710-014

(1) Do this test of the boarding music:

- (a) Touch the applicable selections on the video system control unit (VSCU) to turn on the boarding music.
- (b) Adjust the volume so that you can hear the boarding music clearly.
 - 1) Make sure you can hear clear music on the PSU, lavatory, and attendant speakers.

SUBTASK 23-31-07-860-015

(2) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

HAP 031-054, 101-999

TASK 23-31-07-820-801

4. Pre-Recorded Announcement Machine (PRAM) Maintenance Modes

A. General

- (1) You use the PRAM maintenance modes to make adjustments to the announcement playback operation. These are the maintenance modes:
 - (a) UPDATE FILES - used to load, delete, or alter announcement or music files in memory.
 - (b) EMERGENCY REPEAT - sets the number of times that the emergency decompression announcement repeats when triggered.
 - (c) PLAY MODE SETTING - selects single playback mode or sequential playback mode.
 - (d) MUSIC LEVEL SETTING - sets the boarding music volume level.
 - (e) ANNC LEVEL SETTING - sets the announcement volume level.

B. References

Reference	Title
23-31-07-000-801	Pre-Recorded Announcement Machine (PRAM) Removal (P/B 401)
23-31-07-400-801	Pre-Recorded Announcement Machine (PRAM) Installation (P/B 401)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

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HAP 031-054, 101-999 (Continued)

C. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

D. Procedure

SUBTASK 23-31-07-820-001

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-07-820-002

(2) Do these steps to enter the maintenance mode:

(a) Push the RV (review) and ENT (enter) keys at the same time.

1) The display screen shows:

MAINTENANCE MODE

PASSWORD

PLEASE INPUT

(b) Push the number keys to enter the password (7360).

1) Make sure the MAINTENANCE MODE menu screen appears in the display window.

NOTE: If an error message appears in line three and QUIT:STOP appears in line 4, the password entry was incorrect. Press STOP to clear the screen and then press RV and ENT to retry the password entry.

(c) Use the "2" key (up arrow) or "8" key (down arrow) to move through the list of maintenance modes.

(d) When the applicable maintenance mode screen is in the display, push the ENT key.

SUBTASK 23-31-07-820-003

(3) Do these steps to do the UPDATE FILES procedure:

(a) Select the UPDATE FILES mode from the MAINTENANCE MODE menu.

1) The display screen shows:

MAINTENANCE MODE

UPDATED FILES

INSERT CARD?

OK:START

NOTE: Do not use the DOWNLOAD SOFTWARE mode. Make sure that the "UPDATED FILES" is shown on the screen.

(b) Remove the PRAM shroud (TASK 23-31-07-000-801).

(c) Insert a pre-programmed PC card into the card slot.

(d) Push the START key.

1) The PRAM reads the PC card label and the label contents show in line 3 of the display.

2) A few seconds later START DOWNLOAD shows in line 3 and CANCEL:STOP appears in line 4.

NOTE: To cancel the download press STOP.

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HAP 031-054, 101-999 (Continued)

- (e) Push the ENT key.
 - 1) PLEASE WAIT shows in line 3 and the file name being loaded shows in line 4.

NOTE: The amount of time required for loading depends on the number and size of files to be loaded.
 - 2) When downloading is completed the screen shows:
AIRLINE TST
CARD ID 001
- (f) Remove the PC card from the card slot.
- (g) Re-install the PRAM shroud (TASK 23-31-07-400-801).

SUBTASK 23-31-07-820-004

- (4) Do these steps to do the EMERGENCY REPEAT mode procedure:
 - (a) Select the EMERGENCY REPEAT mode from the MAINTENANCE MODE menu.
 - 1) The EMERGENCY REPEAT screen shows in the display window.
 - 2) Line 3 shows the current emergency announcement repeat number.

NOTE: The emergency repeat number may be set from 1 to 16.
 - (b) Use the "2" or "8" keys to select the repeat number setting.
 - (c) Push the ENT key.
 - (d) The display returns to the MAINTENANCE MODE menu screens.

SUBTASK 23-31-07-820-006

- (5) Do these steps to do the MUSIC or ANNC LEVEL SETTING mode procedure.

NOTE: The MUSIC LEVEL and ANNC LEVEL SETTING mode procedures are identical except for the screen title in line 2 of the display.

 - (a) Select the MUSIC LEVEL mode or the ANNC LEVEL SETTING mode from the MAINTENANCE MODE menu.
 - 1) The MUSIC LEVEL or ANNC LEVEL SETTING screen shows in the display with the current volume level setting in line 3.
 - (b) Use the "2" key or "8" key to select the correct volume level setting.

NOTE: The volume level can be set anywhere from -6dB to +6dB in 2dB steps.
 - (c) When the volume level setting is correct, push the ENT key.
 - 1) The display returns to the MAINTENANCE MODE menu.

SUBTASK 23-31-07-820-005

- (6) Do these steps to do the PLAY MODE SETTING mode procedure.
 - (a) Select the PLAY MODE SETTING mode from the MAINTENANCE MODE menu.
 - 1) The PLAY MODE SETTING screen shows in the display with the current play mode setting in line 2.
 - (b) Use the "2" or "8" keys to switch between the play modes.

NOTE: The plays modes are SINGLE or SEQUENTIAL.
 - (c) When the desired play mode is correct, push the ENT key.

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HAP 031-054, 101-999 (Continued)

1) The display returns to the MAINTENANCE MODE menu.

SUBTASK 23-31-07-820-007

(7) To exit from the MAINTENANCE MODE push the STOP key.

SUBTASK 23-31-07-860-005

(8) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

TASK 23-31-07-750-801

5. Pre-Recorded Announcement Machine (PRAM) Software Configuration Check

A. General

(1) This software configuration check makes sure that the PRAM has the correct software installed.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

D. Procedure

SUBTASK 23-31-07-860-007

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-07-730-001

(2) Do these steps to do a software configuration check of the PRAM:

NOTE: You must know the correct software part numbers for the PRAM. For the PRAM to be an approved installation, software with the correct part numbers must be installed.

(a) Push the ENT key on the PRAM.

(b) Push the RV (review) and ENT (enter) keys at the same time.

1) The display screen shows:

MAINTENANCE MODE

PASSWORD

PLEASE INPUT

(c) Push the number keys to enter the password (7360).

1) The screen displays:

MAINTENANCE MODE

UPDATE FILES

FWD:8 REV:2 OK:ENT

(d) Push the "8" key (up arrow) 2 times.

1) The screen displays:

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HAP 031-054, 101-999 (Continued)

MAINTENANCE MODE
SOFTWARE P/N & VER.
FWD:8 REV:2 OK:ENT

- (e) Push the ENT key.
 - 1) The software part number is displayed on line 3 and the version number is displayed on line 4.
- (f) Make sure the correct software part numbers show.
 - 1) If the software part number is not correct, then do this task: Pre-Recorded Announcement Machine (PRAM) Software Installation, TASK 23-31-07-470-801 or replace the PRAM with one that has the correct software.
- (g) Push the ENT key to exit the MAINTENANCE MODE.

SUBTASK 23-31-07-860-011

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

TASK 23-31-07-470-801

6. Pre-Recorded Announcement Machine (PRAM) Software Installation

A. General

- (1) The operational (OPS) software is stored in the flash memory devices in the PRAM.
- (2) Flash card with the correct OPS software is necessary for this task.

B. References

Reference	Title
23-31-07-000-801	Pre-Recorded Announcement Machine (PRAM) Removal (P/B 401)
23-31-07-400-801	Pre-Recorded Announcement Machine (PRAM) Installation (P/B 401)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

D. Procedure

SUBTASK 23-31-07-860-009

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-31-07-470-002

NOTE: You must know the correct software part numbers for the PRAM. For the PRAM to be an approved installation, software with the correct part numbers must be installed.

- (2) Do these steps to install the software:
 - (a) Push the RV (review) and ENT (enter) keys at the same time.
 - (b) Push the number keys to enter the password (7360).
 - (c) Use the “2” key (up arrow) or “8” key (down arrow) to select the Download Software mode.

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HAP 031-054, 101-999 (Continued)

- (d) Push the ENT key.
 - 1) The display screen shows:
MAINTENANCE MODE
DOWNLOAD SOFTWARE
INSERT CARD?
OK: START CANCEL:STOP
- (e) Remove the PRAM shroud (TASK 23-31-07-000-801).
- (f) Insert the flash card for the OPS software into the PC Card Slot on the PRAM.
- (g) Push the START key.
- (h) After the software installation is completed, push the ENT key.
- (i) Remove the flash card from the PC Card Slot on the PRAM.
- (j) Re-install the PRAM shroud (TASK 23-31-07-400-801).

SUBTASK 23-31-07-750-002

- (3) Do this task: Pre-Recorded Announcement Machine (PRAM) Software Configuration Check, TASK 23-31-07-750-801.

SUBTASK 23-31-07-860-010

- (4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PRE-RECORDED ANNOUNCEMENT MACHINE (PRAM) - REMOVAL/INSTALLATION

1. General

A. This procedure contains:

- (1) A removal of the PRAM.
- (2) An installation of the PRAM.

TASK 23-31-07-000-801

2. Pre-Recorded Announcement Machine (PRAM) Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)

B. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

C. Removal Procedure

SUBTASK 23-31-07-860-001

- (1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	9	C00080	ENTERTAINMENT PA TAPE RPDR AC

HAP 031-054, 101-999

SUBTASK 23-31-07-020-001

- (2) Do these steps to remove the PRAM:

- (a) Remove the three screws [6] that attach the cover [5] to the PRAM [1].
- (b) Remove the cover [5] from the PRAM [1].
- (c) Remove the four screws [3] and washers [4] that attach PRAM to the wall.
- (d) Pull the PRAM [1] from the wall.
- (e) Remove the electrical connector from the rear of the PRAM[1].

HAP 006-013, 015-026, 028-030

SUBTASK 23-31-07-020-002

- (3) Remove the PRAM. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

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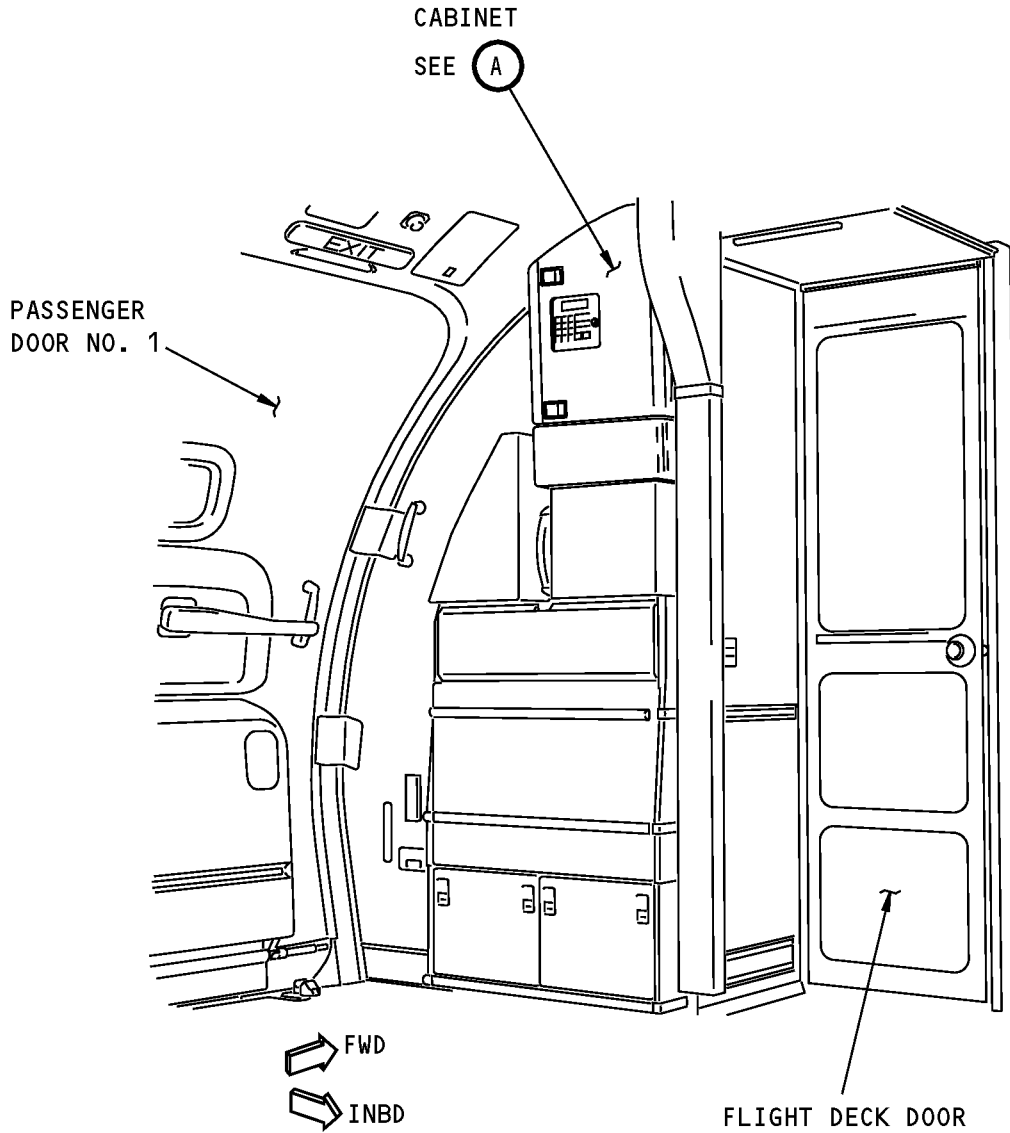
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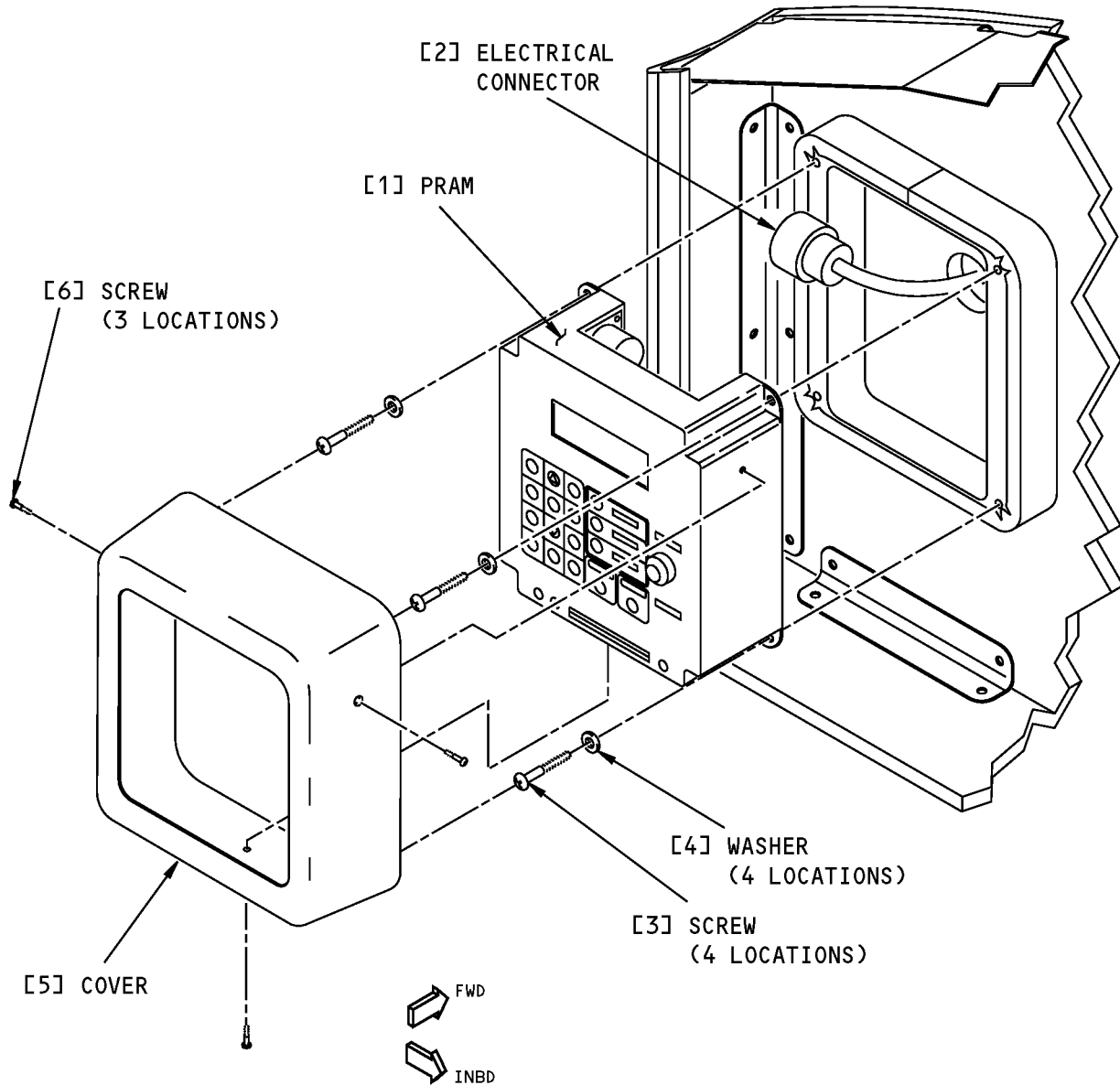
**Boarding Music Reproducer Installation
Figure 401 (Sheet 1 of 3)/23-31-07-990-801**

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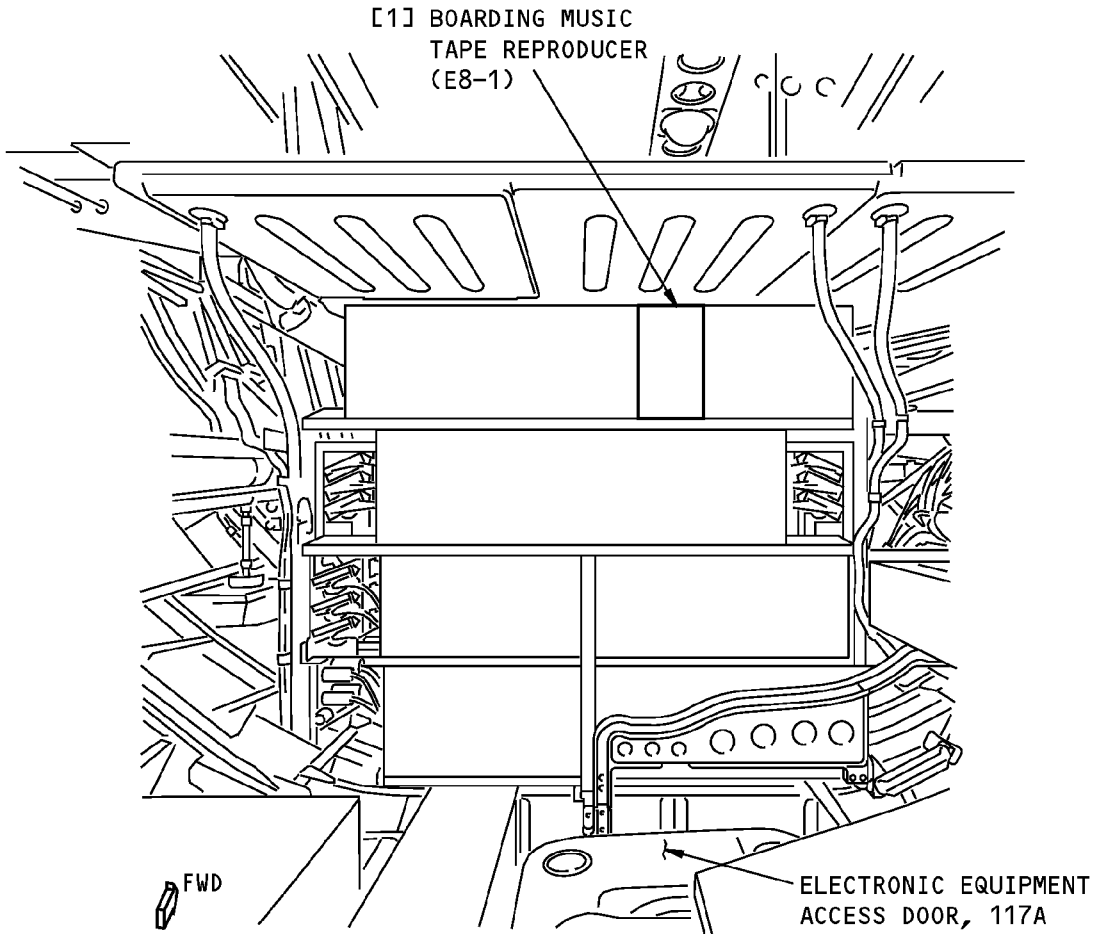
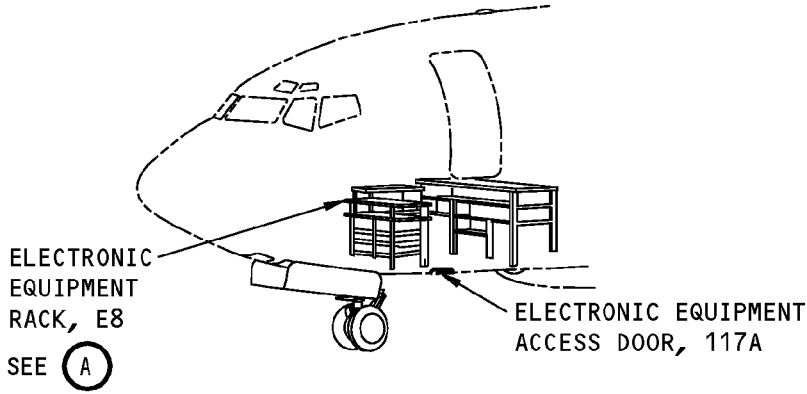
**Boarding Music Reproducer Installation
Figure 401 (Sheet 2 of 3)/23-31-07-990-801**

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ELECTRONIC EQUIPMENT RACK, E8

(A)

**Boarding Music Reproducer Installation
Figure 401 (Sheet 3 of 3)/23-31-07-990-801**

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TASK 23-31-07-400-801

3. Pre-Recorded Announcement Machine (PRAM) Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
23-31-07-750-801	Pre-Recorded Announcement Machine (PRAM) Software Configuration Check (P/B 201)
23-31-07-820-801	Pre-Recorded Announcement Machine (PRAM) Maintenance Modes (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

C. Procedure

HAP 031-054, 101-999

SUBTASK 23-31-07-400-001

- (1) Do these steps to install the PRAM:
 - (a) Connect the electrical connector to the rear of the PRAM [1].
 - (b) Put the PRAM [1] over the bolt holes on the wall.
 - (c) Install the four screws [3] and washers [4] that attach the PRAM [1] to the wall.
 - (d) Put the PRAM cover [5] over the bolt holes on the PRAM [1].
 - (e) Install the three screws [6] that attach the cover [5] to the PRAM [1].

HAP 006-013, 015-026, 028-030

SUBTASK 23-31-07-420-001

- (2) Install the PRAM. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

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SUBTASK 23-31-07-860-002

- (3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	9	C00080	ENTERTAINMENT PA TAPE RPDR AC

D. Installation Test Procedure

SUBTASK 23-31-07-860-004

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

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HAP 031-054, 101-999

SUBTASK 23-31-07-750-001

- (2) Do this task: Pre-Recorded Announcement Machine (PRAM) Software Configuration Check, TASK 23-31-07-750-801.

SUBTASK 23-31-07-470-003

- (3) If it is necessary to set the PRAM maintenance modes, do this task: Pre-Recorded Announcement Machine (PRAM) Maintenance Modes, TASK 23-31-07-820-801.

SUBTASK 23-31-07-710-002

- (4) Do this test of the PRAM:
- (a) Push the ENT button on the PRAM.
 - (b) Push the MUSIC button.
 - (c) Push '1' on the PRAM.
 - (d) Push the START button.
 - (e) Adjust the volume control if it is necessary.
 - 1) Make sure you hear clear music on all of the speakers.

HAP 006-013, 015-026, 028-030

SUBTASK 23-31-07-710-006

- (5) Do this test of the PRAM:
- (a) Touch the applicable selections on the video system control unit (VSCU) to play several pre-recorded announcements.
 - (b) Adjust the volume control if it is necessary.
 - 1) Make sure you hear clear audio on all of the speakers.

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SUBTASK 23-31-07-860-003

- (6) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PASSENGER VIDEO SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure has one task: an operational test of the passenger video system. The test will make sure that the system operates correctly.

TASK 23-32-00-710-802

2. Passenger Video System - Operational Test

A. References

Reference	Title
23-31-00-740-801	Passenger Address System - Operational Test (P/B 501)
23-32-02-700-801	Video System BITE Test (P/B 201)
23-32-06 P/B 201	DIGITAL INTERFACE UNIT - MAINTENANCE PRACTICES
23-34-00-710-801	Passenger Entertainment System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

B. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Prepare For Test

SUBTASK 23-32-00-860-001

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-00-710-029

- (2) Do these steps to prepare for the test:
 - (a) Make sure the passenger address system is serviceable (TASK 23-31-00-740-801).
 - (b) Make sure the passenger entertainment system is serviceable (TASK 23-34-00-710-801).

HAP 001-013, 015-026, 028-054, 104-999

- (c) Make sure the inertial reference system is aligned and in the NAV mode. To align the IRS, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

HAP ALL

- (d) Make sure the power button on the video system control unit (VSCU) is in the off position.
- (e) Make sure the ENTERTAINMENT IFE button on the forward attendant's panel (P13) is set to the off position.

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HAP 031-054, 101-999; HAP 001-013, 015-026, 028-030 POST SB 737-24-1147

- (f) Push the IFE/PASS SEAT switch on the pilot's overhead panel P5 to the ON position.

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- (g) Push the ENTERTAINMENT IFE button on the forward attendant's panel to the on position.
 - 1) Make sure its light comes on.
- (h) Push the power button on the video system control unit (VSCU) to the on position.
 - 1) Make sure its light comes on.
 - 2) Make sure the power light on the video reproducer(s) (VRs) is on.
- (i) Make sure the PA volume control is set to MIN.
- (j) Connect headphones to the jack on the front of the VSCU.

D. Procedure

SUBTASK 23-32-00-740-001

- (1) Do these steps to do a BITE test:
 - (a) Do this task: Video System BITE Test, TASK 23-32-02-700-801

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-00-710-033

- (2) Do this test for each video reproducer (repeat if more than one video reproducer installed):
 - (a) Put a media source (tape, CD, or DVD) into the video reproducer.
 - (b) Push the MODE SELECT button on the VSCU until the MANUAL light comes on.
 - 1) Make sure the MANUAL OPERATION screen shows on the VSCU.
 - (c) Push the UP/DOWN arrow buttons on the VSCU until ZONE CONTROL is selected.
 - (d) Push the ENTER button.
 - (e) Push the SEL button until the appropriate video reproducer is selected.
 - (f) If the status of ZN1 VTR X PWR is OFF, do this step:
 - 1) Push the UP/DOWN arrow buttons until ZN1 VTR X PWR status OFF is selected.
 - 2) Push the SEL button.
 - a) Make sure the status changes to ON.
 - (g) Push the ENTER button.
 - 1) Make sure the MANUAL OPERATION screen is shown on the VSCU.
 - 2) Make sure that all the monitors lower from the stowed position.
 - (h) Push the PLAY button on the video reproducer.
 - 1) Make sure that you see video from the video reproducer on all monitors.
 - (i) Do these steps:
 - 1) Put the PCU channel selector to a channel with audio from the video system.
 - a) Make sure you hear the audio from the video system on the headphones.
 - (j) Push the ENTER button on the VSCU until the ZONE CONTROL menu is shown.
 - 1) Make sure that the status of ZONE 1 VTR X STAT is PLAY.
 - (k) If you need to test another video reproducer, push the STOP button on the video reproducer currently being tested.

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HAP 001-013, 015-026, 028-030 (Continued)

HAP 031-054, 101-999

SUBTASK 23-32-00-710-045

- (3) Do this test of the passenger video system:
- (a) If it is necessary, push the power button on the video system control unit (VSCU) to the on position.
 - 1) Make sure the green PASS light stays on.
 - 2) Make sure the video reproducer (VR) power is on.
 - (b) Make sure the ALL ZONES LED is green.
 - 1) If the ALL ZONES LED is not green, push the MODE SELECT button to select ALL ZONES.
 - (c) Make sure the main menu is displayed.
 - (d) Do these steps to play video from the VR:
 - 1) Put a media source (tape, CD, or DVD) in the VR if necessary.
 - 2) Push the number on the VSCU numeric keypad to select PLAY VIDEO.
 - a) Make sure the cabin monitors lower from the stowed position.
 - b) Make sure you see video from the VR on the cabin monitors.
 - 3) Push the STOP button on the VSCU.
 - 4) Push the number on the VSCU numeric keypad to select SCREENS OFF.
 - a) Make sure the monitors raise to the stowed position.
 - (e) Push the power button on the VSCU to the off position.
 - (f) Close the access door for the video control center if necessary.

HAP ALL

SUBTASK 23-32-00-710-003

- (4) Do this test of the PA announcement:

HAP 001-013, 015-026, 028-037, 039, 040

- (a) Push the UP/DOWN arrow buttons until the ZN1 VTRX PA status 0 is selected.

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- (b) Adjust the passenger address (PA) volume to a comfortable level.

HAP 001-013, 015-026, 028-037, 039, 040

- (c) Push the ENTER button.
 - 1) Make sure you hear the audio from the video system on the passenger address speakers.

HAP 038, 041-054, 101-999

- (d) Make the selection to play video from the video entertainment system.
 - 1) Make sure you hear the audio from the video system on the passenger address speakers.

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- (e) Make an announcement from an attendant's handset.
 - 1) Make sure that you hear the announcement from the attendant's handset on the PA speakers.
 - 2) Make sure you hear the announcement from the attendant's handset on the headphones.
 - 3) Make sure you do not hear audio from the video system on the PA speakers.

HAP 001-013, 015-026, 028-037, 039, 040

- 4) Make sure that the video program pauses during the announcement.

HAP ALL

- (f) Make a PA announcement from a pilot's station.
 - 1) Make sure that you hear the announcement from the pilot's station on the PA speakers.
 - 2) Make sure you hear the announcement from the pilot's station on the headphones.
 - 3) Make sure you do not hear audio from the video system on the PA speakers.

HAP 001-013, 015-026, 028-037, 039, 040

- 4) Make sure that the video program pauses during the announcement.

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-00-710-028

- (5) Do this test of the cabin information system:
 - (a) Make sure the applicable Airshow CD-ROM is installed in the DIU.
 - (b) Push the UP/DOWN arrow buttons until ZONE 1 SRC VTRX is selected.
 - (c) Push the SEL button until AUX7 is shown.
 - (d) Push the ENTER button.
 - 1) Make sure you see video from the cabin information system on the cabin video monitors.

HAP 038, 041-054, 104-999

SUBTASK 23-32-00-710-044

- (6) Do this test of the cabin information system:
 - (a) Make sure the main menu is displayed on the VSCU.
 - (b) Push the SEL button until AUX7 is displayed on the menu screen.
 - (c) Push the number on the VSCU numeric keypad to select PLAY VIDEO.
 - 1) Make sure you see video from the cabin information system on the cabin video monitors.

HAP ALL

SUBTASK 23-32-00-710-004

- (7) Do this test of cabin decompression:

CAUTION: IF YOU DO NOT OPEN THESE CIRCUIT BREAKERS, THE OXYGEN MASKS IN THE PASSENGER COMPARTMENT WILL BE RELEASED.

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(CAUTION PRECEDES)

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

CAPT Electrical System Panel, P18-3

Table with 4 columns: Row, Col, Number, Name. Rows: F 9 C00784 OXYGEN PASS RIGHT, F 10 C00783 OXYGEN PASS LEFT

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

CAPT Electrical System Panel, P18-3

Table with 4 columns: Row, Col, Number, Name. Rows: F 7 C00156 OXYGEN IND, F 8 C00785 OXYGEN MAN CONT

- (c) Set the MANUAL OXYGEN switch on the P5 overhead panel in the flight deck to ON.

- 1) Make sure the PASS OXY ON light on the P5-14 panel comes on.
2) Make sure all video monitors retract to the stowed position.
3) Make sure you do not see video on the monitors.
4) Make sure that all VRs are off.
5) Make sure that the VSCU preview screen is off.

- (d) Set the MANUAL OXYGEN switch to OFF.

- (e) Open and close this circuit breaker:

CAPT Electrical System Panel, P18-3

Table with 4 columns: Row, Col, Number, Name. Row: F 7 C00156 OXYGEN IND

- 1) Make sure the PASS OXY ON light on the P5-14 panel goes out.

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

CAPT Electrical System Panel, P18-3

Table with 4 columns: Row, Col, Number, Name. Rows: F 9 C00784 OXYGEN PASS RIGHT, F 10 C00783 OXYGEN PASS LEFT

HAP 001-013, 015-026, 028-037, 039, 040

HAP

SUBTASK 23-32-00-710-046

HAP

- (8) Do this test of the flight track server (FTS):

HAP

- (a) Make sure the applicable software configuration is loaded, (DIGITAL INTERFACE UNIT - MAINTENANCE PRACTICES, PAGEBLOCK 23-32-06/201).

HAP

- (b) Get access to the video control center.

HAP

HAP

- (c) Make the selections on the VSCU to display cabin information system video on the monitors in the passenger cabin.

HAP

HAP

- 1) Make sure you see video from the cabin information system on the cabin video monitors.

HAP

HAP

HAP ALL

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SUBTASK 23-32-00-840-001

- (9) Put the airplane back to its usual condition:
- (a) Push the EJECT button on all video reproducer.
 - (b) Remove the test media source (if applicable).
 - (c) Push the power button on the VSCU to the OFF position.
 - (d) Push the ENTERTAINMENT IFE button to the off position.

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- (e) Push the IFE/PASS SEAT switch on the pilot's overhead panel P5 to the OFF position.

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E. Procedure

SUBTASK 23-32-00-860-002

- (1) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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VIDEO REPRODUCER - REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks:
(1) A removal of the video reproducers.
(2) An installation of the video reproducers.

TASK 23-32-01-000-801

2. Video Reproducer Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the video reproducer.
(a) When you remove the video reproducer, do not supply the electrical power to the video system.
(2) The video reproducer(s) is/are installed in the video control center.

B. References

Table with 2 columns: Reference, Title. Row: 20-10-07-000-801, E/E Box Removal (P/B 201)

C. Location Zones

Table with 2 columns: Zone, Area. Includes sections for HAP 001-013, 015-026, 028-030 and HAP 031-054, 101-999.

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D. Video Reproducer Removal

SUBTASK 23-32-01-860-001

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

F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Lists circuit breakers C 5 C01450 and C 7 C01451.

SUBTASK 23-32-01-020-001

- (2) Do these steps to remove the video reproducer [1]:
(a) Get access to the video reproducer.

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- (b) Remove the video reproducer [1]. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— **END OF TASK** —————

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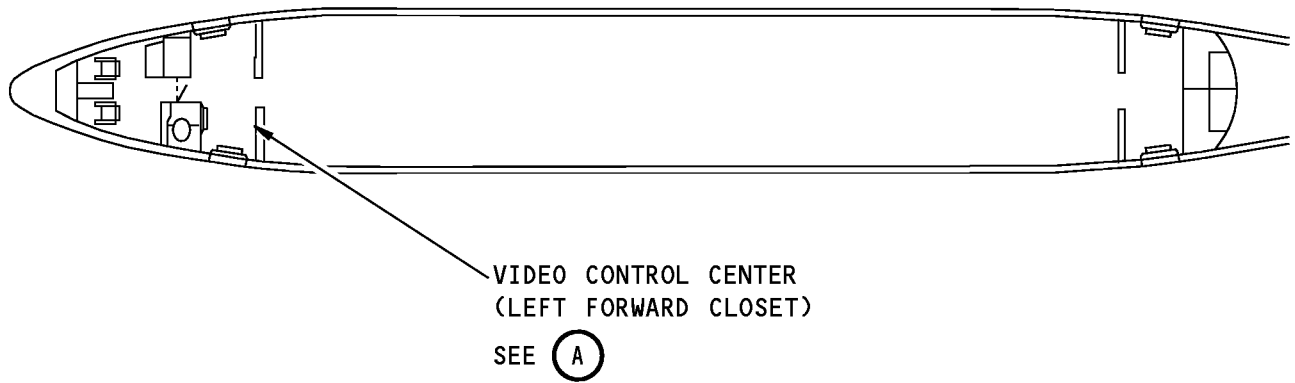
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**Video Reproducer (VR) Installation
Figure 401 (Sheet 1 of 3)/23-32-01-990-801**

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HAP 001-013, 015-026, 028-030

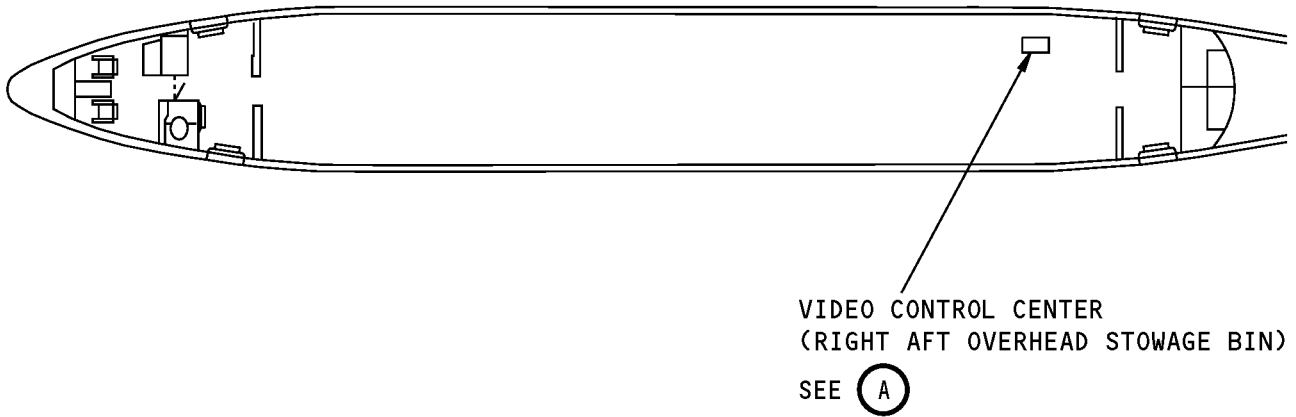
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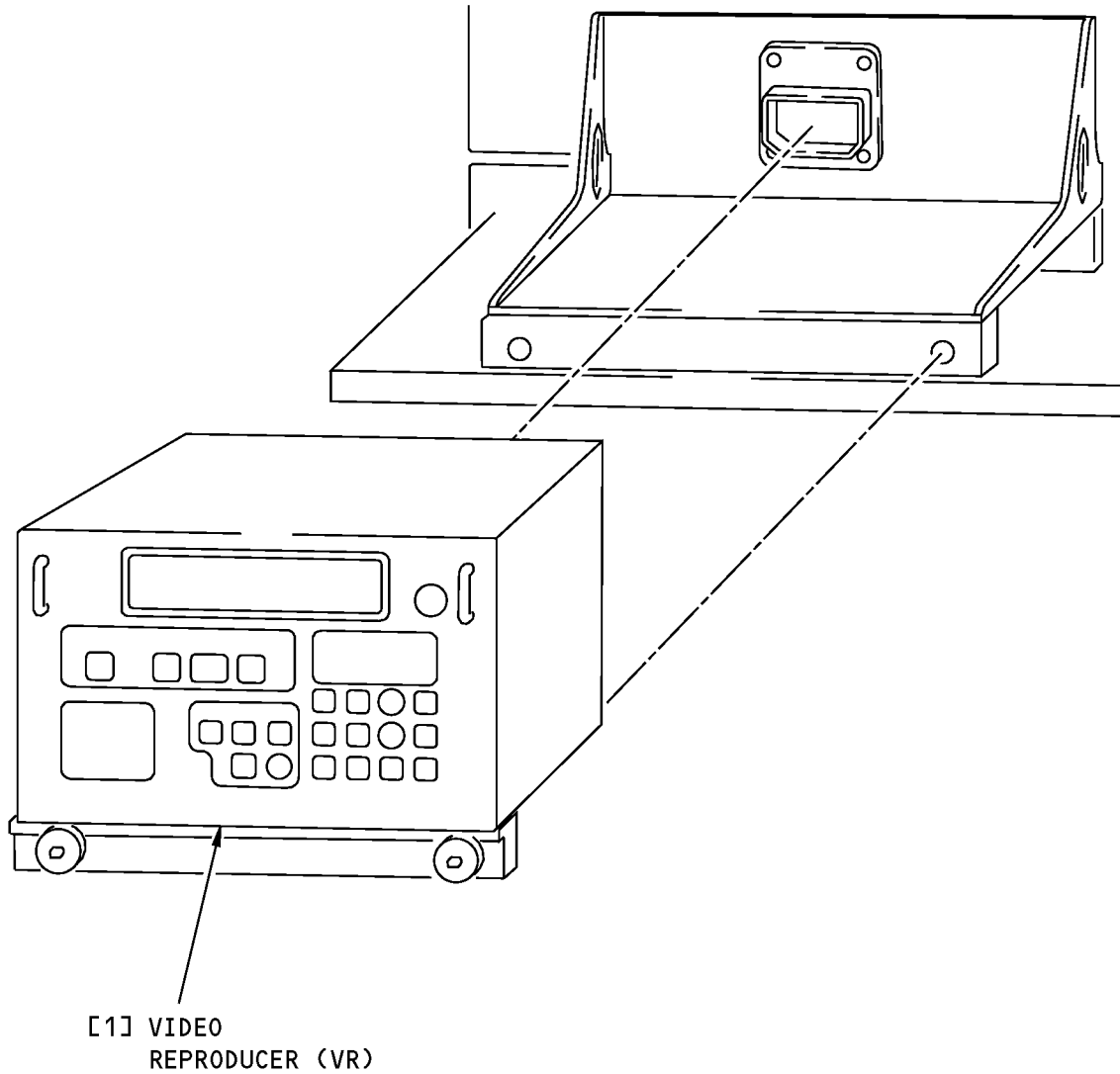
Video Reproducer (VR) Installation
Figure 401 (Sheet 2 of 3)/23-32-01-990-801

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**Video Reproducer (VR) Installation
Figure 401 (Sheet 3 of 3)/23-32-01-990-801**

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TASK 23-32-01-400-801

3. Video Reproducer Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the video reproducer.

B. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
HAP 001-013, 015-026, 028-030	
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
HAP 031-054, 101-999	
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

HAP ALL

D. Video Reproducer Installation

SUBTASK 23-32-01-420-001

(1) Do these steps to install the video reproducer [1]:

(a) Install the video reproducer [1]. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-32-01-860-003

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC
C	7	C01451	ENTERTAINMENT VID CONT CENTER AC

E. Video Reproducer Installation Test

SUBTASK 23-32-01-860-012

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-01-710-001

(2) Do this test of the passenger video system:

(a) Push the VSCU power button to the on position.

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HAP 001-013, 015-026, 028-030 (Continued)

- 1) After at least one minute, make sure that the green PASS light under the power button comes on.
- 2) Make sure that the POWER light on the video reproducer comes on.
- (b) Put a media source (tape, CD, or DVD) into the video reproducer.
- (c) Push the MODE SELECT button on the VSCU until the MANUAL light comes on.
 - 1) Make sure the MANUAL OPERATION screen shows on the VSCU.
- (d) Push the UP/DOWN arrow buttons on the VSCU until ZONE CONTROL is selected.
- (e) Push the ENTER button.
- (f) Push the UP/DOWN arrow buttons until ZN1 VTR 1 PWR status OFF is selected.
- (g) Push the SEL button.
 - 1) Make sure the status changes to ON.
- (h) Push the ENTER button.
 - 1) Make sure the MANUAL OPERATION screen is shown on the VSCU.
 - 2) Make sure that all of the PSU LCD Monitors lower from the stowed position.
- (i) Push the PLAY button on the video reproducer.
 - 1) Make sure that you see video from the video reproducer on all monitors.
- (j) Push the STOP button on the video reproducer.
- (k) Push the EJECT button on the video reproducer.
- (l) Remove the media source.
- (m) Push the power button on the VSCU to the off position.
- (n) Close the access door for the video control center if necessary.

HAP 031-054, 101-999

SUBTASK 23-32-01-710-007

- (3) Do this test of the passenger video system:
 - (a) If it is necessary, push the power button on the video system control unit (VSCU) to the on position.
 - 1) Make sure the green PASS light stays on.
 - 2) Make sure the video reproducer (VR) power is on.
 - (b) Make sure the ALL ZONES LED is green.
 - 1) If the ALL ZONES LED is not green, push the MODE SELECT button to select ALL ZONES.
 - (c) Make sure the main menu is displayed.
 - (d) Do these steps to play video from the VR:
 - 1) Put a media source (tape, CD, or DVD) in the VR if necessary.
 - 2) Push the number on the VSCU numeric keypad to select PLAY VIDEO.
 - a) Make sure the cabin monitors lower from the stowed position.
 - b) Make sure you see video from the VR on the cabin monitors.
 - 3) Push the STOP button on the VSCU.

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HAP 031-054, 101-999 (Continued)

- 4) Push the number on the VSCU numeric keypad to select SCREENS OFF.
 - a) Make sure the monitors raise to the stowed position.
- (e) Push the power button on the VSCU to the off position.
- (f) Close the access door for the video control center if necessary.

HAP ALL

SUBTASK 23-32-01-860-013

- (4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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VIDEO SYSTEM CONTROL UNIT - MAINTENANCE PRACTICES

1. General

A. This procedure contains these tasks:

- (1) Video system PC card installation
- (2) Video system configuration
- (3) Video system BITE test

TASK 23-32-02-400-803

2. Video System PC Card Installation

A. General

- (1) This task provides instructions on how to download the flight information and PSCU software to the video system control unit (VSCU) from the Personal Computer Memory Card (PC card).
- (2) The PC card contains flight data, aircraft configuration, and entertainment delivery instructions.
- (3) The VSCU is located in the video control center (VCC).

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Procedure

SUBTASK 23-32-02-860-025

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-02-860-026

- (2) Do these steps to get access to the DOWNLOAD PC CARD menu:
 - (a) Push the MASTER POWER button to turn on the VSCU.
 - 1) Make sure the green PASS light stays on and the main menu appears.
 - (b) Push and hold the MODE SELECT button for at least five seconds.
 - 1) Make sure the MAINTENANCE MODE ENTER ID # menu appears.
 - (c) Use the numeric keypad to enter the ID number.
 - 1) The default ID number is "9999".
 - (d) Push the ENTER button.
 - 1) Make sure the MAINTENANCE menu appears.
 - (e) Put the PC card into the VSCU.

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- 1) Make sure the PC card vendor label is facing toward the numeric keypad of the VSCU.

HAP 031-054, 101-999

- 2) If the auto download function is enabled, the VSCU will automatically download the PC card information. If the download does not automatically start, continue to access the DOWNLOAD PC CARD menu to manually download to the VSCU.

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- (f) Use the UP or DOWN arrows on the numeric keypad to select PC CARD/RSD.
- (g) Push the ENTER button.
- (h) Use the UP or DOWN arrows on the numeric keypad to select PC CARD.
- (i) Push the ENTER button.
- (j) Use the UP or DOWN arrows on the numeric keypad to select DOWNLOAD PC CARD.
- (k) Push the ENTER button.

SUBTASK 23-32-02-860-027

HAP 001-013, 015-026, 028-030

- (3) Do these steps to download the PC Card flight information:
 - (a) Make sure the PC card is installed in the VSCU.
 - (b) Make sure the DOWNLOAD PC CARD menu is displayed on the VSCU.
 - (c) Use the UP or DOWN arrows on the numeric keypad to select FLIGHT INFORMATION.
 - (d) Push the ENTER button.

CAUTION: DO NOT STOP THE DOWNLOAD PROCEDURE. IF YOU DO, YOU CAN CAUSE THE SYSTEM TO NOT OPERATE.

- (e) Push the ENTER button again to start the download.

NOTE: The menu screen will show the percentage of the download that is complete.

- (f) If the download is unsuccessful, do the download again.
- (g) When the download is successful, do these steps.
 - 1) Push the MASTER POWER button to turn off the VSCU.
 - 2) Push the EJECT button above the PC card slot to eject the PC card.
 - 3) Remove the PC card from the VSCU.
 - 4) Push the MASTER POWER button again to turn on the VSCU.

HAP 031-054, 101-999

- (4) Do these steps to manually download the PC Card flight information:
 - (a) Make sure the PC card is installed in the VSCU.
 - (b) Make sure the DOWNLOAD PC CARD menu is displayed on the VSCU.
 - (c) Use the UP or DOWN arrows on the numeric keypad to select CONFIGURATION.
 - (d) Push the ENTER button.

CAUTION: DO NOT STOP THE DOWNLOAD PROCEDURE. IF YOU DO, YOU CAN CAUSE THE SYSTEM TO NOT OPERATE.

- (e) Push the ENTER button again to start the download.

NOTE: The menu screen will show the percentage of the download that is complete.

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HAP 031-054, 101-999 (Continued)

- (f) If the download is unsuccessful, do the download again.
- (g) When the download is successful, do these steps.
 - 1) Push the MASTER POWER button to turn off the VSCU.
 - 2) Push the EJECT button above the PC card slot to eject the PC card.
 - 3) Remove the PC card from the VSCU.
 - 4) Push the MASTER POWER button again to turn on the VSCU.

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- (5) Do these steps to download the VSCU software:

NOTE: Perform this procedure only when you need to upgrade software.

- (a) Make sure the PC card is installed in the VSCU.
- (b) Make sure the DOWNLOAD PC CARD menu is displayed on the VSCU.
- (c) Use the UP or DOWN arrows on the numeric keypad to select PSCU SOFTWARE.
- (d) Push the ENTER button.

CAUTION: DO NOT STOP THE DOWNLOAD PROCEDURE. IF YOU DO, YOU CAN CAUSE THE SYSTEM TO NOT OPERATE.

- (e) Push the ENTER button again to start the download.
- (f) If the download is unsuccessful, do the download again.
- (g) When the download is successful, do these steps:
 - 1) Push the MASTER POWER button to turn off the VSCU.
 - 2) Push the EJECT button above the PC card slot to eject the PC card.
 - 3) Remove the PC card from the VSCU.
 - 4) Push the MASTER POWER button again to turn on the VSCU.

HAP 031-054, 101-999

SUBTASK 23-32-02-860-034

- (6) PC Card Automatic Download

- (a) When the auto download function is enabled, the VSCU will automatically download the PC card information when the PC card is put into the VSCU.
- (b) The VSCU will only download the information in the PC card if the data is different from the current data in the VSCU memory.
 - 1) To enable the auto download function, do these steps:
 - a) Make sure the MAINTENANCE menu is displayed on the VSCU.
 - b) Use the UP or DOWN arrows on the numeric keypad to select CONFIGURATION.
 - c) Push the ENTER button.
 - d) Use the UP or DOWN arrows on the numeric keypad to select PSCU CONFIG.
 - e) Push the ENTER button.
 - f) Use the UP or DOWN arrows on the numeric keypad to select AUTO CONFIG.
 - g) Push the ENTER button.
 - h) Use the UP or DOWN arrows on the numeric keypad to select LOAD PC CARD.

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- i) Push the SELECT button to select one of the following options:
 - < 1 > DISABLE: The auto download function is disabled.
 - < 2 > POWER ON: The auto download function will start if a valid PC card is detected in the VSCU when the VSCU is powered on.
 - < 3 > INSERT: The auto download function will start if a valid PC card is put into the VSCU during normal operation.
- j) Push the ENTER button to save the changes.

HAP ALL

SUBTASK 23-32-02-862-001

(7) When all necessary downloads are successful, do this step:

- (a) Push the MASTER POWER button to turn off the VSCU.

SUBTASK 23-32-02-862-002

(8) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

TASK 23-32-02-800-801

3. Video System Configuration

A. General

- (1) This task provides instructions on how to activate program mode on the video system control unit (VSCU). You use program mode to view the video system configuration, or to program a new configuration.
- (2) The system configuration is stored in the VSCU's non-volatile memory. It is only necessary to program the VSCU when the system is first installed, after a cabin configuration change, or when the VSCU is replaced by another unit with a different program configuration.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Procedure

SUBTASK 23-32-02-860-015

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

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SUBTASK 23-32-02-860-028

- (2) Do these steps to access the CONFIGURATION menu:
 - (a) Push the MASTER POWER button to turn on the VSCU.
 - 1) Make sure the green PASS light stays on and the main menu appears.
 - (b) Push and hold the MODE SELECT button for at least five seconds.
 - 1) Make sure the MAINTENANCE MODE ENTER ID # menu appears.
 - (c) Use the numeric keypad to enter the ID number.
 - 1) The default ID number is "9999".
 - (d) Push the ENTER button.
 - 1) Make sure the MAINTENANCE menu appears.
 - (e) Use the UP or DOWN arrows on the numeric keypad to select CONFIGURATION.
 - (f) Push the ENTER button.

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-02-860-029

- (3) Do these steps to enable or disable equipment from the system configuration:
 - (a) In the CONFIGURATION menu, use the UP or DOWN arrows on the numeric keypad to select PSCU CONFIG.
 - (b) Push the ENTER button.
 - (c) Push the SEL button to select the equipment you wish to add or remove.
 - (d) Use the UP or DOWN arrows on the numeric keypad to select YES or NO.
 - (e) Push the SEL button to select YES or NO.
 - (f) Repeat steps (c) to (e) until all of the equipment is set.
 - (g) Push the ENTER button to set the configuration.
 - 1) The PSCU CONFIG COMPLETED screen appears when the VSCU configuration is complete.
 - (h) When the configuration is successful, do these steps.
 - 1) Push the MASTER POWER button to turn off the VSCU.
 - 2) Push the MASTER POWER button again to turn on the VSCU.

HAP 031-054, 101-999

SUBTASK 23-32-02-860-030

- (4) Do these steps to enable or disable equipment from the system configuration:
 - (a) In the CONFIGURATION menu, use the UP or DOWN arrows on the numeric keypad to select PSCU CONFIG.
 - (b) Push the ENTER button.
 - (c) Use the UP or DOWN arrows on the numeric keypad to select LRU CONFIG.
 - (d) Push the ENTER button.
 - (e) Push the SEL button to select the equipment you wish to add or remove.
 - (f) Use the UP or DOWN arrows on the numeric keypad to select YES or NO.
 - (g) Push the SEL button to select YES or NO.

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HAP 031-054, 101-999 (Continued)

- (h) Repeat steps (e) to (g) until all of the equipment is set.
- (i) Push the ENTER button to set the configuration.
 - 1) The PSCU CONFIG COMPLETED screen appears when the VSCU configuration is complete.
- (j) When the configuration is successful, do these steps.
 - 1) Push the MASTER POWER button to turn off the VSCU.
 - 2) Push the MASTER POWER button again to turn on the VSCU.

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-02-860-031

- (5) Do these steps to change the VDU and monitor configuration:
 - (a) In the CONFIGURATION menu, use the UP or DOWN arrows on the numeric keypad to select SVDU/MONITOR CONFIG.
 - (b) Push the ENTER button.
 - (c) Use the UP or DOWN arrows on the numeric keypad to select SVDU CONFIG.
 - (d) Push the ENTER button.
 - (e) To set up zones with a predefined configuration, do these steps:
 - 1) Use the UP or DOWN arrows on the numeric keypad to select PREDEFINED CONFIG.
 - 2) Push the ENTER button.
 - 3) Use the UP or DOWN arrows on the numeric keypad to select a VDU table to view.
NOTE: Tables 1 through 24 are designated for single-zone aircraft. Tables 25 through 50 are designated for multi-zone configuration aircraft.
 - 4) Push the ENTER button to select the table you want to use.
 - a) The SVDU INITIALIZATION IN PROGRESS screen appears.
 - b) When the VDU initialization has completed, the SVDU CONFIG screen appears.
 - 5) Push the CLEAR button repeatedly to return to the SVDU CONFIG menu.
 - (f) To set up zones with a manual configuration, do these steps:
 - 1) In the SVDU CONFIG menu, use the UP or DOWN arrows on the numeric keypad to select MANUAL CONFIG.
 - 2) Push the ENTER button.
 - 3) Use the UP or DOWN arrows on the numeric keypad to select NUMBER OF SVDU.
 - 4) Enter the total number of VDUs.
 - 5) Use the UP or DOWN arrows on the numeric keypad to select SVDU.
 - 6) Enter the number of the VDU to configure.
 - 7) Use the UP or DOWN arrows on the numeric keypad to select ZONE.
 - 8) Enter the zone number to assign to the VDU.
 - 9) Repeat steps 5) through 8) until all of the VDUs have been configured.
 - 10) Push the ENTER button to save the changes.
 - 11) Push CLEAR until the SVDU/MONITOR CONFIG screen appears.

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HAP 001-013, 015-026, 028-030 (Continued)

- 12) To compensate for cable length, do these steps:
 - a) Use the UP or DOWN arrows on the numeric keypad to select CABLE COMPENSATION.
 - b) Push the ENTER button.
 - c) Use the UP or DOWN arrows on the numeric keypad to select SVDU.
 - d) Enter the VDU number.
 - e) Use the UP or DOWN arrows on the numeric keypad to select FEET.
 - f) Enter the cable length (in feet) from the VSCU to the VDU
 - g) Repeat steps c) through f) until you have entered all of the VDU cable lengths that require changing.
 - h) Push the ENTER button to save all of the changes.
 - i) Push the CLEAR button until the SVDU/MONITOR CONFIG screen appears.

HAP 031-054, 101-999

SUBTASK 23-32-02-860-032

- (6) Do these steps to manually change the VDU and monitor configuration:
 - (a) In the CONFIGURATION menu, use the UP or DOWN arrows on the numeric keypad to select TU/MONITOR CONFIG.
 - (b) Push the ENTER button.
 - (c) Use the UP or DOWN arrows on the numeric keypad to select TU CONFIG.
 - (d) Push the ENTER button.
 - (e) To set up zones with a predefined configuration, do these steps:
 - 1) Use the UP or DOWN arrows on the numeric keypad to select PREDEFINED CONFIG.
 - 2) Push the ENTER button.
 - 3) Use the UP or DOWN arrows on the numeric keypad to select the zone configuration table of the airplane.
 - 4) Push the ENTER button.
 - a) The TU INITIALIZATION IN PROGRESS screen appears.
 - b) If the initialization fails, do the configuration again using the correct configuration table.
 - c) When the initialization has completed, the TU INITIALIZATION COMPLETED screen appears.
 - 5) Push the CLEAR button repeatedly to return to the TU CONFIG menu.

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SUBTASK 23-32-02-860-014

- (7) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

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TASK 23-32-02-700-801

4. Video System BITE Test

A. General

- (1) The video system control unit (VSCU) has BITE functions for testing normal operation of the video system. The test will check the video reproducers (VRs), and all of the VDU's through data communications with them. Test results are shown on the VSCU preview screen.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Procedure

SUBTASK 23-32-02-860-017

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-02-740-006

- (2) Do these steps to access the PSCU BITE menu:
 - (a) Push the MASTER POWER button to turn on the VSCU.
 - 1) Make sure the green PASS light stays on and the main menu appears.
 - (b) Push and hold the MODE SELECT button for at least five seconds.
 - 1) Make sure the MAINTENANCE MODE ENTER ID # menu appears.
 - (c) Use the numeric keypad to enter the ID number.
 - 1) The default ID number is "9999".
 - (d) Push the ENTER button.
 - 1) Make sure the MAINTENANCE menu appears.
 - (e) Use the UP or DOWN arrows on the numeric keypad to select BITE/ERROR/KEYLINES.
 - (f) Push the ENTER button.
 - (g) Use the UP or DOWN arrows on the numeric keypad to select PSCU BITE.
 - (h) Push the ENTER button.
- (3) Do these steps to do a BITE test of the VSCU:

NOTE: The BITE test takes approximately 5 minutes to complete.

- (a) In the PSCU BITE menu, use the UP or DOWN arrows on the numeric keypad to select RUN BITE TESTS.

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- (b) Push the ENTER button to run the BITE test.
 - 1) When the tests are completed, the PSCU BITE REPORT screen appears.
- (c) Push the CLEAR button to return to the PSCU BITE menu.
- (d) Use the UP or DOWN arrows on the numeric keypad to select DETAILED BITE REPORTS.
- (e) Push the ENTER button.
 - 1) The DETAILED BITE REPORT screen appears, showing any areas that failed.
- (f) Push the CLEAR button repeatedly to return to the MAINTENANCE MODE menu.

SUBTASK 23-32-02-860-016

- (4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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VIDEO SYSTEM CONTROL UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks:
(1) A removal of the video system control unit.
(2) An installation of the video system control unit.

TASK 23-32-02-000-801-001

2. Video System Control Unit Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the video system control unit (VSCU).
(2) The VSCU is installed in the video control center.
(a) When you remove the VSCU, do not supply the electrical power to the video system.

B. Location Zones

Table with 2 columns: Zone, Area. Rows include HAP 001-013, 015-026, 028-030 (zones 231, 232) and HAP 031-054, 101-999 (zones 241, 242).

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C. Prepare for the Removal

SUBTASK 23-32-02-860-003-001

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

F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Rows: C 5 C01450 ENTERTAINMENT VID CONT CENTER DC, C 7 C01451 ENTERTAINMENT VID CONT CENTER AC

SUBTASK 23-32-02-860-001-001

- (2) Get access to the VSCU in the video control center.

D. Procedure

SUBTASK 23-32-02-020-008

- (1) Do these steps to remove the video system control unit (VSCU) [1]:
(a) Get access to the video control center.
(b) Remove the two screws [5] that attach the plate [4] to the mounting surface.

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- (c) Pull the VSCU plate assembly from its location.

NOTE: There are two slots cut into the plate. The slots fit under the spacers and washers that are attached to the mounting surface.

- (d) Disconnect the five electrical connectors [2] from the VSCU receptacles.
(e) Remove the four screws [3] that attach the VSCU [1] to the plate [4].
(f) Remove the video system control [1] unit from the plate [4].

————— **END OF TASK** —————

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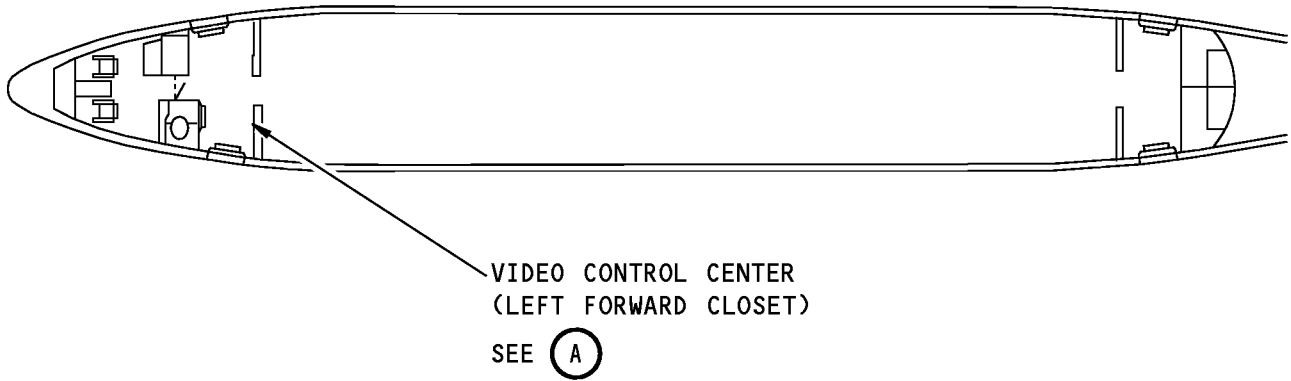
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**Video System Control Unit (VSCU) Installation
Figure 401 (Sheet 1 of 3)/23-32-02-990-801-001**

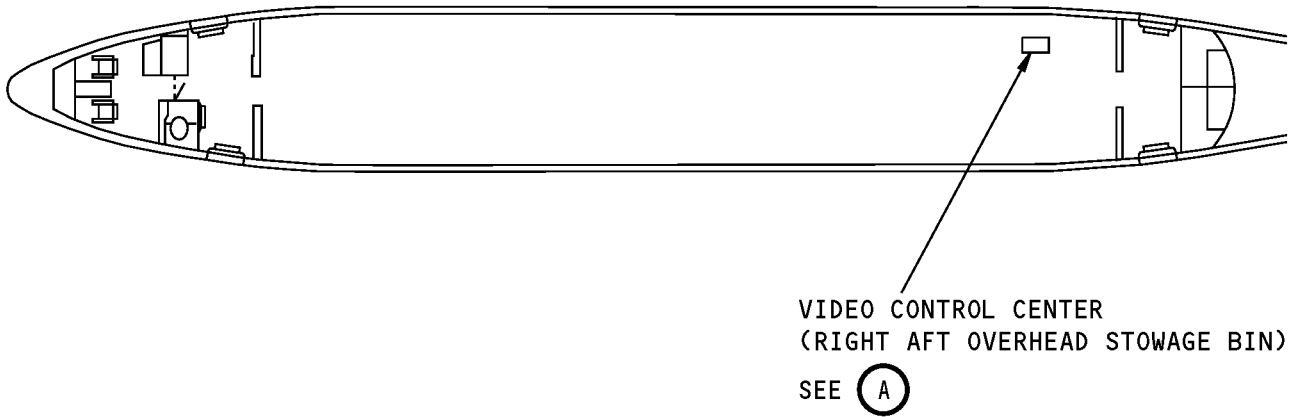
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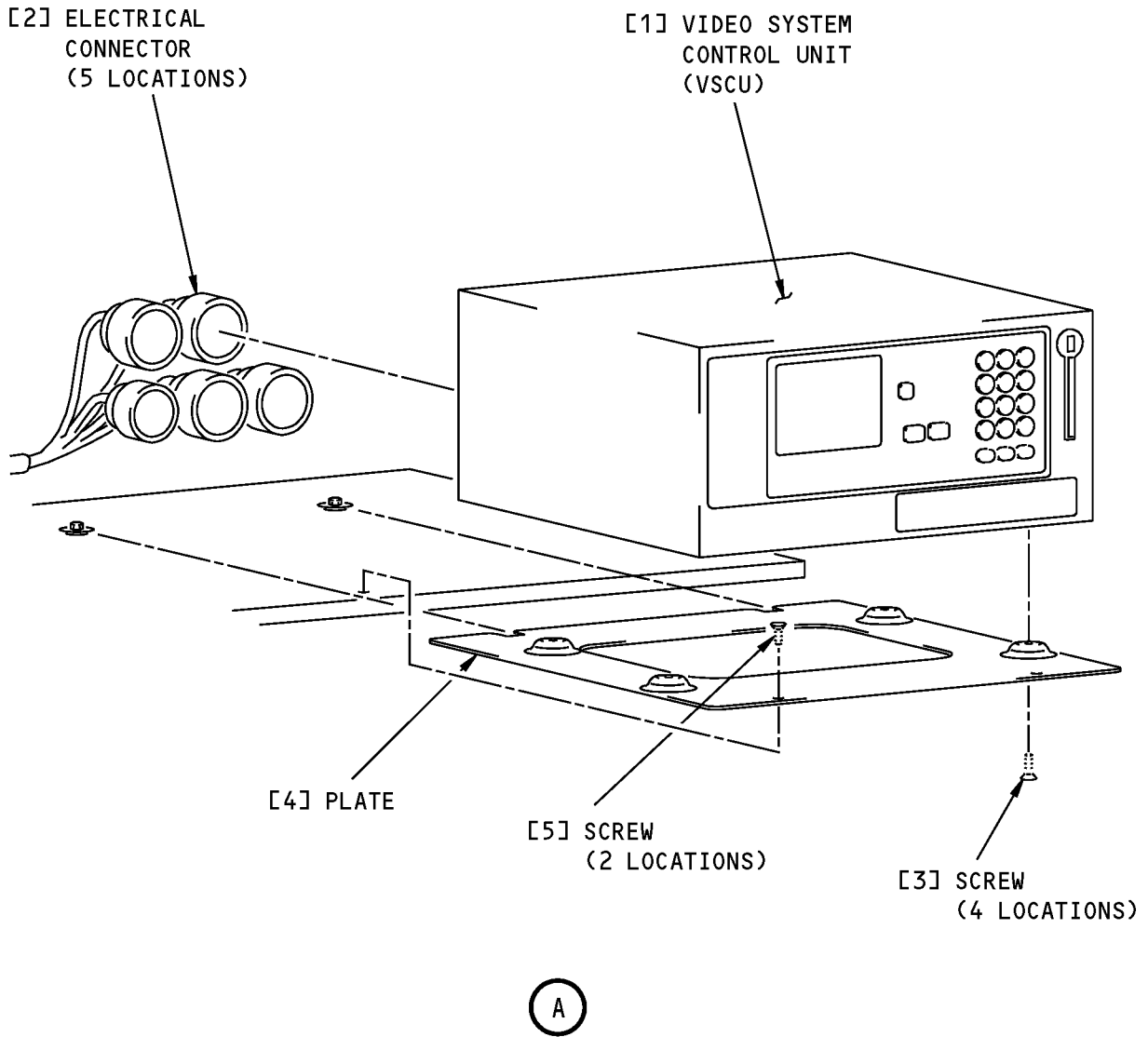
Video System Control Unit (VSCU) Installation
Figure 401 (Sheet 2 of 3)/23-32-02-990-801-001

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**Video System Control Unit (VSCU) Installation
Figure 401 (Sheet 3 of 3)/23-32-02-990-801-001**

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TASK 23-32-02-400-801-001

3. Video System Control Unit Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the video system control unit (VSCU).

B. References

Reference	Title
23-32-02-400-803	Video System PC Card Installation (P/B 201)
23-32-02-800-801	Video System Configuration (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	VSCU	23-32-02-10-045	HAP 001-013, 015-026
		23-32-02-65-050	HAP 028-030
		23-32-02-75-090	HAP 031-054, 101-999

D. Location Zones

Zone	Area
HAP 001-013, 015-026, 028-030	
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
HAP 031-054, 101-999	
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

HAP ALL

E. Procedure

SUBTASK 23-32-02-420-001-001

- (1) Do these steps to install the video system control unit (VSCU) [1]:
 - (a) Put the video system VSCU [1] on the plate [4].
 - (b) Install the four screws [3] that attach the VSCU to the plate [4].
 - (c) Connect the five electrical connectors [2] to the VSCU receptacles.
 - (d) Put the VSCU plate assembly into its position.

NOTE: There are two slots cut into the plate. The slots fit under the spacers and washers that are attached to the mounting surface.

- (e) Install the two screws [5] that attach the plate [4] to the mounting surface.

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SUBTASK 23-32-02-860-002-001

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

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC
C	7	C01451	ENTERTAINMENT VID CONT CENTER AC

SUBTASK 23-32-02-860-024

- (3) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

F. System Configuration

HAP 038, 041-054, 101-999

SUBTASK 23-32-02-420-011

- (1) Do this task: Video System PC Card Installation, TASK 23-32-02-400-803

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SUBTASK 23-32-02-860-008-001

- (2) Do this task: Video System Configuration, TASK 23-32-02-800-801

HAP 038, 041-054, 101-999

SUBTASK 23-32-02-860-035

- (3) Do these steps to initialize the audio multiplexer:
- In the MAINTENANCE menu, use the UP or DOWN arrows on the numeric keypad to select CONFIGURATION.
 - Push the ENTER button.
 - Use the UP or DOWN arrows on the numeric keypad to select AMUX CONFIG.
 - Push the ENTER button.
 - Use the UP or DOWN arrows on the numeric keypad to select the correct table.
 - Push the ENTER button to start the AMUX initialization.
 - When the initialization is complete, push the CLEAR button to return to the MAINTENANCE menu.
 - Push the MASTER POWER button to turn off the VSCU.

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G. Video System Control Unit Installation Test

HAP 001-013, 015-026, 028-037, 039, 040

SUBTASK 23-32-02-710-001-001

- (1) Do this test of the passenger video system:
- Push the VSCU power button to the on position.
 - After at least one minute, make sure that the green PASS light under the power button comes on.
 - Make sure that the POWER light on the video reproducers (VRs) comes on.
 - Push the VSCU power button to the off position.
 - Close the door for the video control center if necessary.

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HAP 001-013, 015-026, 028-037, 039, 040 (Continued)

HAP 038, 041-054, 101-999

SUBTASK 23-32-02-710-006

- (2) Do this test of the passenger video system:
- (a) If it is necessary, push the power button on the video system control unit (VSCU) to the on position.
 - 1) Make sure the green PASS light stays on.
 - 2) Make sure the video reproducer (VR) power is on.
 - (b) Make sure the ALL ZONES LED is green.
 - 1) If the ALL ZONES LED is not green, push the MODE SELECT button to select ALL ZONES.
 - (c) Make sure the main menu is displayed.
 - (d) Do these steps to play video from the VR:
 - 1) Put a media source (tape, CD, or DVD) in the VR if necessary.
 - 2) Push the number on the VSCU numeric keypad to select PLAY VIDEO.
 - a) Make sure the cabin monitors lower from the stowed position.
 - b) Make sure you see video from the VR on the cabin monitors.
 - 3) Push the STOP button on the VSCU.
 - 4) Push the number on the VSCU numeric keypad to select SCREENS OFF.
 - a) Make sure the monitors raise to the stowed position.
 - (e) Push the power button on the VSCU to the off position.
 - (f) Close the access door for the video control center if necessary.

HAP ALL

SUBTASK 23-32-02-860-020

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

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VIDEO DISTRIBUTION UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

- (1) The removal of the video distribution unit.
- (2) The installation of the video distribution unit.

TASK 23-32-03-000-801

2. Video Distribution Unit Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the video distribution unit (VDU).
- (2) The VDUs are installed under the left sculptured ceiling panels.
 - (a) When you remove the VDU, do not supply the electrical power to the video system.

B. References

Reference	Title
25-21-45-000-801	Sculptured Ceiling Panel Removal (P/B 401)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left

D. Prepare for the Removal

SUBTASK 23-32-03-860-001

- (1) Do these steps to prepare the VDU for the removal:
 - (a) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC
C	7	C01451	ENTERTAINMENT VID CONT CENTER AC
D	5	C01452	VIDEO 1
D	6	C01453	VIDEO 2
D	7	C01454	VIDEO 3
D	8	C01455	VIDEO 4
HAP 031-037, 039-041, 047, 049, 050, 054			
D	8	C01455	VIDEO 4 (INOP)

HAP 101-999

- (b) Find the location of the applicable VDU between stringers 4L and 6L (Table 401):

NOTE: The video distribution units (VDUs) are above the ceiling. The VDUs are in groups. A VDU group has one, two, three, or four VDUs.

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HAP 101-999 (Continued)

Table 401/23-32-03-993-807

VDU LOCATION	
GROUP #	STATION
1	450
2	550
3	710
4	777

HAP 001-013, 015-026, 028-054

- (c) Find the location of the applicable VDU between stringers 4L and 6L (Table 402):

NOTE: The video distribution units (VDUs) are above the ceiling. The VDUs are in groups. A VDU group has one, two, three, or four VDUs.

Table 402/23-32-03-993-808

VDU LOCATION	
GROUP #	STATION
1	450
2	500
3	695
4	727

HAP ALL

- (d) For the applicable VDU, do this task: Sculptured Ceiling Panel Removal, TASK 25-21-45-000-801.

E. Video Distribution Unit Removal

SUBTASK 23-32-03-020-001

- (1) Do these steps to remove a VDU [1] from the top bracket:

- (a) Disconnect the applicable electrical connectors [2] from the VDU receptacles.

NOTE: Attach a label to each electrical connector to identify which VDU receptacle it connects to. This helps when you install the VDU.

- (b) Remove the four screws [3] and washers [4] that attach the applicable VDU [1] to the top bracket.

- (c) Remove the VDU [1] from the top bracket.

- (d) Remove the termination plug from the VDU receptacle if a plug is installed.

NOTE: Attach a label to the termination plug to identify the VDU receptacle it connects to. This helps when you install the VDU.

SUBTASK 23-32-03-020-002

- (2) Do these steps to remove a VDU [1] from the bottom bracket:

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- (a) Disconnect the pin [5] and cotter pin [6] that attach the connecting rod [7] to the stowage bin.
- (b) Remove the two screws [8] and washers [9] that attach the bottom bracket to the support bracket.
- (c) Remove the VDU [1] and bottom bracket from its position.
- (d) Disconnect the applicable electrical connectors [2] from the VDU receptacles.

NOTE: Attach a label to each electrical connector to identify which VDU receptacle it connects to. This helps when you install the VDU.

- (e) Remove the four screws [3] and washers [4] that attach the applicable VDU [1] to the bottom bracket.
- (f) Remove the VDU [1] from the bottom bracket.

HAP 001-013, 015-026, 028-030

- (g) BOTTOM AFT VDU ONLY;
Remove the four spacers [10] over the screw holes on the bottom bracket.

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- (h) Remove the termination plug from the VDU receptacle if a plug is installed.

NOTE: Attach a label to the termination plug to identify the VDU receptacle it connects to. This helps when you install the VDU.

————— **END OF TASK** —————

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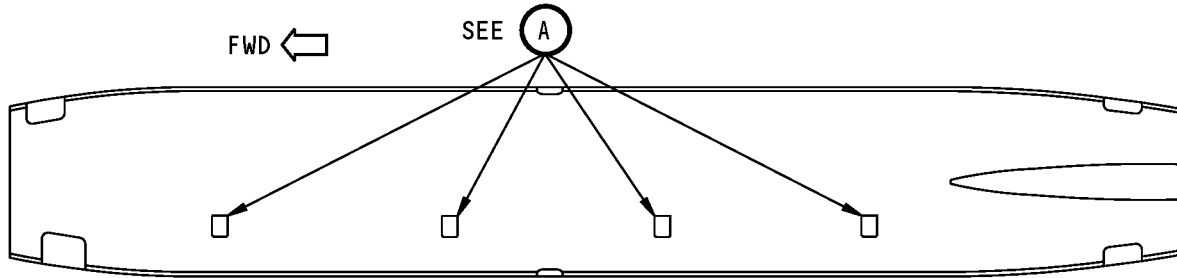
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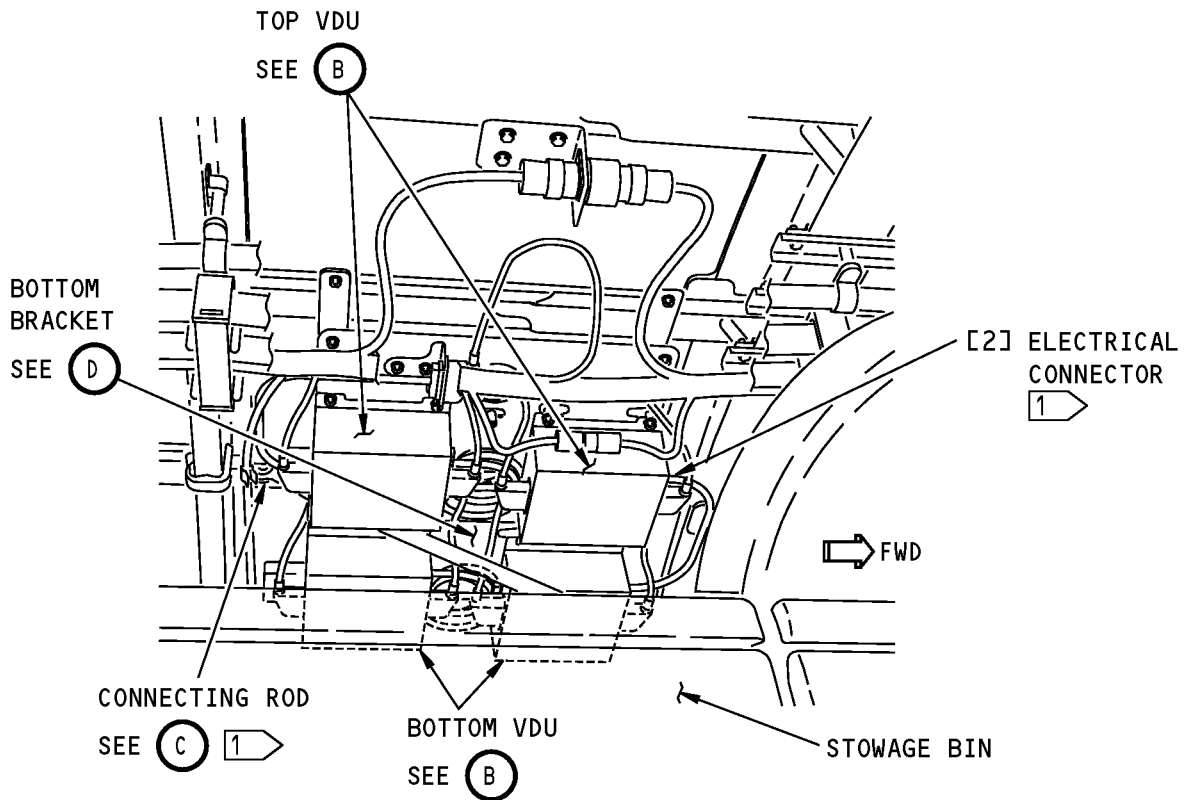
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VDU TRAY ASSEMBLY



**VIDEO DISTRIBUTION UNIT (VDU) TRAY LOCATIONS
(EXAMPLE, 4 LOCATIONS)**



**VIDEO DISTRIBUTION UNIT (VDU) TRAY
(EXAMPLE, 4 LOCATIONS)**

A

1 BOTTOM VDUs REMOVAL ONLY (IF INSTALLED)

**Video Distribution Unit (VDU) Installation
Figure 401 (Sheet 1 of 3)/23-32-03-990-803**

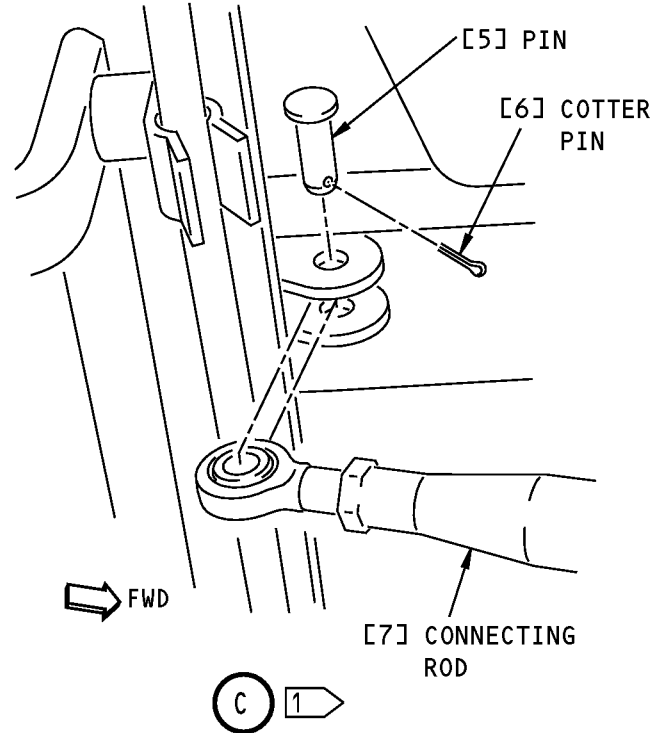
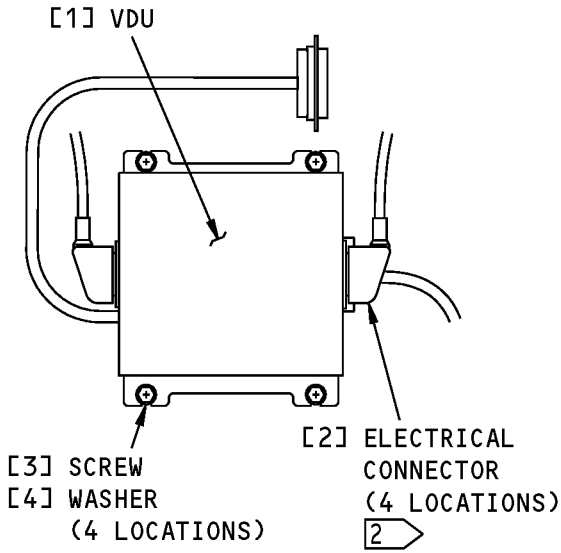
EFFECTIVITY
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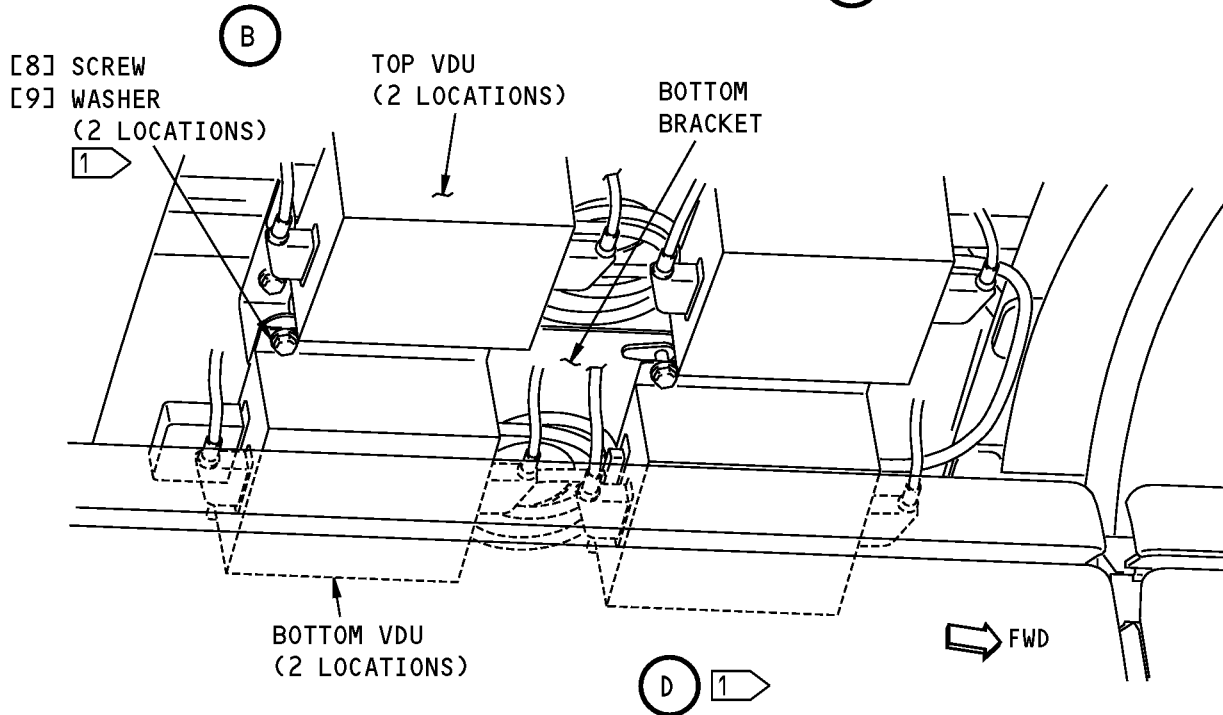
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VIDEO DISTRIBUTION UNIT (VDU) (EXAMPLE)



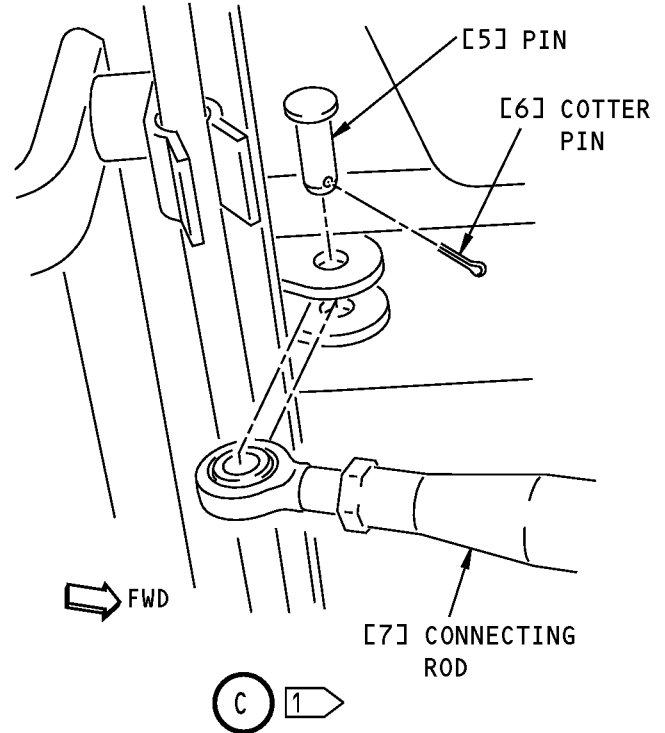
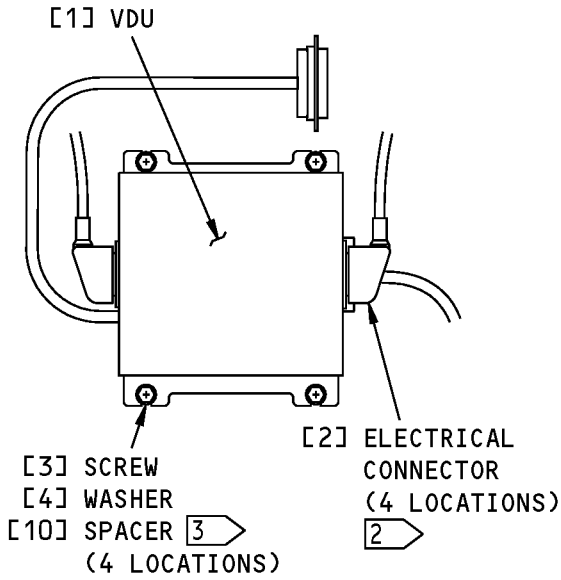
2 ONE OF THE VDUs HAS A TERMINATION PLUG (REFER TO VDU TABLE FOR THE AFT VDU).

**Video Distribution Unit (VDU) Installation
 Figure 401 (Sheet 2 of 3)/23-32-03-990-803**

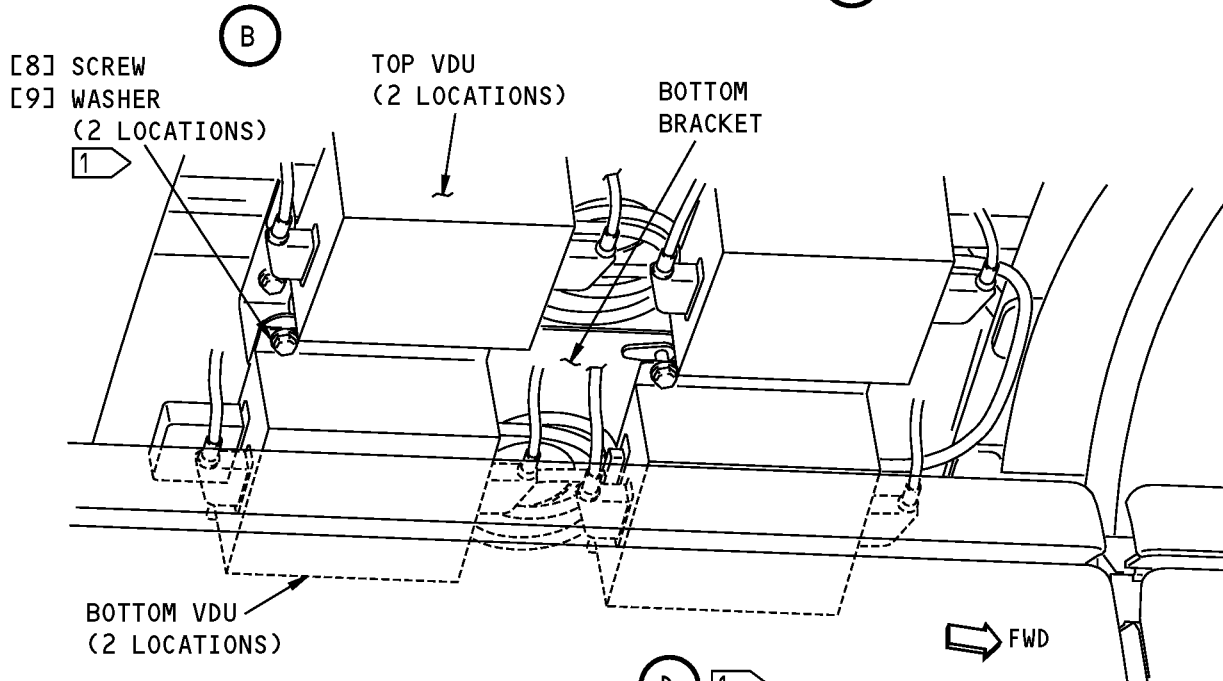
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VIDEO DISTRIBUTION UNIT (VDU) (EXAMPLE)



2 ONE OF THE VDUs HAS A TERMINATION PLUG (REFER TO VDU TABLE FOR THE AFT VDU).

3 BOTTOM AFT VDU ONLY

**Video Distribution Unit (VDU) Installation
 Figure 401 (Sheet 3 of 3)/23-32-03-990-803**

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TASK 23-32-03-400-801

3. Video Distribution Unit Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the video distribution unit (VDU).

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
25-21-45-400-801	Sculptured Ceiling Panel Installation (P/B 401)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left

D. Video Distribution Unit Installation

SUBTASK 23-32-03-420-001

- (1) Do these steps to install a VDU [1] on the top bracket:
- Install the termination plug on the applicable VDU receptacle.
 - Put the VDU [1] in its position on the top bracket.
 - Install the four screws [3] and washers [4] that attach the VDU [1] to the top bracket.
 - Connect the applicable electrical connectors [2] to the VDU receptacles.

SUBTASK 23-32-03-420-002

- (2) Do these steps to install a VDU [1] on the bottom bracket:
- Install the termination plug on the applicable VDU receptacle.

HAP 001-013, 015-026, 028-030

- BOTTOM AFT VDU ONLY;
Put the four spacers [10] over the screw holes on the bottom bracket.

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- Put the VDU [1] in its position on the bottom bracket.
 - Install the four screws [3] and washers [4] that attach the VDU [1] to the bottom bracket.
 - Connect the applicable electrical connectors [2] to the VDU receptacles.
 - Put the VDU [1] and bottom bracket into its correct position.
- NOTE:** The bottom of the bottom bracket fits into two slots in the bottom support bracket.
- Install the two screws [8] and washers [9] that attach the bottom bracket to the support bracket.
 - Connect the pin [5] and cotter pin [6] that attach the connecting rod [7] to the stowage bin.

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SUBTASK 23-32-03-860-002

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

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC
C	7	C01451	ENTERTAINMENT VID CONT CENTER AC
D	5	C01452	VIDEO 1
D	6	C01453	VIDEO 2
D	7	C01454	VIDEO 3
D	8	C01455	VIDEO 4
HAP 031-037, 039-041, 047, 049, 050, 054			
D	8	C01455	VIDEO 4 (INOP)

HAP ALL

E. Video Distribution Unit Installation Test

SUBTASK 23-32-03-860-007

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 001-013, 015-026, 028-037, 039, 040

SUBTASK 23-32-03-710-001

(2) Do this test of the video distribution unit (VDU):

- (a) Open the door to the video control center.
- (b) Push the VSCU power button to the on position.
- (c) Put a media source (tape, CD, or DVD) into video reproducer 1.
- (d) Make the selections on the VSCU and video reproducer 1 to show video from video reproducer 1 on all video monitors.
 - 1) Make sure that all monitors lower from the stowed position.
 - 2) Make sure the video from video reproducer 1 is shown on all monitors.
- (e) Make the selections on the VSCU and video reproducer 1 to stop video from video reproducer 1.
 - 1) Make sure the video reproducer stops.
- (f) Push the EJECT button on video reproducer 1.
- (g) Remove the media source from video reproducer 1.
- (h) Push the power button on the VSCU.
- (i) Close the door to the video control center.

HAP 038, 041-054, 101-999

SUBTASK 23-32-03-710-004

(3) Do this test of the passenger video system:

- (a) If it is necessary, push the power button on the video system control unit (VSCU) to the on position.
 - 1) Make sure the green PASS light stays on.
 - 2) Make sure the video reproducer (VR) power is on.
- (b) Make sure the ALL ZONES LED is green.

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HAP 038, 041-054, 101-999 (Continued)

- 1) If the ALL ZONES LED is not green, push the MODE SELECT button to select ALL ZONES.
- (c) Make sure the main menu is displayed.
- (d) Do these steps to play video from the VR:
 - 1) Put a media source (tape, CD, or DVD) in the VR if necessary.
 - 2) Push the number on the VSCU numeric keypad to select PLAY VIDEO.
 - a) Make sure the cabin monitors lower from the stowed position.
 - b) Make sure you see video from the VR on the cabin monitors.
 - 3) Push the STOP button on the VSCU.
 - 4) Push the number on the VSCU numeric keypad to select SCREENS OFF.
 - a) Make sure the monitors raise to the stowed position.
- (e) Push the power button on the VSCU to the off position.
- (f) Close the access door for the video control center if necessary.

HAP ALL

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-32-03-410-001

- (1) For the applicable VDU, do this task: Sculptured Ceiling Panel Installation, TASK 25-21-45-400-801.

SUBTASK 23-32-03-860-006

- (2) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

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DIGITAL INTERFACE UNIT - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) A software configuration check of the digital interface unit (DIU).

HAP 038, 041-054, 104-999

- (2) An installation of the Airshow DIU software.

HAP 001-013, 015-026, 028-030

- (3) A removal of the DIU CD-ROM
- (4) An installation of the DIU CD-ROM
- (5) A procedure to clean the DIU CD-ROM

B. The software for the Airshow 420 DIU is on a CD-ROM which must be installed into the DIU. The Airshow 420 DIU has a CD-ROM drive access door on its front panel. The CD-ROM contains the system software for the DIU, and customized route and graphics information that is unique to each airline. The CD-ROM must be properly installed and uploaded into the DIU memory for the system to operate.

HAP 038, 041-054, 104-999

C. The Digital Interface Unit (DIU) is also referred to as the Digital Media Unit (DMU) or Digital Media Server (DMS). For consistency, this document will use the term DIU when referring to the DMU or DMS.

D. The software for the Airshow 4200 is installed using a USB installation key. The Airshow 4200 DIU has an access door and USB port on its front panel. The USB installation key contains the system software for the DIU with route and graphic information that is unique to each airline. The software must be properly installed into the DIU memory for the system to operate.

HAP 001-013, 015-026, 028-054, 104-999

TASK 23-32-06-700-801

2. DIU Software Configuration Check

A. General

- (1) This task tells you how to do a software configuration check for the digital interface unit (DIU).
- (2) Use this task to make sure that the DIU software was loaded properly, or to identify the current software configuration of the DIU.

NOTE: You must know the correct part number for the custom Airshow software your system uses to do this procedure.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00
230	Subzone - Passenger Compartment - Body Station 360.00 to 663.75

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(Continued)

Zone	Area
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

D. Procedure

SUBTASK 23-32-06-860-012

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-06-740-002

(2) Do these steps to do a software configuration check of the DIU:

(a) Open this circuit breaker and attach safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

(b) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

HAP 001-013, 015-026, 028-037, 039, 040

(c) At the video control center, do these steps:

- 1) Push the power switch on the video system control unit (VSCU) to the on position.
 - a) Make sure the green PASS light comes on.
- 2) When the message CONNECTING TO AIRSHOW appears, push the CLEAR button.

NOTE: After you complete the configuration check, the VSCU must have the power switch cycled off and then on again to allow the Airshow menus to fully load for regular operation.

- 3) Push the PREVIEW SELECT button again and again until video source 7 appears.
 - a) Make sure the correct software part numbers for your system show on the Airshow copyright page shown on the preview screen.

NOTE: It may take up to a minute for the software information to appear on the copyright page.

- 4) Push the power switch on the VSCU to the off position.

HAP 038, 041-054, 104-999

(d) At the video control center, do these steps:

- 1) Push the power button on the video system control unit (VSCU) to the on position.
 - a) Make sure the green PASS light comes on.
 - b) Make sure the main menu is displayed.
- 2) Push and hold the MODE SELECT button for at least five seconds.
- 3) Use the numeric keypad to enter the ID number.
 - a) The default ID number is "9999".
- 4) Push the ENTER button

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HAP 038, 041-054, 104-999 (Continued)

- a) Make sure the MAINTENANCE menu is displayed.
- 5) Use the UP or DOWN arrows on the numeric keypad to select PART NUMBERS.
- 6) Push the ENTER button.
- 7) Use the UP or DOWN arrows on the numeric keypad to select each menu option.
 - a) Push the ENTER button.
 - b) Make sure each part number is correct for your system.
- 8) Push the CLEAR button to return to the MAINTENANCE menu.
- 9) Push the power button on the VSCU to the off position.

HAP 001-013, 015-026, 028-054, 104-999

SUBTASK 23-32-06-860-011

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

HAP 038, 041-054, 104-999

TASK 23-32-06-400-806

3. Digital Interface Unit Software Installation

A. General

- (1) This procedure tells you how to install software in the Airshow 4200 digital interface unit (DIU). It will take approximately 15 - 40 minutes depending on your setup and configuration.
- (2) A USB installation key is necessary for this procedure.
- (3) This procedure requires access to the DIU and the video system control unit (VSCU).

NOTE: Two personnel are recommended to perform this procedure quickly. One person should be located at the VSCU. The other person should be located at the DIU.

- (a) The DIU is located on the E8-1 shelf.
- (b) The VSCU is located in the video control center (VCC).

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Procedure

SUBTASK 23-32-06-860-023

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-06-470-006

- (2) Do these steps to install the software:
 - (a) Open the front access panel of the DIU.

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HAP 038, 041-054, 104-999 (Continued)

- (b) Insert the USB installation key into the DIU connector.
NOTE: Do not remove the USB installation key until the copying process is complete.
 - 1) Wait at least one minute for the copying process to begin.
 - 2) The status screen with percentage complete is displayed on the cabin monitors.
- (c) Wait until the copying process on the status screen is 100% complete.
- (d) Remove the USB installation key.
- (e) The DIU will begin installing the software. Wait until the installation on the status screen is 100% complete.
- (f) The cleanup process will begin. Wait until the cleanup process on the status screen is 100% complete.
- (g) The program will automatically restart. Wait until the Airshow program is displayed on the monitors.
- (h) Do these steps:
 - 1) Push the power button on the VSCU to the off position.
 - 2) Push the power button on the VSCU to the on position.

SUBTASK 23-32-06-860-025

- (3) Do these steps to put the airplane back to its usual condition:
 - (a) Push the power button on the VSCU to the off position.

SUBTASK 23-32-06-860-026

- (4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

HAP 001-013, 015-026, 028-030

TASK 23-32-06-000-803

4. DIU CD-ROM Removal

A. General

- (1) This task is the removal procedure for the Airshow DIU CD-ROM.
 - (a) When you remove the DIU CD-ROM, power must be supplied to the system.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Removal Procedure

SUBTASK 23-32-06-860-022

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

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HAP 001-013, 015-026, 028-030 (Continued)

SUBTASK 23-32-06-860-010

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

HAP 001-013, 015-026

SUBTASK 23-32-06-020-006

(3) Do these steps to remove the CD caddy from the DIU:

- (a) Loosen the knurled knob on the front panel of the DIU.
- (b) Open the CD-ROM access door.
- (c) Push the eject button on the face of the CD-ROM drive.

NOTE: The DIU will automatically eject the CD caddy.

- (d) Remove the CD caddy from the DIU.
- (e) Close the CD-ROM access door on the DIU.
- (f) Tighten the knurled knob on the front panel of the DIU.

SUBTASK 23-32-06-020-007

(4) If necessary, remove the CD-ROM from the CD caddy:

- (a) Squeeze the sides of the CD caddy opposite the metal shutter and then lift the clear plastic cover.
- (b) Remove the CD-ROM from the CD caddy.
- (c) Close the CD caddy cover.

HAP 028-030

SUBTASK 23-32-06-020-013

(5) Do these steps to remove the CD-ROM from the DIU:

- (a) Loosen the knurled knob on the front panel of the DIU.
- (b) Open the CD-ROM access door.
- (c) Push the eject button on the face of the CD-ROM drive.

NOTE: The DIU will automatically eject the CD tray.

- (d) Remove the CD-ROM from the tray.

CAUTION: DO NOT PUSH THE FRONT OF THE CD-ROM TRAY TO CLOSE IT. IF YOU PUSH THE TRAY, YOU CAN CAUSE DAMAGE TO THE TRAY MECHANISM.

- (e) Push the eject button on the CD-ROM drive to close the CD tray.
- (f) Close the CD-ROM access door on the DIU.
- (g) Tighten the knurled knob on the front panel of the DIU.

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SUBTASK 23-32-06-860-021

(6) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

TASK 23-32-06-400-805

5. DIU CD-ROM Installation

A. General

- (1) This task is the installation procedure for the Airshow DIU CD-ROM.
 - (a) When you install the DIU CD-ROM, power must be supplied to the system.
 - (b) After you install the CD-ROM, you must remove power and then supply power to the system. The software on the CD-ROM will not be installed to the DIU unless the power is cycled.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Installation Procedure

SUBTASK 23-32-06-860-018

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 001-013, 015-026

SUBTASK 23-32-06-420-006

- (2) If necessary, install a CD-ROM in the CD caddy:
 - (a) Squeeze the sides of the CD caddy opposite the metal shutter and then lift the clear plastic cover.
 - (b) Put the CD-ROM (printed side up) into the CD caddy.
 - (c) Close the CD caddy cover.

SUBTASK 23-32-06-420-007

- (3) Do these steps to install the CD caddy into the DIU:
 - (a) Loosen the knurled knob on the front panel of the DIU to open the CD-ROM access door.
 - (b) Align the CD caddy so that the arrow on the caddy faces the opening on the DIU and the clear side faces to the right.

CAUTION: DO NOT PUSH THE CD CADDY INTO THE DIU WITH TOO MUCH FORCE. TOO MUCH FORCE WILL CAUSE DAMAGE TO THE DIU CD-ROM DRIVE.

- (c) Put the CD caddy into the DIU.
- (d) Close the CD-ROM access door.
- (e) Tighten the knurled knob.

<p>EFFECTIVITY</p> <p>HAP 001-013, 015-026, 028-054, 104-999</p>
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HAP 001-013, 015-026 (Continued)

- (f) Open this circuit breaker and attach safety tag:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

NOTE: The software on the CD-ROM will not be installed to the DIU unless the power is cycled. The system may take up to 2 minutes to initialize after the power is cycled.

- (g) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

HAP 028-030

SUBTASK 23-32-06-420-013

- (4) Do these steps to install the CD-ROM into the DIU:

- (a) Loosen the knurled knob on the front panel of the DIU to open the CD-ROM access door.
- (b) Open the CD-ROM access door.
- (c) Push the eject button on the face of the CD-ROM drive.
- (d) Put the CD-ROM (printed side out) onto the CD tray, behind the four loading clips.
- (e) Extend the two lower clips over the CD-ROM.

NOTE: The two upper clips can be partially extended over the CD-ROM.

CAUTION: DO NOT PUSH THE FRONT OF THE CD-ROM TRAY TO CLOSE IT. IF YOU PUSH THE TRAY, YOU CAN CAUSE DAMAGE TO THE TRAY MECHANISM.

- (f) Push the EJECT button on the face of the CD-ROM drive to close the tray.
- (g) Close the CD-ROM access door.
- (h) Tighten the knurled knob.
- (i) Open this circuit breaker and attach safety tag:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

NOTE: The software on the CD-ROM will not be installed to the DIU unless the power is cycled. The system may take up to 2 minutes to initialize after the power is cycled.

- (j) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-06-740-005

- (5) Do this task: DIU Software Configuration Check, TASK 23-32-06-700-801.

EFFECTIVITY
HAP 001-013, 015-026, 028-054, 104-999

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HAP 001-013, 015-026, 028-030 (Continued)

SUBTASK 23-32-06-860-017

(6) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

TASK 23-32-06-100-801

6. DIU CD-ROM Cleaning and Handling

A. General

(1) This task tells you how to handle and clean a CD-ROM.

B. Consumable Materials

Reference	Description	Specification
G01043	Cloth - Lint-free	

C. DIU CD-ROM Handling Instructions

SUBTASK 23-32-06-910-001

(1) When you handle a CD-ROM, follow these general guidelines:

- (a) Always hold a CD-ROM by its edges.
- (b) Do not write on a CD-ROM recording surface (the shiny side). If you need to write on the label side of the CD-ROM, use a soft felt tip marker.
- (c) Always keep the recording surface clean. Do not apply any stickers or tape to the recording surface.
- (d) Never use any cleaning fluid other than water to clean a CD-ROM.
- (e) Store CD-ROMs in their storage cases in a clean, cool, dry place when not in use. Keep CD-ROMs out of direct sunlight or heat.

D. DIU CD-ROM Cleaning Procedure

SUBTASK 23-32-06-160-001

(1) Do these steps to clean the CD-ROM:

- (a) Apply a small amount of water (2 or 3 drops) to a lint-free cloth, G01043.
- (b) Hold the CD-ROM by its edges with one hand, with the recording side (shiny side) up.

CAUTION: DO NOT USE TOO MUCH PRESSURE ON THE CD ROM. DO NOT USE A DIRTY CLOTH TO CLEAN THE CD ROM. DO NOT CLEAN THE CD ROM WITH A CLOTH IN A CIRCULAR DIRECTION. DAMAGE TO THE CD ROM CAN OCCUR.

- (c) With the other hand, gently wipe the CD-ROM from the center hole to the edge of the CD-ROM until the entire recording surface has been cleaned.
- (d) Use compressed air (less than 10psi) to blow any dirt or dust that may remain on the CD-ROM.

END OF TASK

EFFECTIVITY

HAP 001-013, 015-026, 028-054, 104-999

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DIGITAL INTERFACE UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has two tasks:
 - (1) A removal of the digital interface unit.
 - (2) An installation of the digital interface unit.

TASK 23-32-06-000-804

2. Digital Interface Unit (DIU) Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the digital interface unit.

HAP 001-013, 015-026, 028-030

- (2) The digital interface unit is located on the E3-2 shelf.
 - (a) When you remove the digital interface unit, do not supply the electrical power to the video system.

HAP 031-054, 104-999

- (3) The digital interface unit is located on the E8-1 shelf.
 - (a) When you remove the digital interface unit, do not supply the electrical power to the video system.

HAP 001-013, 015-026, 028-054, 104-999

B. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
23-32-06-000-803	DIU CD-ROM Removal (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Removal Procedure

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-06-020-002

- (1) Remove the CD-ROM from the DIU. To remove it, do this task: DIU CD-ROM Removal, TASK 23-32-06-000-803.

HAP 001-013, 015-026, 028-054, 104-999

EFFECTIVITY

HAP 001-013, 015-026, 028-054, 104-999

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SUBTASK 23-32-06-860-001

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
HAP 038, 041-054, 104-999			
B	11	C01670	ENTERTAINMENT AIRSHOW AC
HAP 001-013, 015-026, 028-054, 104-999			
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

SUBTASK 23-32-06-010-001

(3) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-32-06-020-001

(4) To remove the digital interface unit [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— **END OF TASK** —————

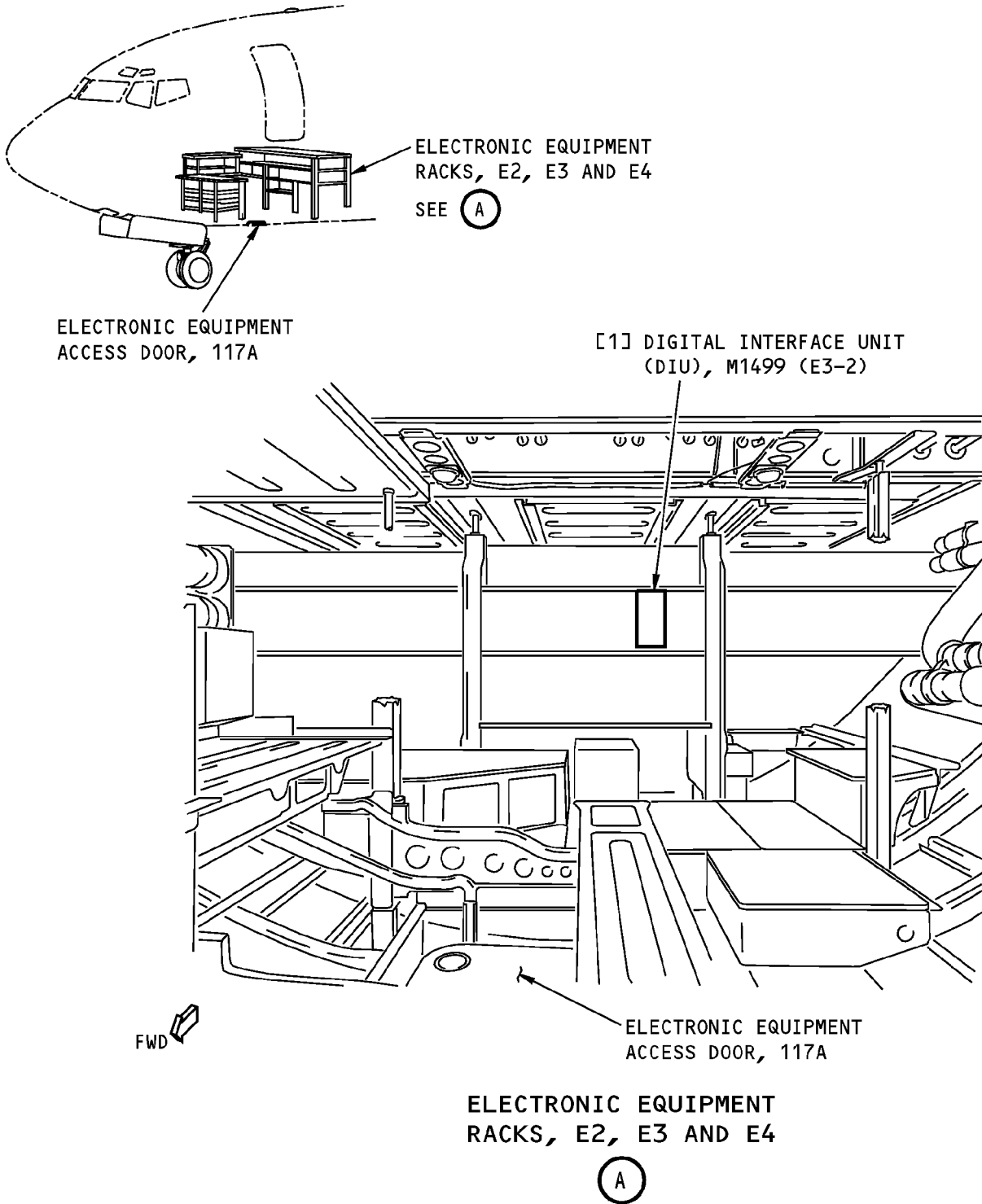
EFFECTIVITY
HAP 001-013, 015-026, 028-054, 104-999

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**Digital Interface Unit (DIU) Installation
Figure 401 (Sheet 1 of 2)/23-32-06-990-801**

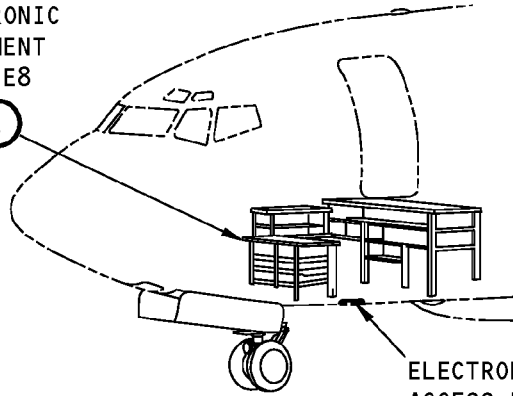
EFFECTIVITY
HAP 001-013, 015-026, 028-030

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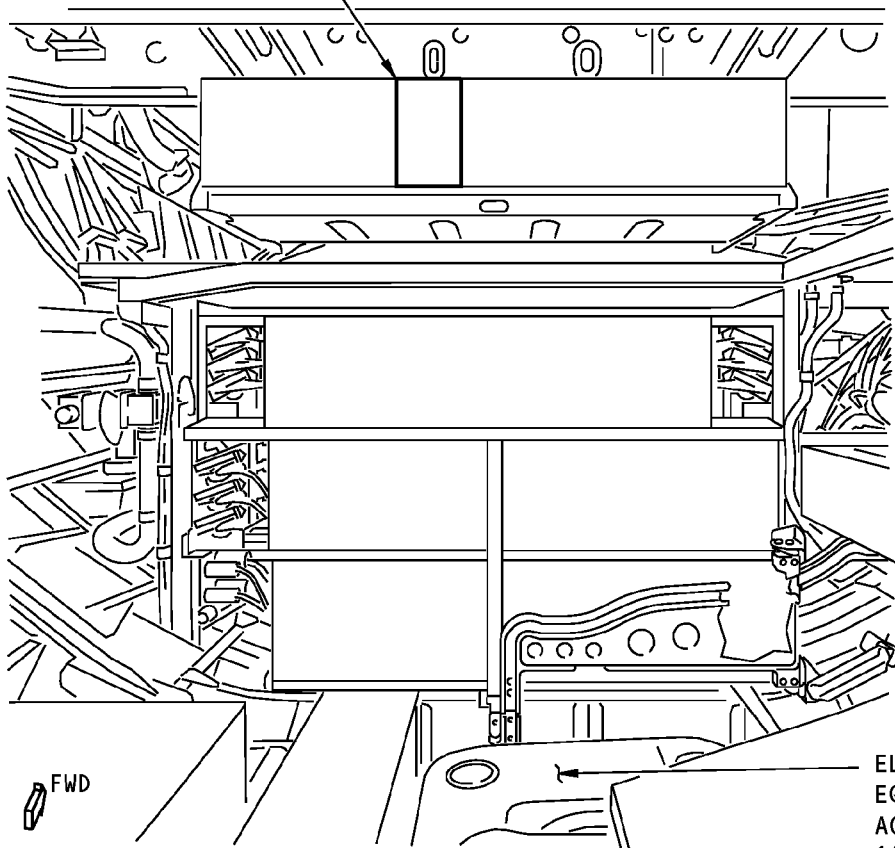
ELECTRONIC
EQUIPMENT
RACK, E8

SEE (A)



ELECTRONIC EQUIPMENT
ACCESS DOOR, 117A

[1] DIGITAL INTERFACE
UNIT (DIU), M1499
(E8-1)



FWD

ELECTRONIC
EQUIPMENT
ACCESS DOOR,
117A

ELECTRONIC EQUIPMENT RACK, E8

(A)

Digital Interface Unit (DIU) Installation
Figure 401 (Sheet 2 of 2)/23-32-06-990-801



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TASK 23-32-06-400-801

3. Digital Interface Unit (DIU) Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the digital interface unit.

B. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
23-32-06-400-805	DIU CD-ROM Installation (P/B 201)
23-32-06-700-801	DIU Software Configuration Check (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Digital interface unit	23-32-06-04-008	HAP 012, 013, 015-026, 028-030
		23-32-21-01-008	HAP 001-011

D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Installation Procedure

SUBTASK 23-32-06-860-002

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
-----	-----	--------	------

HAP 038, 041-054, 104-999

B	11	C01670	ENTERTAINMENT AIRSHOW AC
---	----	--------	--------------------------

HAP 001-013, 015-026, 028-054, 104-999

C	5	C01450	ENTERTAINMENT VID CONT CENTER DC
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SUBTASK 23-32-06-420-001

(2) To install the digital interface unit [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-32-06-860-003

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
-----	-----	--------	------

HAP 038, 041-054, 104-999

B	11	C01670	ENTERTAINMENT AIRSHOW AC
---	----	--------	--------------------------

EFFECTIVITY
HAP 001-013, 015-026, 028-054, 104-999

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HAP 038, 041-054, 104-999 (Continued)

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
HAP 001-013, 015-026, 028-054, 104-999			
C	5	C01450	ENTERTAINMENT VID CONT CENTER DC

SUBTASK 23-32-06-750-001

(4) Do this task: DIU Software Configuration Check, TASK 23-32-06-700-801

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-06-420-002

(5) Install the CD-ROM in the DIU. To install it, do this task: DIU CD-ROM Installation, TASK 23-32-06-400-805.

HAP 001-013, 015-026, 028-054, 104-999

G. Installation Test

SUBTASK 23-32-06-860-020

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-06-710-007

(2) Do this test of the digital interface unit (DIU):

- (a) Get access to the video control center.
- (b) Make the selections on the VSCU to display cabin information system video on the monitors in the passenger cabin.
 - 1) Make sure you see video from the cabin information system on the cabin video monitors.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 23-32-06-410-001

(1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-32-06-860-019

(2) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY
HAP 001-013, 015-026, 028-054, 104-999

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PSU-MOUNTED LCD MONITOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

- (1) A removal of the PSU-mounted LCD monitor.
- (2) An installation of the PSU-mounted LCD monitor.

TASK 23-32-13-000-801

2. PSU-Mounted LCD Monitor Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the PSU-mounted LCD monitor (referred to as the monitor).
- (2) The monitor and PSU overhead door are installed as one assembly and will be referred to as the PSU panel assembly.
- (3) The monitors are installed under the overhead stowage bins.
 - (a) When you remove the monitor, do not supply the electrical power to the video system.

B. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Removal Procedure

SUBTASK 23-32-13-860-001

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	5	C01452	VIDEO 1
D	6	C01453	VIDEO 2
D	7	C01454	VIDEO 3
D	8	C01455	VIDEO 4
HAP 031-037, 039-041, 047, 049, 050, 054			
D	8	C01455	VIDEO 4 (INOP)

HAP ALL

SUBTASK 23-32-13-020-001

- (2) Do these steps to remove the applicable PSU panel assembly [2]:

NOTE: The monitor and PSU overhead door are removed as one assembly.

- (a) Release the latches on the inboard side of the PSU overhead door to get access to the PSU panel assembly [2].

NOTE: Put the locally manufactured tool into the access holes in the PSU overhead door.

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HAP ALL

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- (b) Release the lanyard [3] to lower the PSU panel assembly [2].
- (c) Disconnect the three electrical connectors [1] from the monitor receptacles.
- (d) Push the two spring-loaded pins on the outboard side of the overhead frame to remove the PSU panel assembly [2].

NOTE: Use the locally manufactured tool to push the pins that release the PSU overhead door from the overhead frame.

- (e) Remove the monitor [2] panel assembly.

————— **END OF TASK** —————

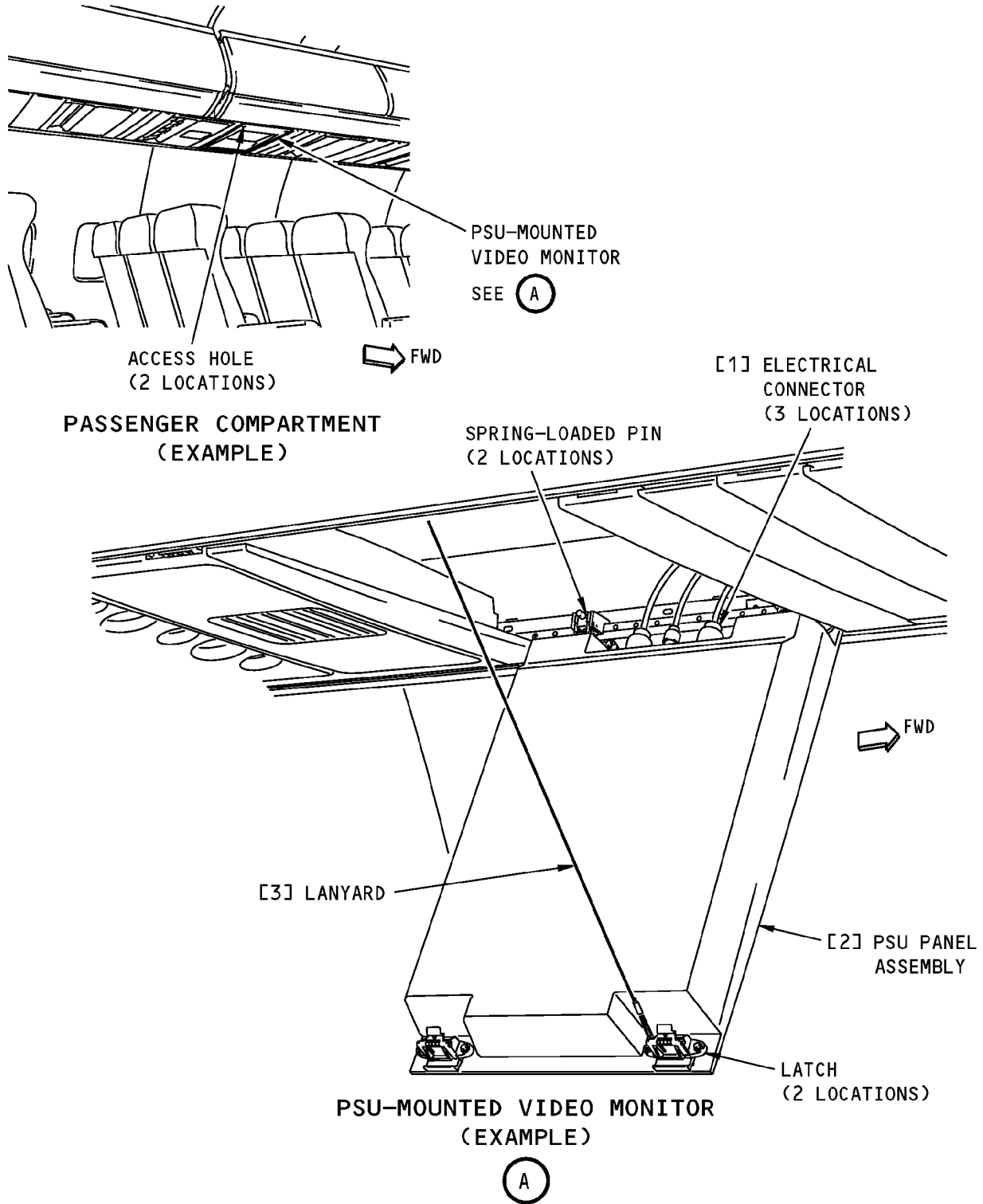
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**PSU-Mounted Video Monitor Installation
Figure 401/23-32-13-990-801**

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TASK 23-32-13-400-801

3. PSU-Mounted LCD Monitor Installation

(Figure 401)

A. General

- (1) This task is the installation procedure for the PSU-mounted LCD monitor (referred to as the monitor).
(2) The monitor and PSU overhead door are installed as one assembly and will be referred to as the PSU panel assembly.

B. References

Table with 2 columns: Reference, Title. Rows include 24-22-00-860-811 Supply Electrical Power (P/B 201) and 24-22-00-860-812 Remove Electrical Power (P/B 201)

C. Expendables/Parts

Table with 4 columns: AMM Item, Description, AIPC Reference, AIPC Effectivity. Row 1: 2, Monitor, 23-32-13-01S-005, HAP 048. Subsequent rows list various AIPC references and their corresponding effectivity codes.

D. Location Zones

Table with 2 columns: Zone, Area. Rows include 231 Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left, 232 Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right, 241 Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left

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(Continued)

Zone	Area
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

E. Installation Procedure

SUBTASK 23-32-13-420-001

- (1) Do these steps to install the applicable PSU panel assembly [2]:

NOTE: The monitor and PSU overhead door are installed as one assembly.

- (a) Put the monitor [2] panel assembly in its correct position.
- (b) Engage the two spring-loaded pins in the outboard side of the overhead frame to install the PSU panel assembly [2].
- (c) Connect the lanyard [3] to support the PSU panel assembly [2].
- (d) Connect the three electrical connectors [1] to the monitor receptacles.
- (e) Lift up the PSU panel and put the lanyard [3] in the shortened position.
 - 1) Attach the lanyard hook to the small ring on the lanyard [3].

SUBTASK 23-32-13-410-001

- (2) Push the PSU overhead door back to its correct position.

NOTE: Make sure that the latches on the inboard side of the PSU door assembly lock before you release the PSU overhead door.

SUBTASK 23-32-13-420-002

- (3) To positively latch the Video Retract Panels to the inboard PSU rails, the following steps shall be taken during the monitor installation:

- (a) Make sure that the inboard edge of the video monitor clears the inboard edge of the stow-bin rail.
- (b) Make sure that the clicking sound of the cam-latch is heard.
- (c) Apply down pull pressure to the video panel to make sure that it is latched after installation is complete.
 - 1) Lower the PSU to the service position if access to the video panel is blocked by an adjacent PSU.

SUBTASK 23-32-13-860-008

- (4) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-32-13-860-002

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	5	C01452	VIDEO 1
D	6	C01453	VIDEO 2
D	7	C01454	VIDEO 3
D	8	C01455	VIDEO 4
HAP 031-037, 039-041, 047, 049, 050, 054			
D	8	C01455	VIDEO 4 (INOP)

HAP ALL

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F. Installation Test

HAP 001-013, 015-026, 028-030

SUBTASK 23-32-13-710-001

- (1) Do this test of the monitor:
 - (a) Get access to the video control center.
 - (b) Push the power button on the video system control unit (VSCU) to the on position.
 - (c) Put a media source (tape, CD, or DVD) into the video reproducer 1.
 - (d) Push the MODE SELECT button on the VSCU until the MANUAL light comes on.
 - (e) Push the UP/DOWN arrow buttons on the VSCU until ZONE CONTROL is selected.
 - (f) Push the ENTER button.
 - (g) Push the UP/DOWN arrow buttons until ZN1 VTR 1 PWR status OFF is selected.
 - (h) Push the SEL button.
 - 1) Make sure the status changes to ON.
 - (i) Push the ENTER button.
 - (j) Push the PLAY button on video reproducer 1.
 - 1) Make sure that the monitor lowers from the stowed position.
 - 2) Make sure that you see video from video reproducer 1 on the monitor.
 - (k) Push the STOP button on video reproducer 1.
 - (l) Push the EJECT button on video reproducer 1.
 - (m) Remove the media source from the video reproducer.
 - (n) Push the power button on the VSCU.
 - 1) Make sure the monitor returns to the stowed position.
 - (o) Close the access door for the video control center if necessary.

HAP 031-054, 101-999

SUBTASK 23-32-13-710-004

- (2) Do this test of the passenger video system:
 - (a) If it is necessary, push the power button on the video system control unit (VSCU) to the on position.
 - 1) Make sure the green PASS light stays on.
 - 2) Make sure the video reproducer (VR) power is on.
 - (b) Make sure the ALL ZONES LED is green.
 - 1) If the ALL ZONES LED is not green, push the MODE SELECT button to select ALL ZONES.
 - (c) Make sure the main menu is displayed.
 - (d) Do these steps to play video from the VR:
 - 1) Put a media source (tape, CD, or DVD) in the VR if necessary.
 - 2) Push the number on the VSCU numeric keypad to select PLAY VIDEO.
 - a) Make sure the cabin monitors lower from the stowed position.
 - b) Make sure you see video from the VR on the cabin monitors.

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HAP 031-054, 101-999 (Continued)

- 3) Push the STOP button on the VSCU.
- 4) Push the number on the VSCU numeric keypad to select SCREENS OFF.
 - a) Make sure the monitors raise to the stowed position.
- (e) Push the power button on the VSCU to the off position.
- (f) Close the access door for the video control center if necessary.

HAP ALL

SUBTASK 23-32-13-860-007

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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PASSENGER ENTERTAINMENT SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has one task: an operational test of the passenger audio system. The test will make sure that the system operates correctly.

TASK 23-34-00-710-801

2. Passenger Entertainment System - Operational Test

A. References

Reference	Title
23-31-00-740-801	Passenger Address System - Operational Test (P/B 501)
23-34-01-000-801	Compact Disc (CD) Removal (P/B 201)
23-34-01-400-801	Compact Disc (CD) Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

C. Prepare For Test

SUBTASK 23-34-00-860-004

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-34-00-710-001

(2) Do these steps to prepare for the test:

- (a) Make sure the passenger address system is serviceable (TASK 23-31-00-740-801).
- (b) Remove the compact discs (CDs) from the AEP. To remove them, do this task: Compact Disc (CD) Removal, TASK 23-34-01-000-801.
- (c) Install the test CDs in the AEP (980-9905-006 in Slot A, -007 in Slot B, -008 in Slot C, -009 in Slot D). To install them, do this task: Compact Disc (CD) Installation, TASK 23-34-01-400-801.
- (d) Make sure the ENTERTAINMENT IFE button on the forward attendant's panel (P13) is set to the off position.

D. Procedure

SUBTASK 23-34-00-710-002

(1) Do this test of the passenger entertainment system:

HAP 031-054, 101-999; HAP 001-013, 015-026, 028-030 POST SB 737-24-1147

- (a) Push the IFE/PASS SEAT switch on pilot's overhead panel P5 to the ON position.

EFFECTIVITY
HAP ALL

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HAP 031-054, 101-999; HAP 001-013, 015-026, 028-030 POST SB 737-24-1147 (Continued)

HAP ALL

- (b) Push the ENTERTAINMENT ON/OFF button on forward Attendant's panel to the ON position.
 - 1) Make sure the switch light comes on.
- (c) Connect headphones to the headphone jack at a seat.
- (d) Make sure the volume control on the passenger control unit (PCU) changes the volume level in the headphones.
- (e) Make sure the audio heard on the PCU agrees with the channel assignment data in the inflight magazine.

SUBTASK 23-34-00-710-003

(2) Do this test of the PA announcement:

- (a) Start a prerecorded announcement on the boarding music tape reproducer (TASK 23-31-00-740-801).
 - 1) Make sure the passenger entertainment system (PES) audio stops.
 - 2) Make sure you hear the announcement.
- (b) Make an announcement from an attendant's handset.
 - 1) Make sure that you hear the announcement from the attendant's handset on the PA speakers.
 - 2) Make sure you do not hear audio from the PES on the headphones.
- (c) Make an announcement from a pilot's station.
 - 1) Make sure that you hear the announcement from the pilot's station on the PA speakers.
 - 2) Make sure you do not hear audio from the PES on the headphones.

E. Put the airplane back to its usual condition

SUBTASK 23-34-00-080-001

- (1) Remove the test compact discs (CDs) from the AEP. To remove them, do this task: Compact Disc (CD) Removal, TASK 23-34-01-000-801.

SUBTASK 23-34-00-410-001

- (2) Install CDs in the AEP. To install them, do this task: Compact Disc (CD) Installation, TASK 23-34-01-400-801.

SUBTASK 23-34-00-800-001

- (3) Push the ENTERTAINMENT IFE button on the forward attendant's panel to the OFF position.

HAP 031-054, 101-999; HAP 001-013, 015-026, 028-030 POST SB 737-24-1147

SUBTASK 23-34-00-860-005

- (4) Push the IFE/PASS SEAT switch on pilot's overhead panel P5 to the OFF position.

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SUBTASK 23-34-00-860-003

- (5) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

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AUDIO ENTERTAINMENT PLAYER - MAINTENANCE PRACTICES

1. General

A. This procedure contains:

- (1) A task to remove a compact disc (CD) from the CD module of the audio entertainment player (AEP).
- (2) A task to install a CD into the CD module of the AEP.
- (3) A task to clean the CD.
- (4) A task to remove the audio entertainment player.
- (5) A task to install the audio entertainment player.

TASK 23-34-01-000-801

2. Compact Disc (CD) Removal

A. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

B. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

C. Removal Procedure

SUBTASK 23-34-01-010-001

(1) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 23-34-01-020-001

- (2) Remove the compact disc (CD) from the CD module of the audio entertainment player (AEP):
 - (a) While you push the latch below the front panel, pull the front panel out from the AEP.
 - (b) Remove the CD from the CD module.
 - (c) Carefully push the front panel into the AEP.

————— **END OF TASK** —————

TASK 23-34-01-400-801

3. Compact Disc (CD) Installation

A. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

B. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

EFFECTIVITY
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C. Installation Procedure

SUBTASK 23-34-01-010-002

(1) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 23-34-01-160-002

(2) If necessary, clean the compact disc (CD). To clean it, do this task: Clean Compact Disc, TASK 23-34-01-100-802.

SUBTASK 23-34-01-420-001

(3) Install the compact disc (CD) into the CD module of the audio entertainment player (AEP):

- (a) Do this step if the front panel is not open:
 - 1) While you push the latch below the front panel, pull the front panel out from the AEP.
- (b) Install the CD into the CD module.
- (c) Carefully push the front panel into the AEP.

————— END OF TASK —————

TASK 23-34-01-100-802

4. Clean Compact Disc

A. General

(1) This task shows how to clean the compact disc.

B. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Procedure

SUBTASK 23-34-01-160-003

(1) Do these steps to clean the compact disc (CD):

- (a) Hold the CD with one hand, with the CD label face down.
- (b) Apply two to three drops of water to a clean cotton wiper, G00034.

CAUTION: DO NOT USE TOO MUCH PRESSURE ON THE CD ROM. DO NOT USE A DIRTY CLOTH TO CLEAN THE CD ROM. DO NOT CLEAN THE CD ROM WITH A CLOTH IN A CIRCULAR DIRECTION. DAMAGE TO THE CD ROM CAN OCCUR.

- (c) Wipe the CD from the center to the edge of the recording surface with the cotton wiper, G00034.
- (d) Use an air blower to blow any dirt or dust that may remain on the CD.

————— END OF TASK —————

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TASK 23-34-01-000-803

5. Audio Entertainment Player Removal

(Figure 201)

A. General

- (1) This procedure contains a task to remove the audio entertainment player (AEP). The AEP is also referred to as the audio reproducer unit (ARU). For consistency, this procedure will use the term AEP when referring to the audio reproducer unit.

HAP 031-054, 101-999

- (2) The audio entertainment player is installed on the E3-2 shelf in the main equipment center.
 - (a) When you remove the audio entertainment player, do not supply the electrical power to the audio entertainment system.
 - (b) A lever that is part of the handle holds the audio entertainment player in the E3 rack mount.

HAP 001-013, 015-026, 028-030

- (3) The audio entertainment player is installed on the E8-1 shelf in the main equipment center.
 - (a) When you remove the audio entertainment player, do not supply the electrical power to the audio entertainment system.
 - (b) A lever that is part of the handle holds the audio entertainment player in the E8 rack mount.

HAP ALL

B. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Removal Procedure

SUBTASK 23-34-01-860-001

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO

HAP 001-013, 015-026, 028-030

C	10	C01101	ENTERTAINMENT MUX
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EFFECTIVITY

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HAP 001-013, 015-026, 028-030 (Continued)

HAP ALL

SUBTASK 23-34-01-010-005

(2) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-34-01-020-004

(3) To remove the audio entertainment player [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— **END OF TASK** —————

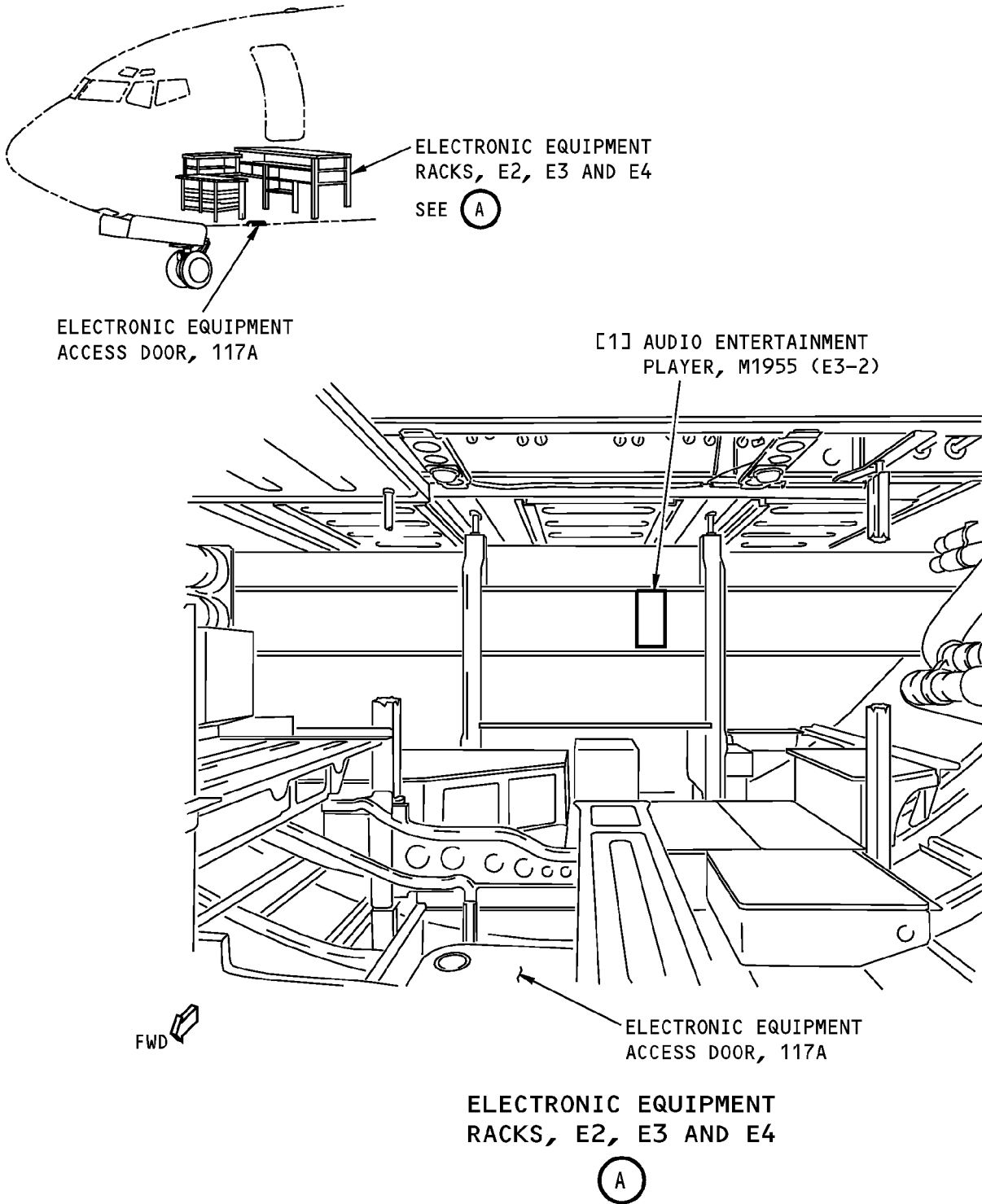
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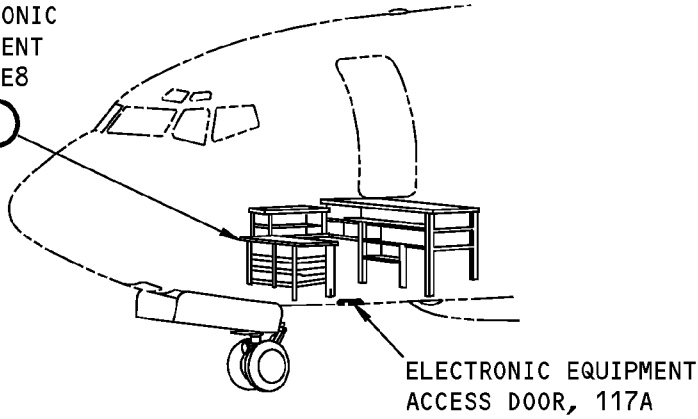
**Audio Entertainment Player Maintenance Practices
Figure 201 (Sheet 1 of 2)/23-34-01-990-801**

EFFECTIVITY
HAP 031-054, 101-999

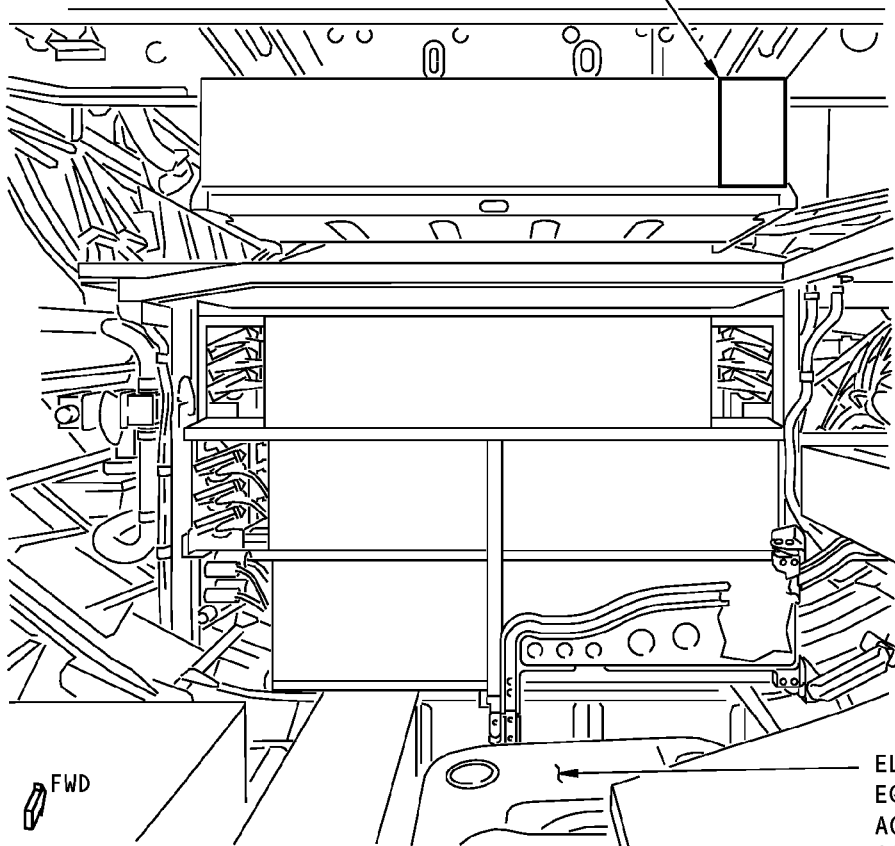
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ELECTRONIC EQUIPMENT RACK, E8

SEE (A)



[1] AUDIO ENTERTAINMENT PLAYER, M1955 (E8-1)



ELECTRONIC EQUIPMENT RACK, E8

(A)

**Audio Entertainment Player Maintenance Practices
Figure 201 (Sheet 2 of 2)/23-34-01-990-801**

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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TASK 23-34-01-400-803

6. Audio Entertainment Player Installation

(Figure 201)

A. General

- (1) This procedure contains a task to install the audio entertainment player. The AEP is also referred to as the audio reproducer unit (ARU). For consistency, this procedure will use the term AEP when referring to the audio reproducer unit.
- (2) When you install the audio entertainment player, do not supply the electrical power to the audio entertainment system.

HAP 031-054, 101-999; HAP 001-013, 015-026, 028-030 POST SB 737-24-1147

- (3) Make sure that the IFE/PASS SEAT switch on pilot's overhead panel P5 is set to the OFF position.

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- (4) Make sure that the ENTERTAINMENT ON/OFF button on forward Attendant's panel to the OFF position.

B. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
23-34-00-710-801	Passenger Entertainment System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Installation Procedure

SUBTASK 23-34-01-860-014

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO
HAP 001-013, 015-026, 028-030			
C	10	C01101	ENTERTAINMENT MUX

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SUBTASK 23-34-01-420-004

- (2) To install the audio entertainment player [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-34-01-010-006

- (3) Close this access panel:

Table with 2 columns: Number, Name/Location. Row 1: 117A, Electronic Equipment Access Door

SUBTASK 23-34-01-860-003

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

F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Rows: C 8 C01456 ENTERTAINMENT AUDIO; HAP 001-013, 015-026, 028-030; C 10 C01101 ENTERTAINMENT MUX

HAP ALL

F. Installation Test

SUBTASK 23-34-01-860-013

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-34-01-710-001

- (2) Do this task: Passenger Entertainment System - Operational Test, TASK 23-34-00-710-801.

SUBTASK 23-34-01-860-012

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

Box containing EFFECTIVITY and HAP ALL

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AIRCRAFT MAINTENANCE MANUAL

AUDIO MULTIPLEXER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

- (1) A removal of the audio multiplexer.
- (2) An installation of the audio multiplexer.

TASK 23-34-02-000-801

2. Audio Multiplexer Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the audio multiplexer.

HAP 031-054, 101-999

- (2) The audio multiplexer is installed on the E4-2 shelf in the main equipment center.
 - (a) When you remove the audio multiplexer, do not supply the electrical power to the audio entertainment system.
 - (b) A lever that is part of the handle holds the audio multiplexer in the E4 rack mount.

HAP 001-013, 015-026, 028-030

- (3) The audio multiplexer is installed on the E8-1 shelf in the main equipment center.
 - (a) When you remove the audio multiplexer, do not supply the electrical power to the audio entertainment system.
 - (b) A lever that is part of the handle holds the audio multiplexer in the E8 rack mount.

HAP ALL

B. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Removal Procedure

SUBTASK 23-34-02-860-001

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
HAP 001-013, 015-026, 028-030			
C	10	C01101	ENTERTAINMENT MUX

HAP ALL

SUBTASK 23-34-02-010-001

(2) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-34-02-020-001

(3) To remove the audio multiplexer [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

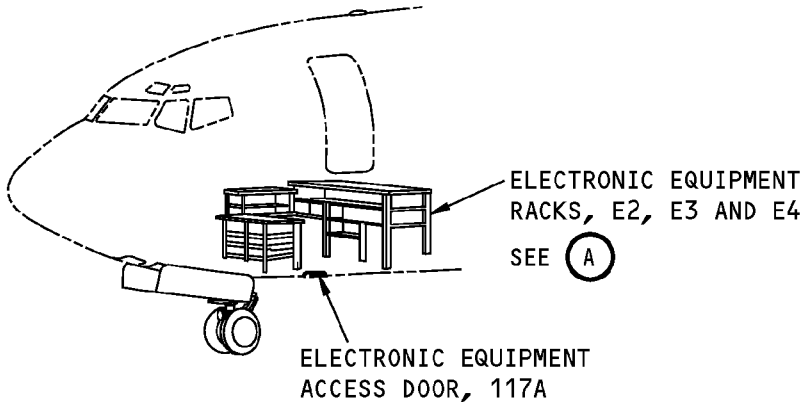
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EFFECTIVITY
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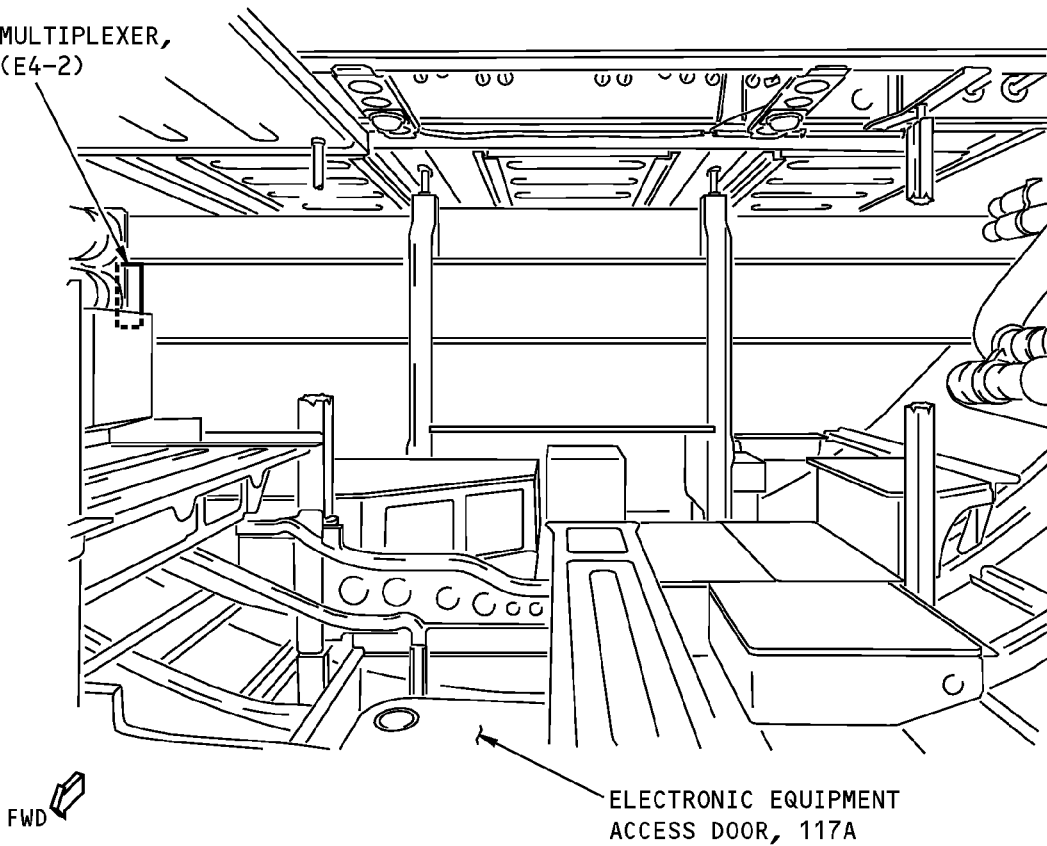
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[1] AUDIO MULTIPLEXER, M1956 (E4-2)



ELECTRONIC EQUIPMENT RACKS, E2, E3 AND E4

(A)

**Audio Multiplexer Installation
Figure 401 (Sheet 1 of 2)/23-34-02-990-801**

EFFECTIVITY
HAP 031-054, 101-999

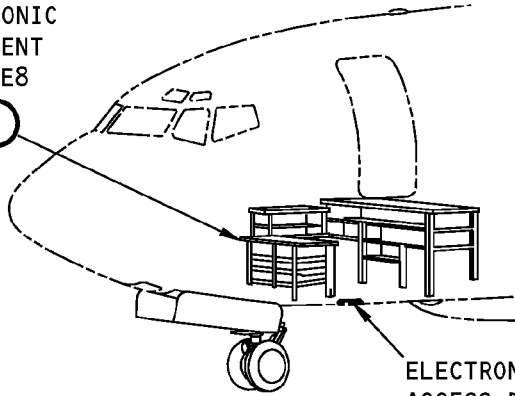
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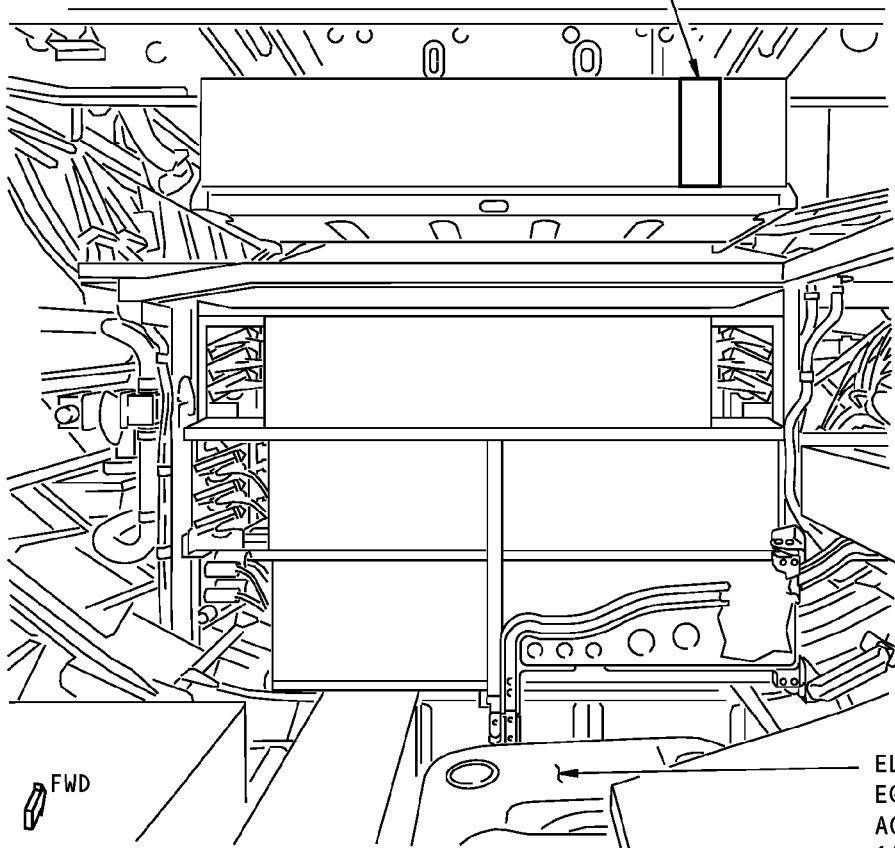
ELECTRONIC EQUIPMENT RACK, E8

SEE (A)



ELECTRONIC EQUIPMENT ACCESS DOOR, 117A

[1] AUDIO MULTIPLEXER, M1956 (E8-1)



FWD

ELECTRONIC EQUIPMENT ACCESS DOOR, 117A

ELECTRONIC EQUIPMENT RACK, E8

(A)

Audio Multiplexer Installation
Figure 401 (Sheet 2 of 2)/23-34-02-990-801

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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TASK 23-34-02-400-801

3. Audio Multiplexer Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the audio multiplexer.

B. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
23-34-00-710-801	Passenger Entertainment System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Multiplexer	23-34-02-04-005	HAP 001-013, 015-026, 028-030
		23-34-02-12-050	HAP 031-054, 101-999

D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Installation Procedure

SUBTASK 23-34-02-420-001

(1) To install the audio multiplexer [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-34-02-010-002

(2) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 23-34-02-860-002

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO
HAP 001-013, 015-026, 028-030			
C	10	C01101	ENTERTAINMENT MUX

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HAP 001-013, 015-026, 028-030 (Continued)

HAP ALL

G. Audio Multiplexer Memory Update

SUBTASK 23-34-02-860-010

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

H. Installation Test

SUBTASK 23-34-02-710-001

- (1) Do this task: Passenger Entertainment System - Operational Test, TASK 23-34-00-710-801.

SUBTASK 23-34-02-860-009

- (2) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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SEAT ELECTRONICS BOX - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

- (1) A removal of the seat electronics box.
- (2) An installation of the seat electronics box.

TASK 23-34-04-000-801

2. Seat Electronics Box Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the seat electronics box (SEB).
- (2) An SEB is installed under each passenger seat group on the seat leg.
 - (a) When you remove the SEB, do not supply the electrical power to the audio system.

B. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Removal Procedure

SUBTASK 23-34-04-860-001

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO
HAP 001-013, 015-026, 028-030			
C	10	C01101	ENTERTAINMENT MUX

HAP ALL

SUBTASK 23-34-04-840-001

CAUTION: DO NOT TOUCH THE SEAT ELECTRONICS BOX BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SEAT ELECTRONICS BOX.

- (2) Before you touch the SEB [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

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SUBTASK 23-34-04-020-001

- (3) Do these steps to remove the SEB [1]:
- (a) Remove the screws [2] that attach the shroud [3] to the seat bracket.
 - (b) Remove the shroud [3].
 - (c) Disconnect the three electrical connectors [4] from the SEB receptacles.
 - (d) Pull the four push-pull knobs that attach the SEB [1] to the seat bracket.
 - (e) Remove the SEB [1] from the seat bracket.

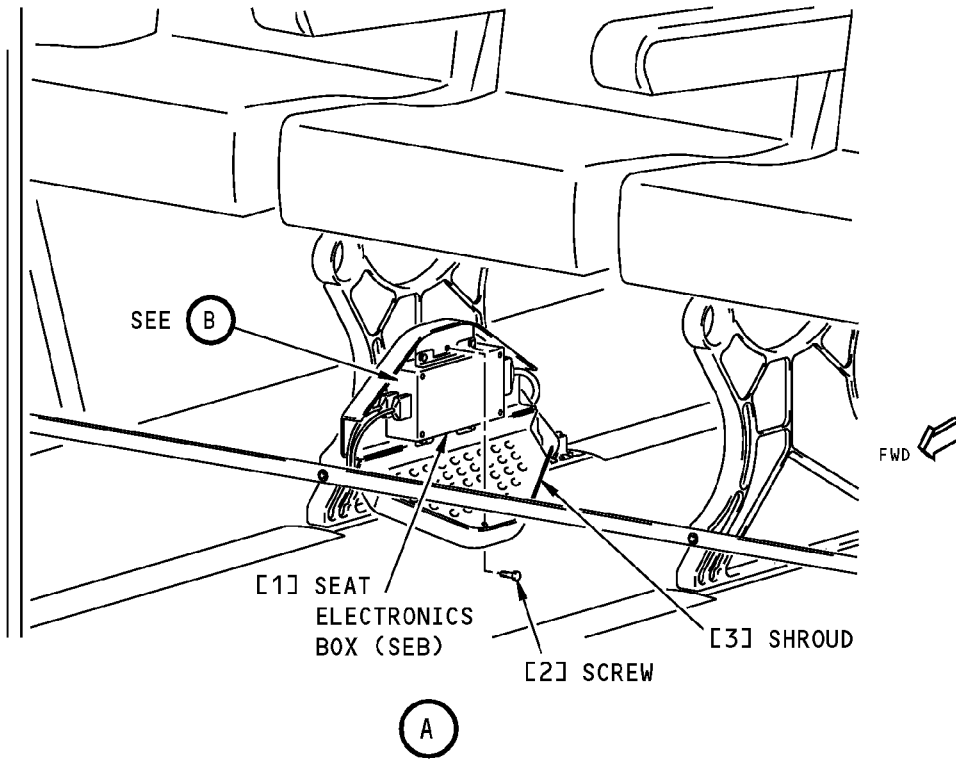
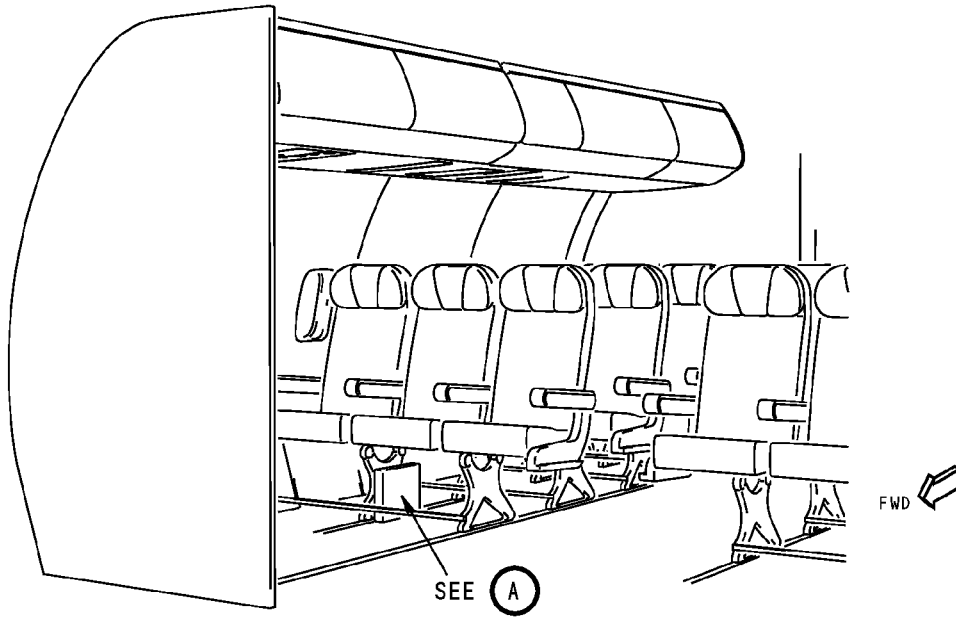
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EFFECTIVITY
HAP ALL

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23-34-04

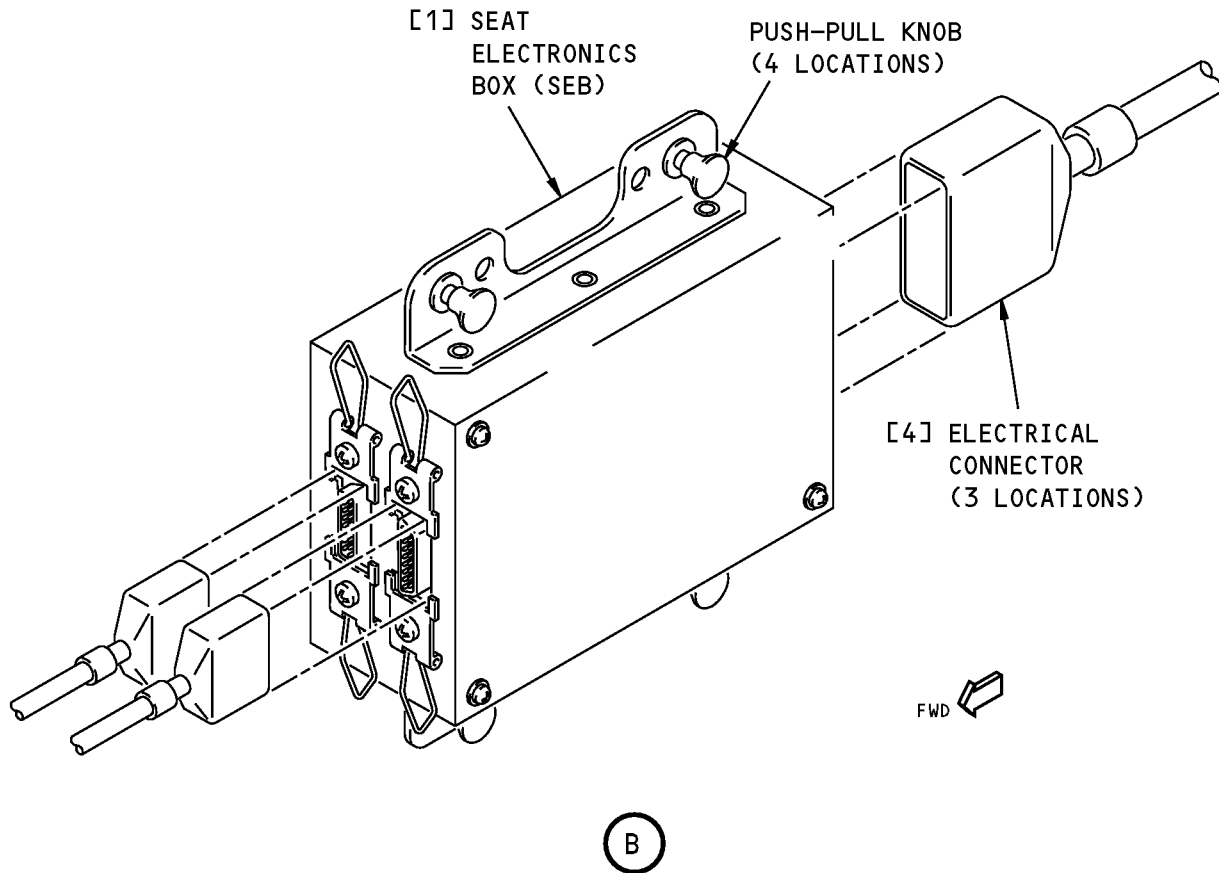
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**Seat Electronics Box (SEB) Installation
Figure 401 (Sheet 1 of 2)/23-34-04-990-801**

EFFECTIVITY
HAP ALL

23-34-04



**Seat Electronics Box (SEB) Installation
Figure 401 (Sheet 2 of 2)/23-34-04-990-801**

EFFECTIVITY
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TASK 23-34-04-400-801

3. Seat Electronics Box Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the seat electronics box (SEB).

B. References

Reference	Title
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-34-00-710-801	Passenger Entertainment System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Installation Procedure

SUBTASK 23-34-04-840-002

CAUTION: DO NOT TOUCH THE SEAT ELECTRONICS BOX BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE SEAT ELECTRONICS BOX.

(1) Before you touch the SEB [1], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 23-34-04-420-001

(2) Do these steps to install the SEB [1]:

- (a) Put the SEB [1] in its correct position on the seat bracket.
- (b) Push the four push-pull knobs that attach the SEB [1] to the seat bracket.
- (c) Connect the three electrical connectors [4] to the SEB receptacles.
- (d) Put the shroud [3] in its correct position.
- (e) Install the screws [2] that attach the shroud [3] to the seat bracket.

SUBTASK 23-34-04-860-003

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO
HAP 001-013, 015-026, 028-030			
C	10	C01101	ENTERTAINMENT MUX

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HAP 001-013, 015-026, 028-030 (Continued)

HAP ALL

E. Seat Electronics Box Installation Test

SUBTASK 23-34-04-860-006

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-34-04-710-001

(2) Do this task: do this task: Passenger Entertainment System - Operational Test, TASK 23-34-00-710-801

SUBTASK 23-34-04-860-005

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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ENTERTAINMENT SWITCH MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

- (1) A removal of the entertainment switch module.
- (2) An installation of the entertainment switch module.

TASK 23-34-05-000-801

2. Entertainment Switch Module Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the entertainment switch module.
- (2) The entertainment switch module is installed on the forward attendants' panel, P13.
 - (a) When you remove the entertainment switch module, do not supply the electrical power to the audio system.

B. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

C. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

D. Removal Procedure

SUBTASK 23-34-05-860-028

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
HAP 009, 015-026, 028-054, 101-999; HAP 001-008, 010-013 POST SB 737-23-1139			
B	10	C01584	ENTERTAINMENT AUDIO DC
HAP ALL			
C	8	C01456	ENTERTAINMENT AUDIO
D	4	C00082	COMMUNICATIONS PA AMPL BAT

SUBTASK 23-34-05-840-001

CAUTION: DO NOT TOUCH THE ENTERTAINMENT SWITCH MODULE BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ENTERTAINMENT SWITCH MODULE.

- (2) Before you touch the entertainment switch module [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-34-05-020-001

- (3) Do these steps to remove the entertainment switch module [1]:
 - (a) Remove the screws [2] that attach the shroud [3] to the attendants' panel.
 - (b) Remove the shroud [3].

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- (c) Remove the screws [4] and washers [5] that attach the entertainment switch module to the attendants' panel.
- (d) Remove the entertainment switch module.

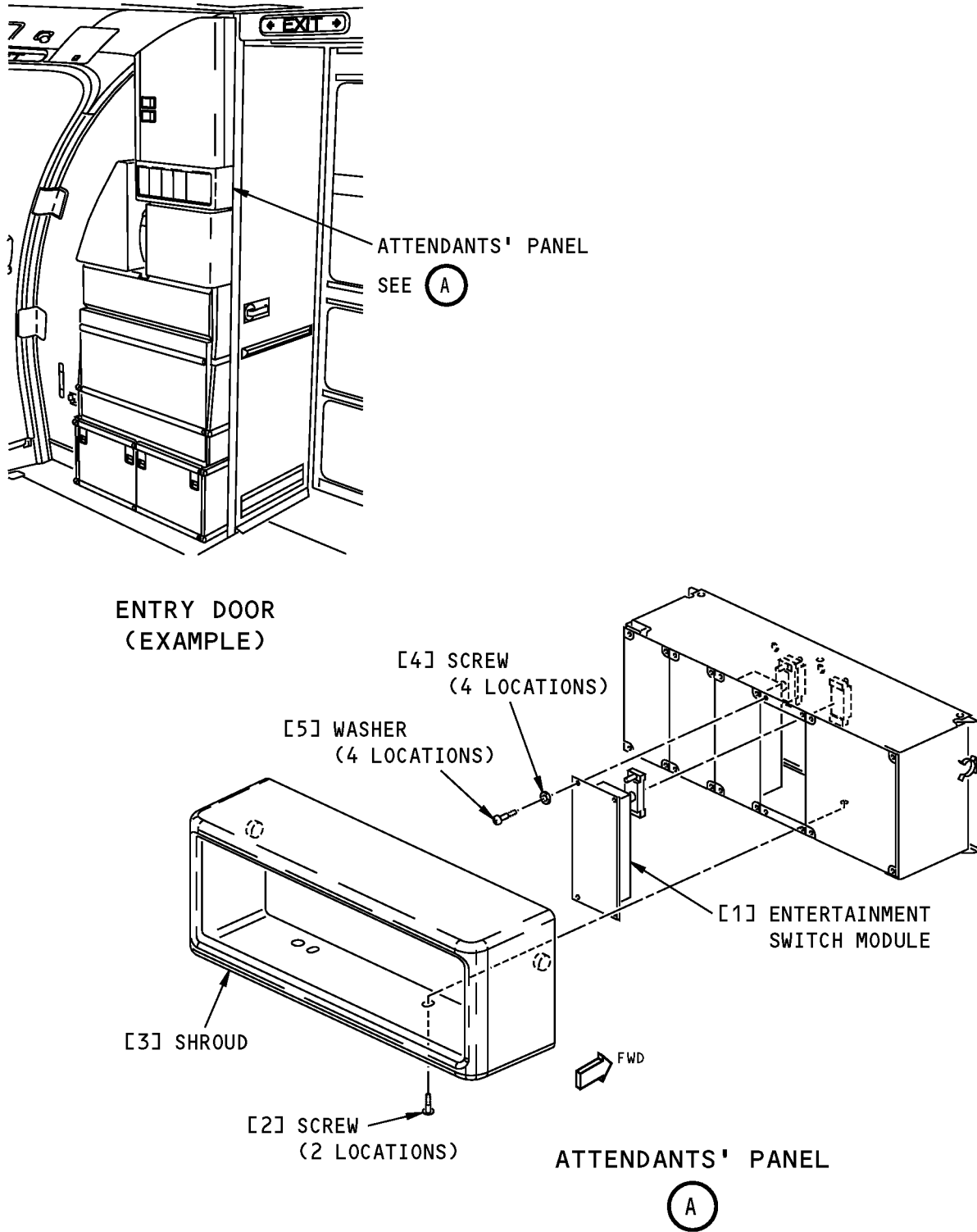
————— **END OF TASK** —————

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**Entertainment Switch Module Installation
Figure 401/23-34-05-990-801**

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TASK 23-34-05-400-801

3. Entertainment Switch Module Installation

(Figure 401)

A. General

- (1) This task is the installation procedure for the entertainment switch module.

B. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Installation Procedure

HAP 001-013, 015-026, 028-030

SUBTASK 23-34-05-860-022

- (1) Make sure that these circuit breakers are open:

HAP 001-008, 010-013 PRE SB 737-23-1139

- (a) Circuit Breaker Panel, P6-1:
- 1) 6C8 ENTERTAINMENT AUDIO
 - 2) 6C10 ENTERTAINMENT MUX
 - 3) 6D4 COMMUNICATIONS PA AMPL BAT

HAP 009, 015-026, 028-030; HAP 001-008, 010-013 POST SB 737-23-1139

- (b) Circuit Breaker Panel, P6-1:
- 1) 6B10 ENTERTAINMENT AUDIO DC
 - 2) 6C8 ENTERTAINMENT AUDIO
 - 3) 6C10 ENTERTAINMENT MUX

HAP ALL

SUBTASK 23-34-05-840-002

CAUTION: DO NOT TOUCH THE ENTERTAINMENT SWITCH MODULE BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ENTERTAINMENT SWITCH MODULE.

- (2) Before you touch the entertainment switch module [1], do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-34-05-420-001

- (3) Do these steps to install the entertainment switch module [1]:
- (a) Put the entertainment switch module [1] in its place over the screw holes on the attendants' panel.
 - (b) Install the screws [4] and washers [5] that attach the entertainment switch module to the attendants' panel.
 - (c) Put the shroud [3] in its place over the attendants' panel.
 - (d) Install the screws [2] that attach the shroud [3] to the attendants' panel.

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HAP 031-054, 101-999

SUBTASK 23-34-05-865-001

- (4) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
- (a) Circuit Breaker Panel, P6-1:
 - 1) 6B10 ENTERTAINMENT AUDIO DC
 - 2) 6C8 ENTERTAINMENT AUDIO

HAP 001-013, 015-026, 028-030

SUBTASK 23-34-05-860-024

- (5) Remove the DO-NOT-CLOSE tags and close these circuit breakers:

HAP 001-008, 010-013 PRE SB 737-23-1139

- (a) Circuit Breaker Panel, P6-1:
 - 1) 6C8 ENTERTAINMENT AUDIO
 - 2) 6C10 ENTERTAINMENT MUX
 - 3) 6D4 COMMUNICATIONS PA AMPL BAT

HAP 009, 015-026, 028-030; HAP 001-008, 010-013 POST SB 737-23-1139

- (b) Circuit Breaker Panel, P6-1:
 - 1) 6B10 ENTERTAINMENT AUDIO DC
 - 2) 6C8 ENTERTAINMENT AUDIO
 - 3) 6C10 ENTERTAINMENT MUX

HAP ALL

D. Installation Test

SUBTASK 23-34-05-860-025

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-34-05-710-001

- (2) Do this test of the entertainment switch module:
- (a) Push the ENTERTAINMENT IFE button to the on position.
 - 1) Make sure the switch light comes on.
 - (b) Push the ENTERTAINMENT IFE button to the off position.

SUBTASK 23-34-05-860-026

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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PASSENGER CONTROL UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure has two tasks:
(1) A removal of the passenger control unit.
(2) An installation of the passenger control unit.

TASK 23-34-11-000-801

2. Passenger Control Unit Removal

(Figure 401)

A. General

- (1) This task is the removal procedure for the passenger control unit (PCU).
(2) The PCU is installed in the passenger seat arm rest.
(a) When you remove the PCU, do not supply the electrical power to the audio system.

B. Location Zones

Table with 2 columns: Zone, Area. Rows include 231, 232, 241, 242 with corresponding area descriptions.

C. Prepare for the Removal

SUBTASK 23-34-11-860-001

- (1) Push the ENTERTAINMENT IFE button on the forward attendant's panel to the off position.

SUBTASK 23-34-11-860-002

- (2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Table with 4 columns: Row, Col, Number, Name. Row C, Col 8, Number C01456, Name ENTERTAINMENT AUDIO

SUBTASK 23-34-11-020-002

- (3) Do these steps to remove the passenger control unit (PCU) [1]:

CAUTION: FOR CAPTIVE-TYPE FASTENERS, LOOSEN THE FASTENER ONLY UNTIL YOU CAN REMOVE THE PCU. IF YOU TURN THE FASTENER TOO MUCH, YOU CAN CAUSE DAMAGE TO THE PCU.

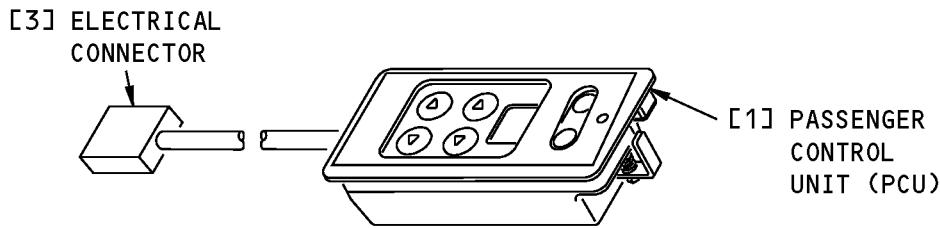
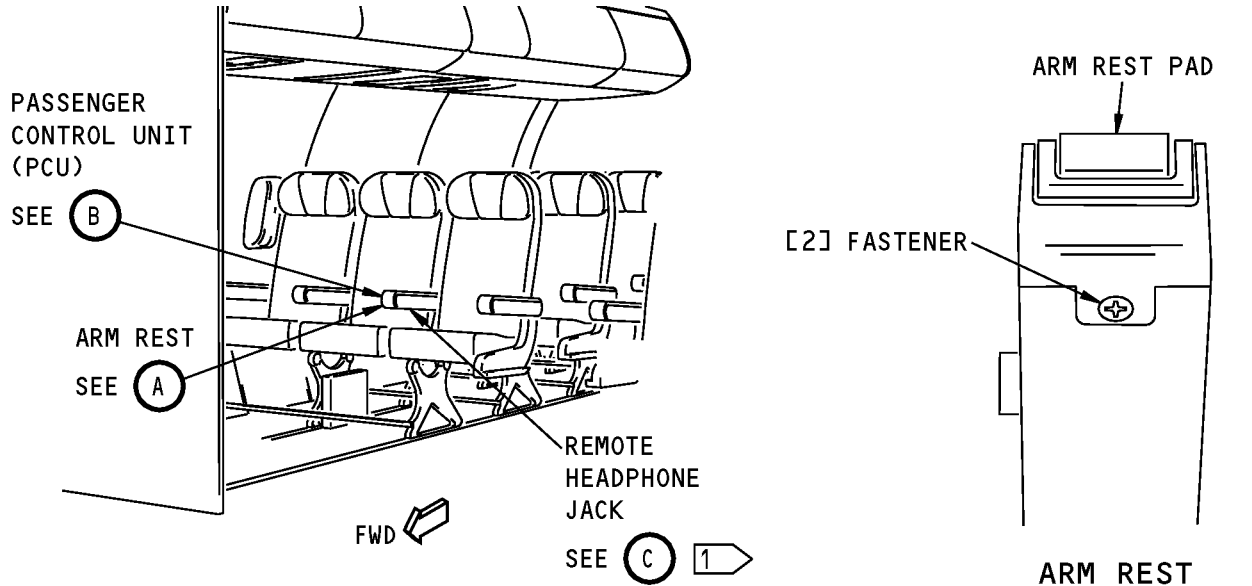
- (a) Remove the fastener [2] that attaches the PCU to the passenger seat arm rest.
(b) Remove the PCU [1] from the arm rest to get access to the electrical connector(s) [3].
(c) Disconnect the electrical connector(s) [3] from the PCU.
(d) Remove the PCU [1].
(e) Put protective covers on the electrical connectors [3].

END OF TASK

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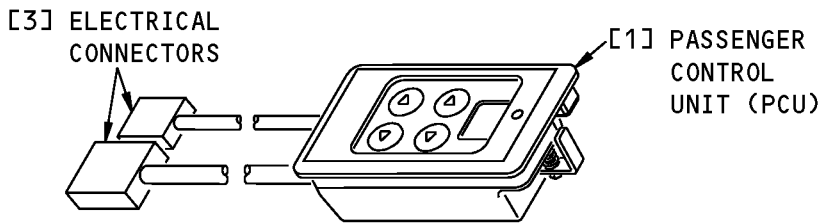
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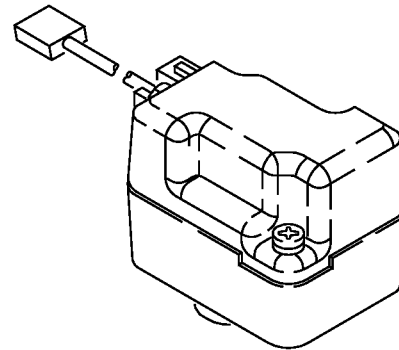
**PASSENGER CONTROL UNIT (PCU)
(SIDE MOUNT)
(EXAMPLE)**

(B)



**PASSENGER CONTROL UNIT (PCU)
(TOP MOUNT)
(EXAMPLE)**

(B)



**REMOTE HEADPHONE JACK
(EXAMPLE)**

(C)

[1] USED WITH TOP MOUNT PCU ONLY

**Passenger Control Unit (PCU) Installation
Figure 401/23-34-11-990-801**

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TASK 23-34-11-400-801

3. Passenger Control Unit Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the passenger control unit (PCU).

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
242	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Right

D. Installation Procedure

SUBTASK 23-34-11-420-001

(1) Do these steps to install the PCU[1]:

- (a) Remove the protective covers from the electrical connectors [3].
- (b) Connect the electrical connector(s) [3] to the PCU [1].
- (c) Lower the passenger seat arm rest.

CAUTION: DO NOT TIGHTEN THE FASTENER TOO MUCH. IF YOU TIGHTEN IT TOO MUCH, YOU CAN CAUSE DAMAGE TO THE PCU.

(d) Install the fastener [2] to attach the arm rest pad to the passenger seat arm rest.

SUBTASK 23-34-11-860-003

(2) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
C	8	C01456	ENTERTAINMENT AUDIO

E. Installation Test

SUBTASK 23-34-11-860-005

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-34-11-710-001

(2) Do these steps to test the PCU:

- (a) Push the ENTERTAINMENT IFE button on the forward attendant's panel to the on position.
 - 1) Make sure the channel display comes on at the PCU.

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SUBTASK 23-34-11-860-004

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

SERVICE INTERPHONE SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure contains this task:
 - (1) An operational test of the service interphone system.

TASK 23-41-00-710-801

2. Service Interphone System - Operational Test

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
118	Electrical and Electronics Compartment - Right
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
241	Aft Passenger Compartment - Station 663.75 to Aft Pressure Bulkhead - Left
315	APU Compartment - Left
600	Right Wing

C. Procedure

SUBTASK 23-41-00-860-005

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-41-00-860-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

HAP 037-054, 101-999

SUBTASK 23-41-00-840-004

- (3) Do these steps to prepare for test:
 - (a) Connect a boom mic/headset to the captain's boom mic/headset jack in the flight deck.

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HAP 037-054, 101-999 (Continued)

- (b) Push the CABIN microphone selector switch on all audio control panels (ACPs).
- (c) Push the volume control for the CABIN microphone selector switch.
- (d) Turn the volume control switch for CABIN to the middle position.
- (e) Set the SERVICE INTERPHONE switch, on the P5 overhead panel in the flight deck, to ON.

HAP 001-013, 015-026, 028-036

SUBTASK 23-41-00-840-001

- (4) Do these steps to prepare for test:
 - (a) Connect a boom mic/headset to the captain's boom mic/headset jack in the flight deck.
 - (b) Push the SERV INT microphone selector switch on all audio control panels (ACPs).
 - (c) Push the volume control for the SERV INT microphone selector switch.
 - (d) Turn the volume control switch for SERV INT to the middle position.
 - (e) Set the SERVICE INTERPHONE switch, on the P5 overhead panel in the flight deck, to ON.

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SUBTASK 23-41-00-710-012

- (5) Do a communication test between the flight crew and the ground crew at the auxiliary power unit:
 - (a) Connect a boom mic/headset to the service interphone jack.
 - (b) Push and hold the R/T - I/C switch on the captain's ACP to the R/T position.
 - (c) Speak into the captain's boom microphone.
 - 1) Make sure the ground crew can hear the voice clearly on the headset.
 - (d) Release the R/T - I/C switch on the captain's ACP.
 - (e) Have the ground crew speak into the boom microphone.
 - 1) Make sure you can hear the voice clearly on the captain's headset.
 - (f) Disconnect the boom mic/headset from the service interphone jack.

SUBTASK 23-41-00-710-004

- (6) Repeat the communication test between the flight crew and the ground crew using the service interphone jack in the overhead at the aft passenger cabin.

SUBTASK 23-41-00-710-005

- (7) Repeat the communication test between the flight crew and the ground crew using the service interphone jack at the refueling station on the right wing.

SUBTASK 23-41-00-710-006

- (8) Repeat the communication test between the flight crew and the ground crew using the service interphone jack at the left wheel well.

SUBTASK 23-41-00-710-007

- (9) Repeat the communication test between the flight crew and the ground crew using the service interphone jack at the right wheel well.

SUBTASK 23-41-00-710-008

- (10) Repeat the communication test between the flight crew and the ground crew using the service interphone jack at the electrical and electronics compartment.

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SUBTASK 23-41-00-710-009

- (11) Do this test of the SERVICE INTERPHONE switch:
- (a) Connect a boom mic/headset to any service interphone jack.
 - (b) Set the SERVICE INTERPHONE switch to OFF.
 - (c) Push and hold the R/T - I/C switch on the captain's ACP to the R/T position.
 - (d) Speak into the captain's boom microphone.
 - 1) Make sure the ground crew can hear the voice on the service interphone headset.
 - (e) Release the R/T - I/C switch on the captain's ACP.
 - (f) Have the ground crew speak into the boom microphone.
 - 1) Make sure you cannot hear the voice on the captain's headset.

SUBTASK 23-41-00-710-010

- (12) Repeat the communication test between the flight crew and the ground crew using the first officer's ACP.

SUBTASK 23-41-00-710-011

- (13) Repeat the communication test between the flight crew and the ground crew using the observer's ACP.

SUBTASK 23-41-00-860-004

- (14) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

ATTENDANT HANDSET - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) Removal of an attendant handset.
- (2) Removal of an attendant handset cord.
- (3) Removal of an attendant handset cradle.
- (4) Installation of an attendant handset cradle.
- (5) Installation of an attendant handset cord.
- (6) Installation of an attendant handset.
- (7) Installation Test of an attendant handset.

B. The attendant handsets are installed at the forward and aft attendant's stations.

TASK 23-42-01-000-801

2. Attendant Handset Removal

(Figure 401)

A. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left

B. Removal Procedure

SUBTASK 23-42-01-020-001

- (1) Remove the attendant handset [4]:
 - (a) Remove the handset [4] from the handset cradle [1].
 - (b) Disconnect the cord [5] from the handset [4].

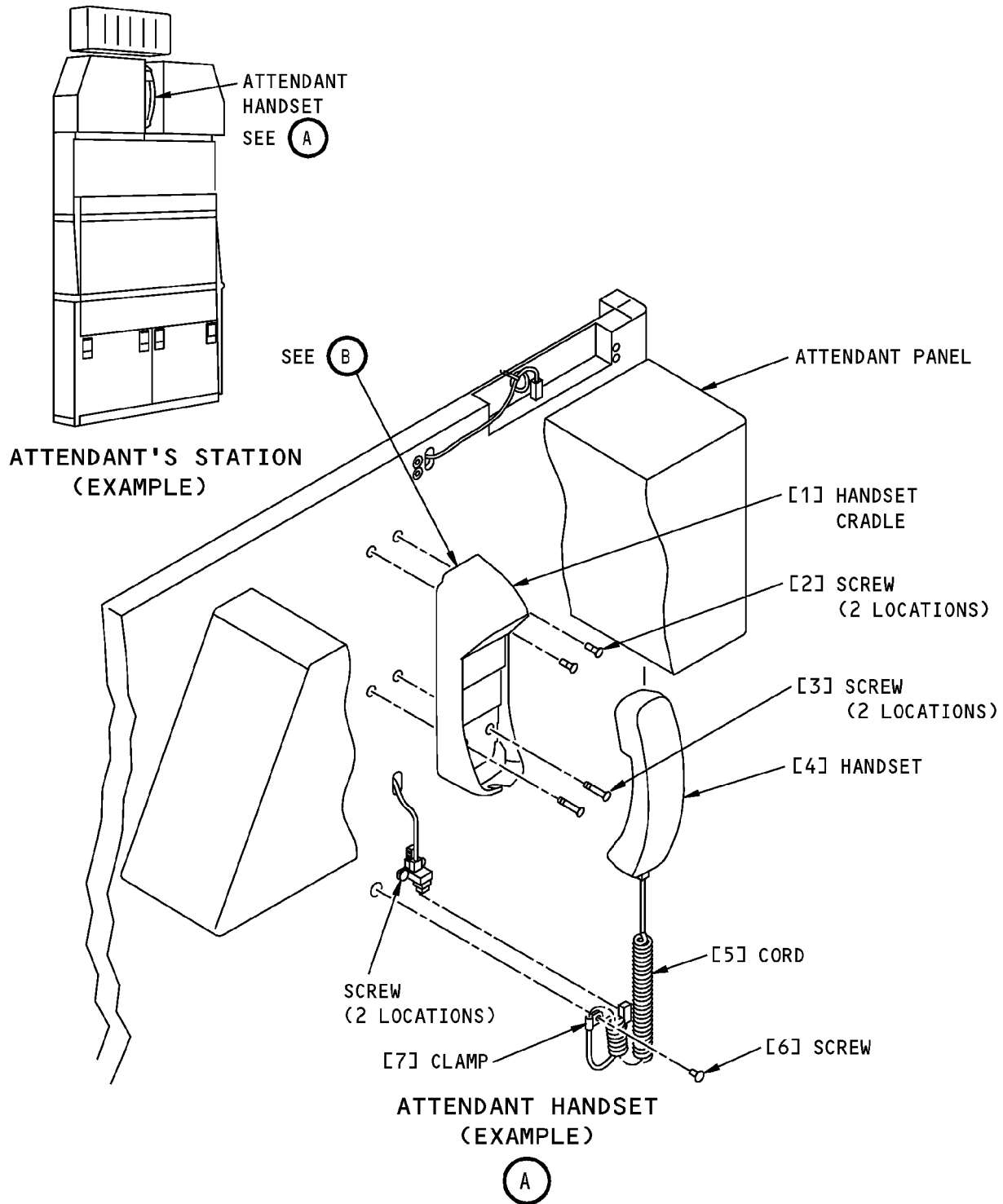
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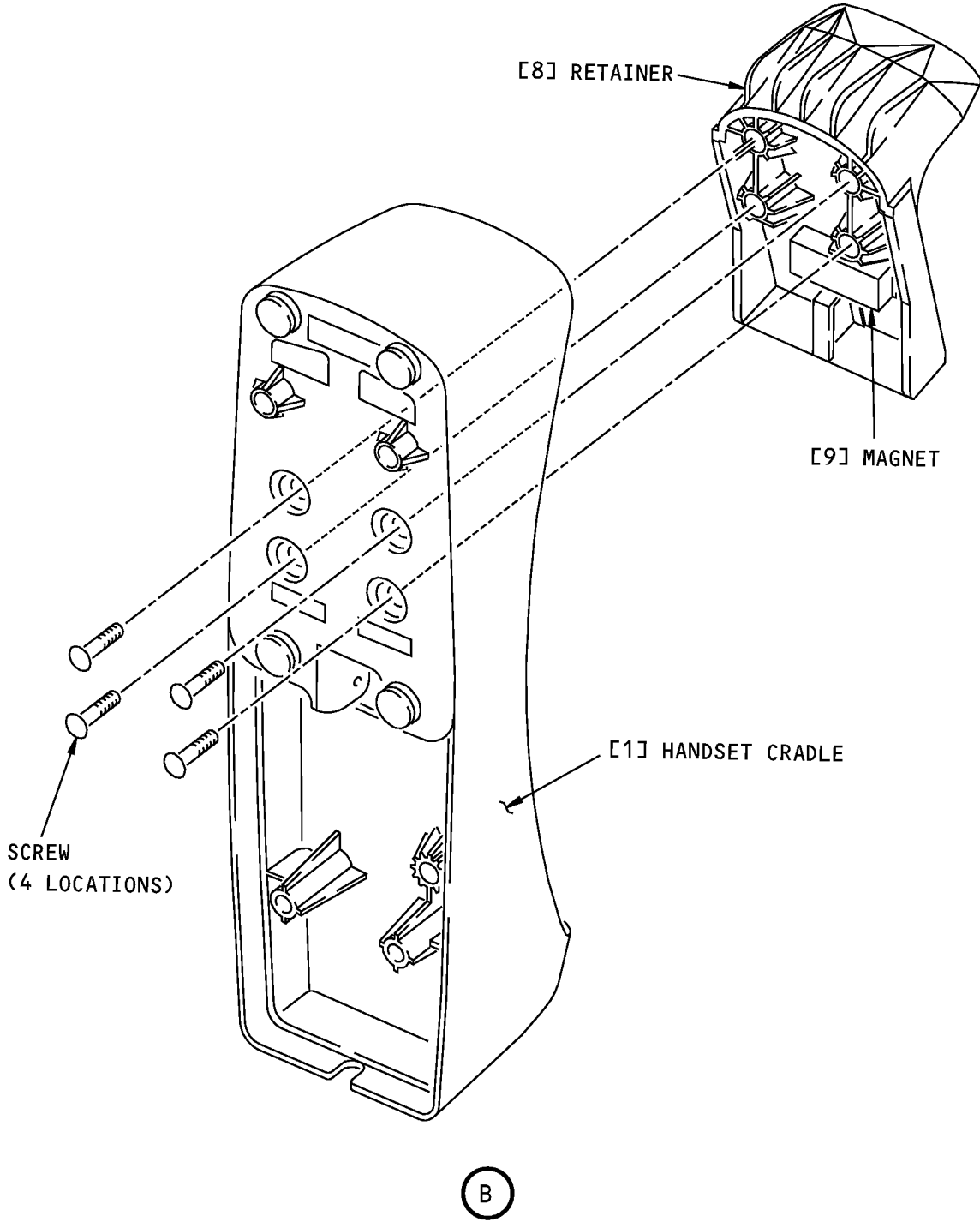
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**Attendant Handset Installation
Figure 401 (Sheet 1 of 2)/23-42-01-990-801**

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**Attendant Handset Installation
Figure 401 (Sheet 2 of 2)/23-42-01-990-801**

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TASK 23-42-01-000-802

3. Attendant Handset Cord Removal

(Figure 401)

A. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

B. Removal Procedure

SUBTASK 23-42-01-020-002

- (1) Remove the handset cord [5]:
 - (a) Disconnect the cord [5] from the handset [4].
 - (b) Remove the screw [6] from the clamp [7].
 - (c) Remove the clamp [7].
 - (d) Pull the handset cord [5] out of the clamp [7].

————— END OF TASK —————

TASK 23-42-01-000-803

4. Attendant Handset Cradle Removal

(Figure 401)

A. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

B. Removal Procedure

SUBTASK 23-42-01-020-003

- (1) Remove the handset cradle [1]:
 - (a) Remove the handset [4] from the handset cradle [1].
 - (b) Remove screws [2] and screws [3] from the handset cradle [1].
 - (c) Remove the handset cradle [1] from the attendant's station.
 - (d) Do these steps if the magnet [9] is loose inside the handset cradle [1].
 - 1) Remove the screws.
 - 2) Remove the retainer [8] and magnet [9].

————— END OF TASK —————

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TASK 23-42-01-400-801

5. Attendant Handset Cradle Installation

(Figure 401)

A. Consumable Materials

Reference	Description	Specification
A00188	Adhesive - Urethane, Two Component	BMS5-105 Type V

B. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

C. Handset Cradle Installation

SUBTASK 23-42-01-420-001

(1) Install the handset cradle [1]:

- (a) Do these steps if you need to attach the magnet [9] to the handset cradle [1]:
 - 1) Use adhesive, A00188 to attach the magnet to the cradle.
 - 2) Put the retainer [8] in its correct position in the handset cradle [1].
 - 3) Install the screws.
- (b) Put the handset cradle [1] in its correct position over the screw holes in the attendant's station.
- (c) Install screws [2] and screws [3] to tighten the handset cradle [1] to the attendant's station.
- (d) Put the handset [4] in the handset cradle [1].

————— END OF TASK —————

TASK 23-42-01-400-802

6. Attendant Handset Cord Installation

(Figure 401)

A. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

B. Installation Procedure

SUBTASK 23-42-01-420-002

(1) Install the handset cord [5]:

- (a) Put the handset cord [5] through the clamp [7].
- (b) Put the clamp [7] in its location over the screw hole in the attendant's station.
- (c) Install the screw [6] to tighten the clamp [7] to the attendant's station.

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(d) Connect the cord [5] to the handset [4].

————— **END OF TASK** —————

TASK 23-42-01-400-803

7. Attendant Handset Installation

(Figure 401)

A. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

B. Installation Procedure

SUBTASK 23-42-01-420-003

- (1) Install the attendant handset [4]:
 - (a) Connect the cord [5] to the handset [4].
 - (b) Put the handset [4] on the handset cradle [1].

————— **END OF TASK** —————

TASK 23-42-01-700-801

8. Attendant Handset Installation Test

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

C. Installation Test

SUBTASK 23-42-01-860-002

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-42-01-710-001

- (2) Do an installation test of the handset:
 - (a) Lift the handset from the handle cradle.
 - (b) Push the button for the attendant on the handset keypad.
 - 1) Make sure you hear a chime on the PA speakers.
 - 2) Make sure the pink attendant call light at the other attendant's station comes on.
 - (c) Make voice communication to the calling attendant's station.
 - 1) Make sure communication can be made.

EFFECTIVITY
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(d) Put the handset in the handset cradle.

SUBTASK 23-42-01-860-001

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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FLIGHT DECK HANDSET - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the flight deck handset
- (2) An installation of the flight deck handset.
- (3) A removal of the flight deck handset cord.
- (4) An installation of the flight deck handset cord.
- (5) A removal of the flight deck handset cradle.
- (6) An installation of the flight deck handset cradle.
- (7) A removal of the flight deck handset cradle magnet.
- (8) An installation of the flight deck handset cradle magnet.

B. The flight deck handset is located on the P8 Aft electronic panel of the flight deck aisle stand.

C. Handset cradles contain a magnet used to open an off-hook switch in the handset while the handset is in the cradle.

- (1) An incorrect location of the cradle magnet will cause an off-hook condition while the handset is in the cradle.

TASK 23-42-02-000-801

2. Flight Deck Handset Removal

Figure 401

A. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

B. Removal Procedure

SUBTASK 23-42-02-020-001

- (1) Remove the handset [1]:
 - (a) Remove the handset [1] from the cradle [3].
 - (b) Disconnect the handset [1] from the cord [2].

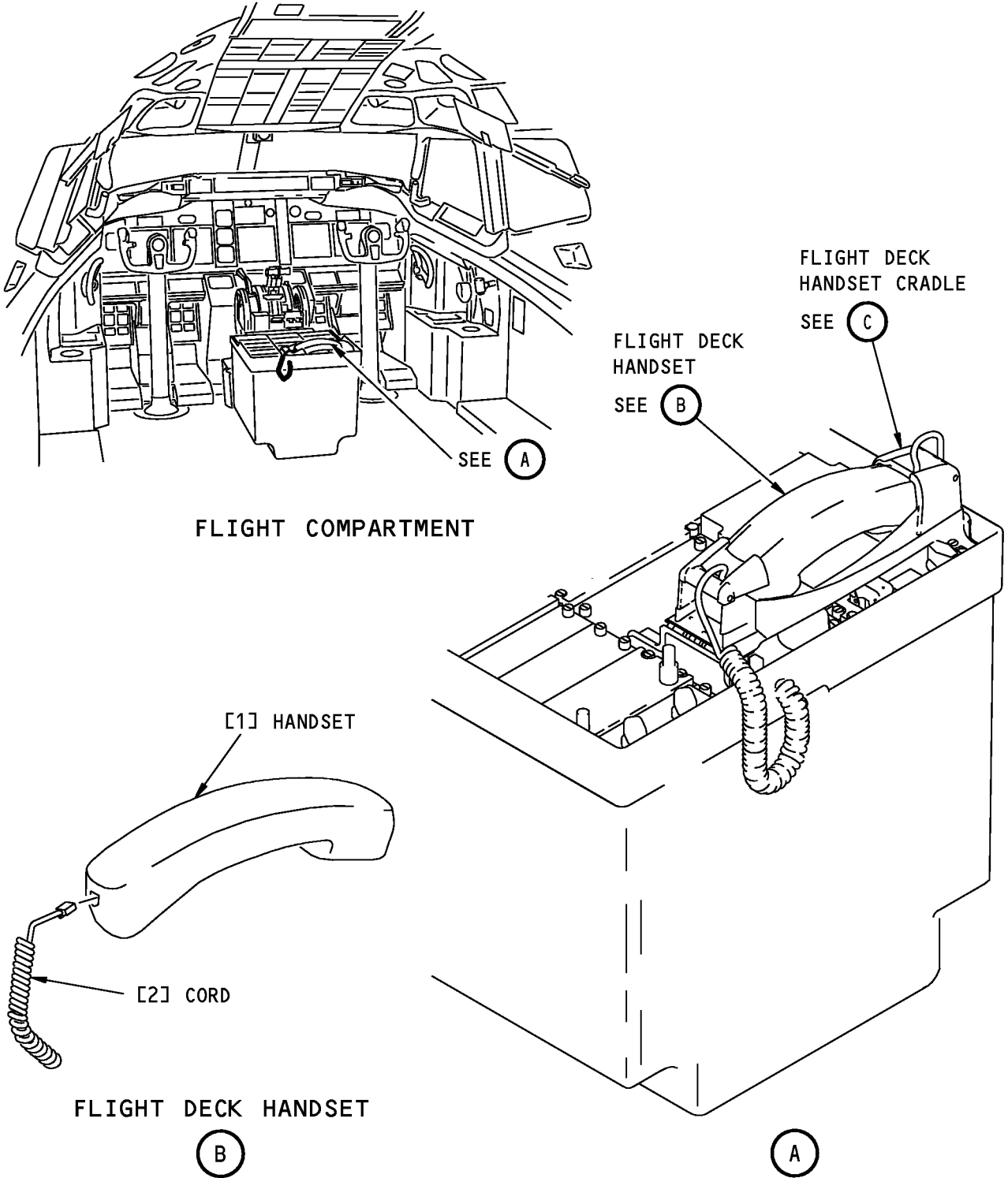
————— **END OF TASK** —————

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Flight Deck Handset/Cradle Installation
Figure 401 (Sheet 1 of 3)/23-42-02-990-801

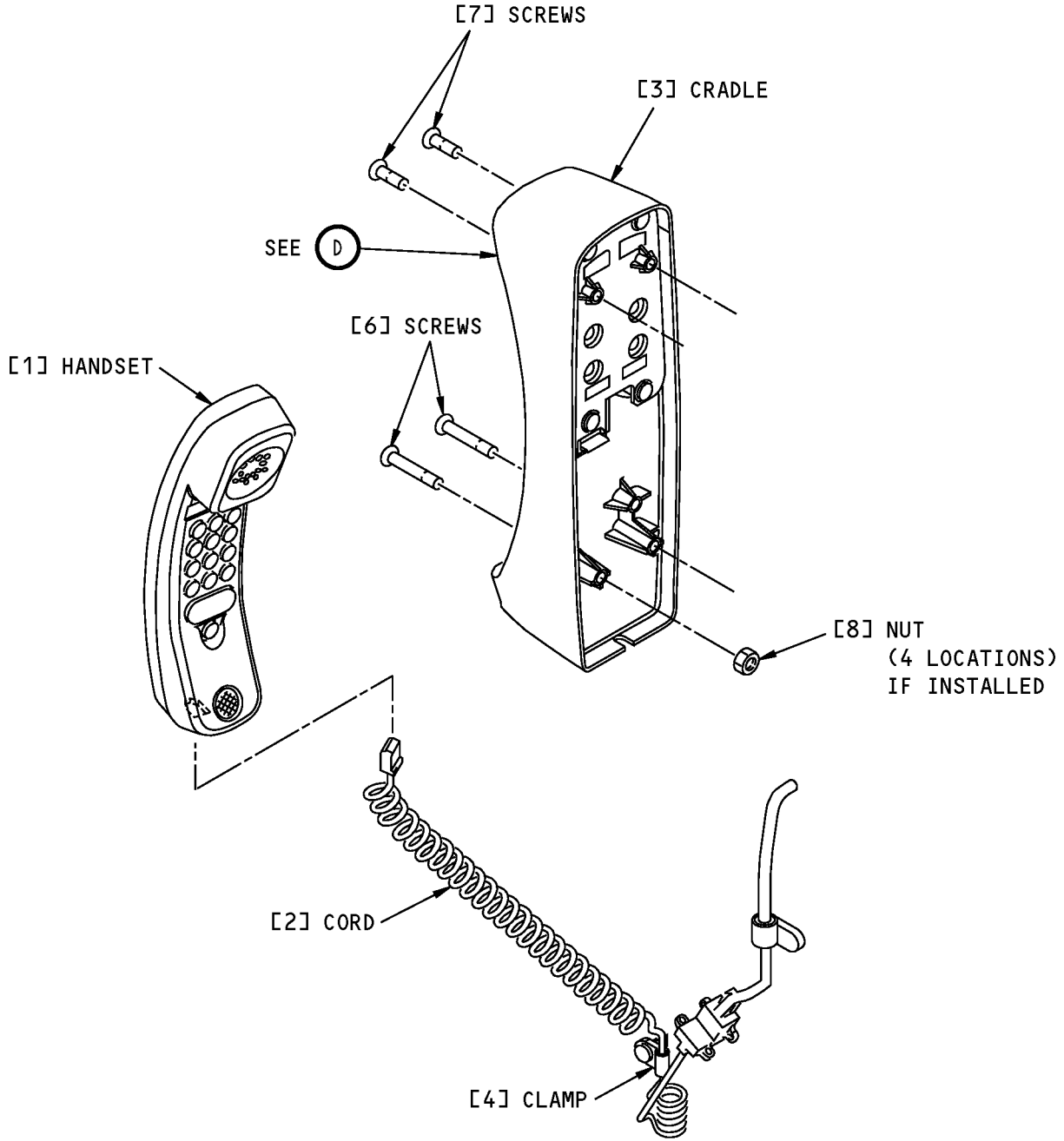
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FLIGHT DECK HANDSET CRADLE

(C)

**Flight Deck Handset/Cradle Installation
Figure 401 (Sheet 2 of 3)/23-42-02-990-801**

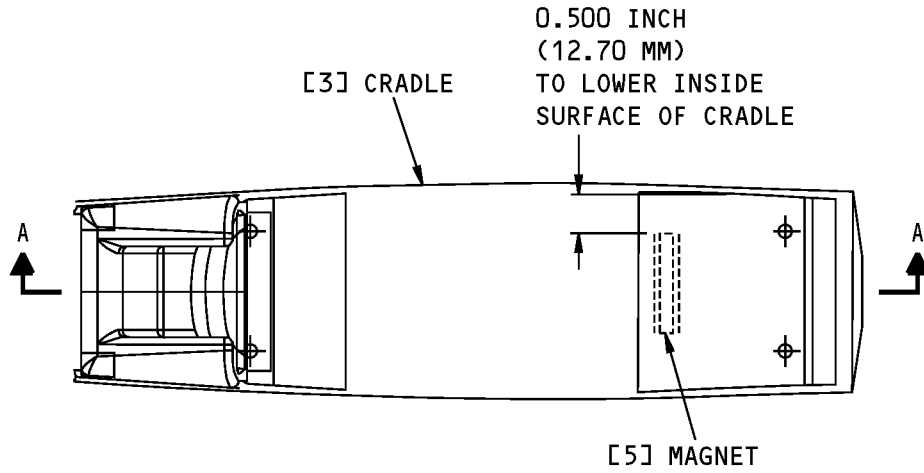
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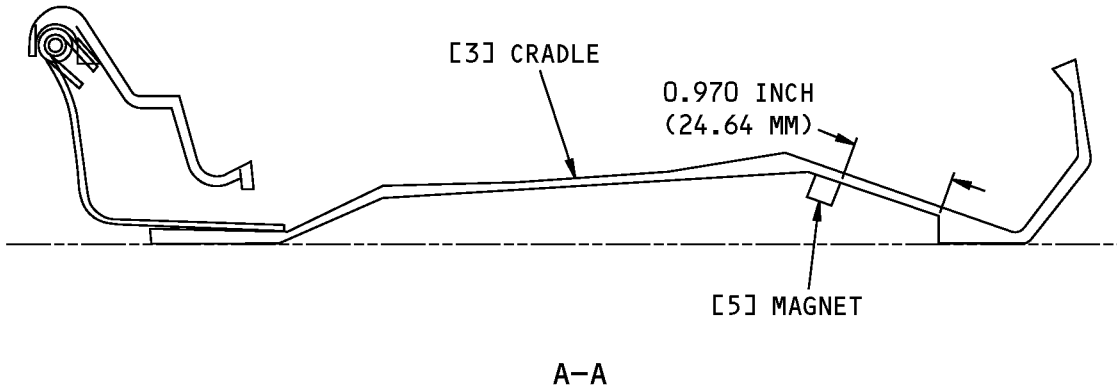
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MAGNET INSTALLATION

(D)



**Flight Deck Handset/Cradle Installation
Figure 401 (Sheet 3 of 3)/23-42-02-990-801**

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TASK 23-42-02-400-801

3. Flight Deck Handset Installation

Figure 401

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Installation Procedure

SUBTASK 23-42-02-420-001

- (1) Install the handset [1]:
 - (a) Connect the cord [2] to the handset [1].
 - (b) Put the handset [1] on its cradle [3].

D. Installation Test

SUBTASK 23-42-02-861-001

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-42-02-700-001

- (2) Do an installation test of the handset [1]:
 - (a) Lift the handset [1] from the handle cradle [3].
 - (b) Push the dial code for PA ALL.

NOTE: The dial code directory is on the back of the handset
 - (c) Push and hold the PTT button on the handset [1].
 - (d) Speak into the handset microphone.
 - 1) Make sure you hear your voice clearly from the cabin speakers.
 - (e) Put the handset [1] in the handset cradle [3].

SUBTASK 23-42-02-862-001

- (3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

TASK 23-42-02-000-802

4. Flight Deck Handset Cord Removal

Figure 401

A. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

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B. Removal Procedure

SUBTASK 23-42-02-020-002

- (1) Do these steps to remove the cord [2] for the handset in the flight deck:
 - (a) Gain access to the clamp [4].
 - (b) Loosen the clamp [4].
 - (c) Pull the handset cord [2] out of the clamp [4].

————— END OF TASK —————

TASK 23-42-02-400-802

5. Flight Deck Handset Cord Installation

Figure 401

A. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

B. Installation Procedure

SUBTASK 23-42-02-420-002

- (1) Do these steps to install the cord [2] for the handset in the flight deck:
 - (a) Put the handset cord [2] through the clamp [4].
 - (b) Tighten the clamp [4].
 - (c) Connect the handset cord [2] to the handset [1].

————— END OF TASK —————

TASK 23-42-02-000-803

6. Flight Deck Handset Cradle Removal

Figure 401

A. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

B. Removal Procedure

SUBTASK 23-42-02-020-003

- (1) Do these steps to remove the cradle [3]:
 - (a) Remove the nuts [8], if applicable.
 - (b) Remove the screws [6] and screws [7] from the handset cradle [3].
 - (c) Remove the handset cradle [3] from its mounting area.

————— END OF TASK —————

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TASK 23-42-02-400-803

7. Flight Deck Handset Cradle Installation

Figure 401

A. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

B. Installation Procedure

SUBTASK 23-42-02-212-001

(1) Make sure that the handset cradle magnet [5] is in the correct location.

- (a) If the magnet [5] is missing or not aligned, do the applicable tasks: Flight Deck Handset Cradle Magnet Removal, TASK 23-42-02-000-804 Flight Deck Handset Cradle Magnet Installation, TASK 23-42-02-400-804.

SUBTASK 23-42-02-420-003

(2) Do these steps to install the cradle [3]:

- (a) Put the handset cradle [3] on its mounting area.
- (b) Install the screws [6] and screws [7] that attach the handset cradle [3] to its mounting area.
- (c) Install the nuts [8] if applicable.

————— END OF TASK —————

TASK 23-42-02-000-804

8. Flight Deck Handset Cradle Magnet Removal

Figure 401

A. General

- (1) This task removes the magnet from the flight deck handset cradle.
- (2) Do this task if the magnet is not in the correct position.

B. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

C. Removal Procedure

SUBTASK 23-42-02-010-001

(1) Do this task: Flight Deck Handset Cradle Removal, TASK 23-42-02-000-803.

SUBTASK 23-42-02-020-004

(2) Carefully remove the magnet [5] from the cradle [3].

NOTE: The magnet [5] is attached to the cradle [3] with adhesive.

————— END OF TASK —————

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TASK 23-42-02-400-804

9. Flight Deck Handset Cradle Magnet Installation

Figure 401

A. General

- (1) This task installs the magnet in the handset cradle.
- (2) Do this task if the magnet is missing or if the magnet is not in the correct position.

B. References

Reference	Title
20-30-91-910-801	Final Cleaning of Composites Prior to Non-structural Bonding (Series 91) (P/B 201)

C. Consumable Materials

Reference	Description	Specification
A50055	Adhesive - Two-Part, RT Cure, Urethane	BAC5010, Type 89 (BMS5-105)
B01011	Solvent - Final Cleaning Of Composites Prior To Non-Structural Bonding (AMM 20-30-91/201) - Series 91	

D. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

E. Installation Procedure

SUBTASK 23-42-02-420-004

- (1) Do these steps to install the magnet [5]:
 - (a) Use Series 91 solvent, B01011 to clean the mating surfaces of the magnet [5] and the cradle [3] (Final Cleaning of Composites Prior to Non-structural Bonding (Series 91), TASK 20-30-91-910-801).
 - (b) Put urethane adhesive, A50055 on the mating surfaces of the magnet [5] and the cradle [3].
 - (c) Put the magnet [5] on the cradle [3].

NOTE: Make sure that you put the magnet [5] in the correct location.

 - (d) Apply more adhesive around the edges of the magnet [5].
 - (e) Let the adhesive dry.

F. Installation test

SUBTASK 23-42-02-700-002

- (1) Make sure that the magnet [5] opens the off-hook switch in the handset [1] while the handset is in the cradle [3].

————— **END OF TASK** —————

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FLIGHT AND GROUND CREW CALL SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has one task:

- (1) An operational test of the flight and ground crew call system.

TASK 23-43-00-710-801

2. Flight and Ground Crew Call System - Operational Test

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Flight and Ground Crew Call System Operational Test

SUBTASK 23-43-00-860-002

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-43-00-710-001

- (2) Do an operational test of the forward attendant to aft attendant call:
 - (a) Do these steps from each forward attendant handset to each aft attendant handset.
 - 1) Push the button for attendant on the handset at the forward attendant's station.
 - a) Make sure you hear a chime on the PA speakers.
 - b) Make sure the aft pink attendant call light comes on.
 - 2) Push the button for reset on the handset at the aft attendant's station.
 - a) Make sure the attendant call light goes off.
 - 3) Speak into the forward attendant's handset.
 - a) Make sure you can hear speech on the aft attendant's handset.
 - 4) Speak into the aft attendant's handset.
 - a) Make sure you can hear speech on the forward attendant's handset.

SUBTASK 23-43-00-710-004

- (3) Do an operational test of the aft attendant to forward attendant call:
 - (a) Do these steps from each aft attendant handset to each forward attendant handset.
 - 1) Push the button for attendant on the handset at the aft attendant's station.
 - a) Make sure you hear a chime on the PA speakers.
 - b) Make sure the pink attendant call light at the forward attendant's station comes on.
 - 2) Push the button for reset on the handset at the forward attendant's station.
 - a) Make sure the attendant call light goes off.

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HAP 015-026, 028-054

SUBTASK 23-43-00-710-007

- (4) Do a cabin interphone reset test:
 - (a) Remove each Attendant's handset from its holder.
 - (b) Press the button for the PA system on each handset.
 - (c) Press and hold the PTT button and speak into each handset. Make sure that speech is heard over the PSU speaker.
 - (d) Release the PTT button.
 - (e) Press the reset button on the Forward Attendant handset.
 - (f) Press and hold the PTT button and speak into the Forward Attendant handset. Make sure speech cannot be heard over the PSU speaker.
 - (g) Release the PTT button.
 - (h) Press the button for the PA system on the Forward Attendant's handset.
 - (i) Press the reset button on each Aft Attendant's handset.
 - (j) Press and hold the PTT button and speak into each Aft Attendant's handset. Make sure speech cannot be heard over the PSU speaker.
 - (k) Release the PTT button.
 - (l) Return each Attendant's handset to its holder.

HAP ALL

SUBTASK 23-43-00-710-002

- (5) Do an operational test of the flight crew to attendant call:
 - (a) Push the ATTEND button on the P5 Overhead Panel.
 - 1) Make sure the pink attendant call lights at the forward and aft attendant's stations come on.
 - 2) Make sure you hear a two-tone chime in the passenger cabin.
 - (b) Push the button for reset on the handset at the forward attendant's station.
 - 1) Make sure the attendant call light goes off.

SUBTASK 23-43-00-710-005

- (6) Do an operational test of the attendant to flight crew call:
 - (a) Do these steps from each forward attendant handset and from each aft attendant handset.
 - 1) Push the button for the pilot on the forward or aft attendant's handset.
 - a) Make sure that you hear a chime in the flight compartment.

HAP 001-013, 015-026, 028-036

- b) Make sure the CALL light on the P5 overhead panel comes on.

HAP 037-054, 101-999

- c) Make sure the CABIN interphone call light on each audio control panel comes on.
- d) Make sure the CABIN microphone selector switch is depressed on the audio control panels.

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- 2) Speak into the attendant's handset.

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- a) Make sure you can hear speech on the pilot's headset.
- 3) Speak into the pilot's boom microphone.
 - a) Make sure you can hear speech on the attendant's handset.

SUBTASK 23-43-00-710-003

- (7) Do an operational test between the flight crew and the ground crew:
 - (a) Push and hold the GRD CALL button on the P5 Overhead Panel in the flight compartment.
 - 1) Make sure you hear the ground crew call horn at the nose wheel well area.
 - (b) Release the GRD CALL button.
 - (c) Push and hold the PILOT CALL button on the external power P19 panel at the nose wheel well area.
 - 1) Make sure you hear a chime in the flight compartment.

HAP 001-013, 015-026, 028-036

- 2) Make sure the CALL light on the P5 overhead panel comes on.

HAP 037-054, 101-999

- 3) Make sure the flight interphone call light on each audio control panel comes on. The flight interphone is labelled Flt, Int, or Flt Int.

HAP ALL

- (d) Release the pilot call BUTTON.

SUBTASK 23-43-00-860-001

- (8) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

GROUND CREW CALL HORN - REMOVAL/INSTALLATION

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the ground crew call horn.
 - (2) An installation of the ground crew call horn.
- C. The ground crew call horn is installed at the nose wheel well area.

TASK 23-43-02-000-801

2. Ground Crew Call Horn Removal

(Figure 401)

A. References

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left

C. Procedure

SUBTASK 23-43-02-760-001

- (1) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	9	C00073	PASSENGER CABIN CREW CALL

SUBTASK 23-43-02-020-001

- (2) Remove the ground crew call horn [1]:

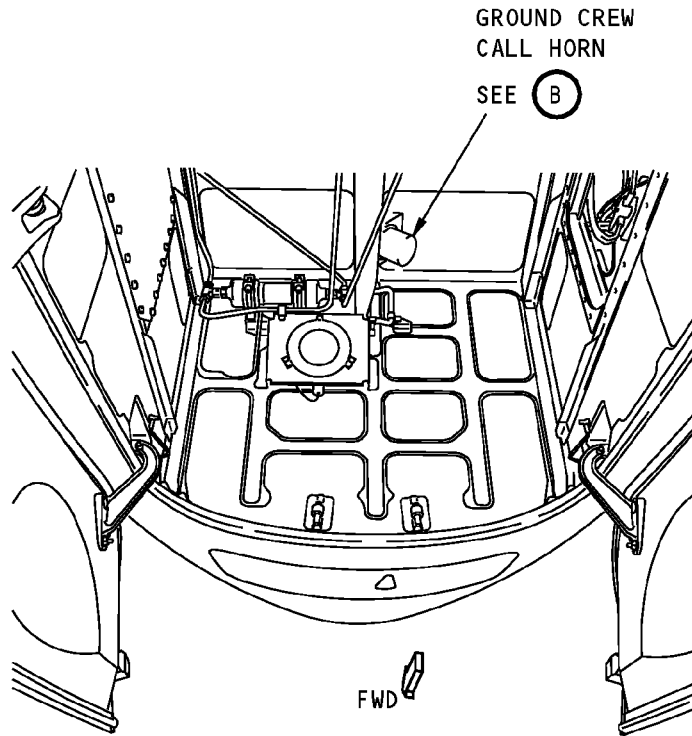
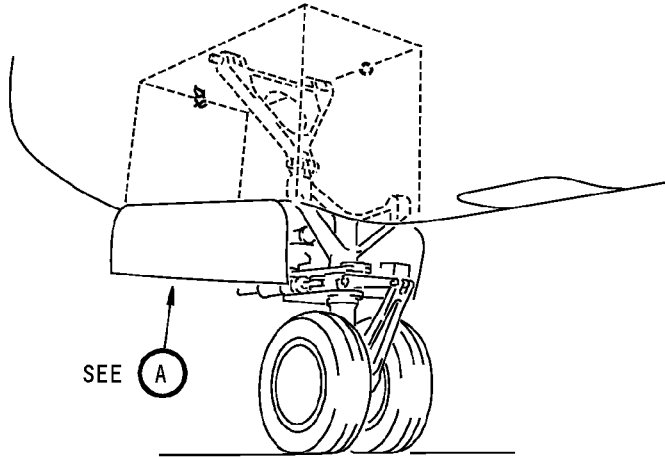
WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR BEFORE YOU REMOVE THE GROUND-CREW CALL HORN. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, (TASK 32-00-01-480-801).
- (b) Remove the screws [3] and washers [2] from the ground crew call horn [1].
- (c) Pull the ground crew call horn [1] out until you can get access to the terminals.
- (d) Remove the two nuts [4] from the ground crew call horn terminals.
- (e) Disconnect the electrical connectors [5] from the ground crew call horn terminals.
- (f) Remove the ground crew call horn [1].

————— **END OF TASK** —————

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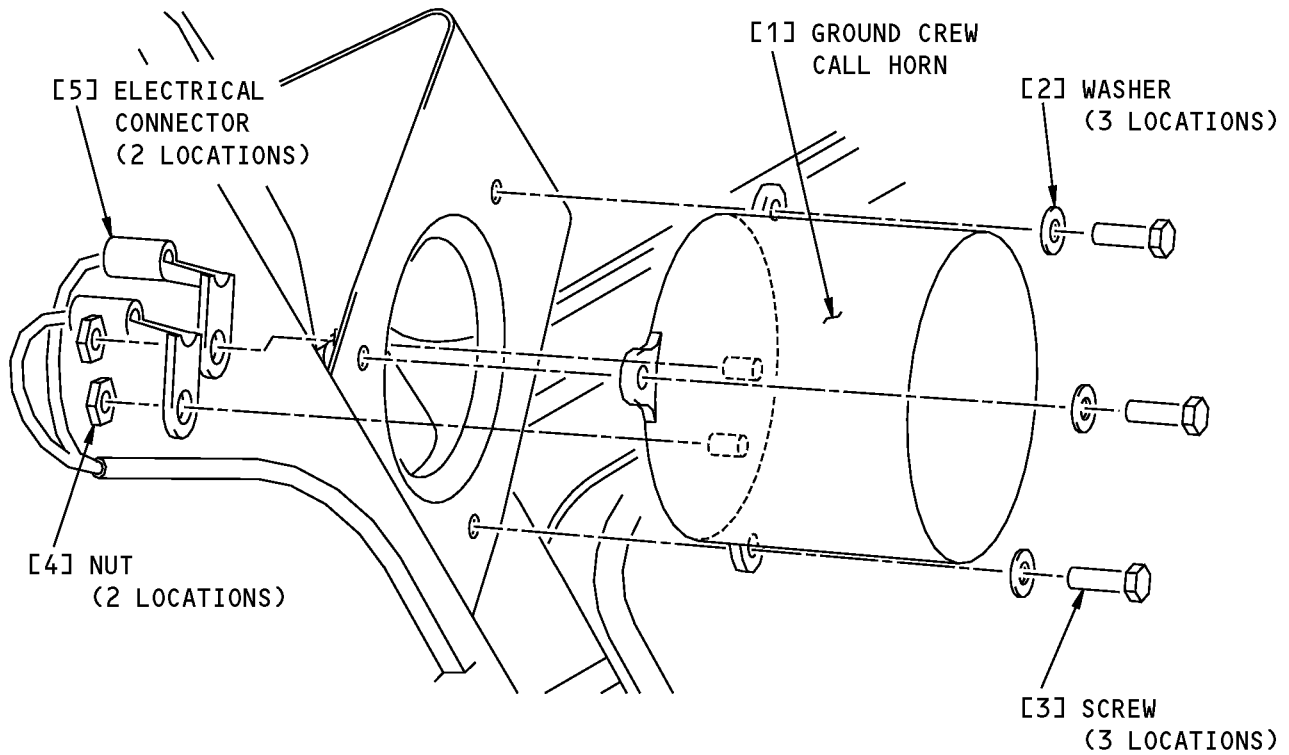
NOSE LANDING GEAR WHEEL WELL

A

**Ground Crew Call Horn Installation
Figure 401 (Sheet 1 of 2)/23-43-02-990-801**

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GROUND CREW CALL HORN

(B)

Ground Crew Call Horn Installation
Figure 401 (Sheet 2 of 2)/23-43-02-990-801

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TASK 23-43-02-420-801

3. Ground Crew Call Horn Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

B. Location Zones

Zone	Area
115	Nose Landing Gear Wheel Well - Left

C. Procedure

SUBTASK 23-43-02-760-003

- (1) Make sure that this circuit breaker is open and has safety tag:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	9	C00073	PASSENGER CABIN CREW CALL

SUBTASK 23-43-02-420-001

- (2) Install the ground crew call horn [1]:

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR BEFORE YOU REMOVE THE GROUND-CREW CALL HORN. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed on the nose and main landing gear. If the downlock pins are not installed, (TASK 32-00-01-480-801).
- (b) Connect the electrical connectors [5] to the ground crew call horn terminals.

NOTE: The ground crew horn is polarity sensitive and will not operate if the positive connector is not connected to the positive terminal above the +28V label.

- (c) Install and tighten the nuts [4] that attach the electrical connectors [5] to the ground crew call horn terminals.
- (d) Put the ground crew call horn [1] in its position over the screw holes in the forward area of the nose wheel well.
- (e) Install the screws [3] and washers [2] that attach the ground crew call horn [1] to the airplane.

SUBTASK 23-43-02-760-002

- (3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	9	C00073	PASSENGER CABIN CREW CALL

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D. Installation Test

SUBTASK 23-43-02-860-002

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-43-02-700-001

(2) Do an installation test of the ground crew call horn:

(a) Push the GND CALL switch momentarily on the P5 overhead panel.

(b) Make sure that the ground crew call horn operates.

SUBTASK 23-43-02-860-001

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

FLIGHT INTERPHONE SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure contains a task for the operational test of the flight interphone system.

NOTE: Two persons are necessary to do this procedure.

TASK 23-51-00-710-801

2. Flight Interphone System - Operational Test

A. General

- (1) This procedure is a scheduled maintenance task.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
35-12-85-910-801	Crew Oxygen Mask Stowage (P/B 201)

C. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Operational Test

SUBTASK 23-51-00-860-011

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP 037-054, 101-999

SUBTASK 23-51-00-860-009

- (2) Make sure the oxygen system for the flight crew is pressurized.

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SUBTASK 23-51-00-860-002

- (3) Make sure the SERVICE INTERPHONE switch on the pilot's overhead panel is in the OFF position.

HAP 001-013, 015-026, 028-036

SUBTASK 23-51-00-860-003

- (4) Set all audio control panels (ACPs) to these conditions:
 - (a) Push all audio monitor switches to off.
 - (b) Push the FLT INT microphone selector switch to on.
 - 1) Make sure its light comes on.
 - (c) Push the volume control for the FLT INT microphone selector switch.
 - 1) Make sure its light comes on.
 - (d) Turn the volume control for the FLT INT microphone selector switch clockwise to the middle position.

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HAP 001-013, 015-026, 028-036 (Continued)

HAP 037-054, 101-999

SUBTASK 23-51-00-860-006

- (5) Set all audio control panels (ACPs) to these conditions:
 - (a) Push all audio monitor switches to off.
 - (b) Push the FLT microphone selector switch to on.
 - 1) Make sure its light comes on.
 - (c) Push the volume control for the FLT microphone selector switch.
 - 1) Make sure its light comes on.
 - (d) Turn the volume control for the FLT microphone selector switch clockwise to the middle position.

HAP ALL

SUBTASK 23-51-00-860-004

- (6) Set the captain's and first officer's ACPs to these conditions:
 - (a) Push the SPKR volume control switch to ON.
 - 1) Make sure its light comes on.
 - (b) Turn the SPKR volume control switch clockwise to the middle position or to the volume level you are comfortable with.

SUBTASK 23-51-00-710-001

- (7) Do the communication test between each of the flight crew stations with the PTT switch on the hand microphone:
 - (a) Push and hold the PTT switch on the hand microphone.
 - (b) Speak into the hand microphone.
 - 1) Make sure you can hear the voice clearly from the other headsets.
 - 2) Make sure the voice level from the flight deck speakers decreases.
 - (c) Release the PTT switch on the hand microphone.

SUBTASK 23-51-00-710-002

- (8) Do the communication test between each of the flight crew stations with the PTT switch on the pilot's control wheel:

HAP 001-013, 015-026, 028-036

- (a) Set the MASK/BOOM switch on the pilots' ACP to the BOOM position.

HAP ALL

- (b) Push and hold the PTT switch on the pilot's control wheel to the INT position.
- (c) Speak into the pilot's boom microphone.
 - 1) Make sure you can hear the voice clearly from the other headsets.
 - 2) Make sure the voice level from the flight deck speakers decreases.
- (d) Release the PTT switch on the pilot's control wheel.

EFFECTIVITY
HAP ALL

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HAP 031-054, 101-999

SUBTASK 23-51-00-710-008

- (9) Do the communication test between each of the flight crew stations with the PTT switch on the pilot's glareshield:
- Push and hold the PTT switch on the pilot's glareshield.
 - Speak into the pilot's boom microphone.
 - Make sure you can hear the voice clearly from the other headsets.
 - Make sure the voice level from the flight deck speakers decreases.
 - Release the PTT switch on the pilot's glareshield panel.

HAP ALL

SUBTASK 23-51-00-710-003

- (10) Do the communication test between each of the flight crew stations with the R/T - I/C switch on the pilot's ACP:
- Push and hold the R/T - I/C switch on the pilot's ACP to the R/T position.
 - Speak into the pilot's boom microphone.
 - Make sure you can hear the voice clearly from the other headsets.
 - Make sure the voice level from the flight deck speakers decreases.
 - Release the R/T - I/C switch on the ACP.
 - Push and hold the R/T - I/C switch on the pilot's ACP to the I/C position.
 - Speak into the pilot's boom microphone.
 - Make sure you can hear the voice clearly from the other headsets.
 - Make sure the voice level from the flight deck speakers decreases.
 - Release the R/T - I/C switch on the pilot's ACP.

SUBTASK 23-51-00-710-004

- (11) Do the communication test between each of the flight crew stations with the oxygen mask:
- Remove the oxygen mask from the stowage box at the pilot's station.
 - If necessary, connect the oxygen mask microphone to the interphone jack at the pilot's station.

HAP 001-013, 015-026, 028-036

- Set the MASK/BOOM switch on the pilots' ACP to the MASK position.

HAP ALL

- Push and hold the PTT switch on the pilot's control wheel to the MIC position.
- Speak into the pilot's oxygen mask microphone.
 - Make sure you can hear the voice clearly from the other headsets.
 - Make sure you can hear the voice at both flight deck speakers.
 - Make sure the voice level from the flight deck speakers does not decrease.
- Release the PTT switch on the pilot's control wheel.
- Push and hold the R/T - I/C switch on the pilot's ACPs to the I/C position.
- Speak into the pilot's oxygen mask microphone.

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- 1) Make sure you can hear the voice clearly from the other headsets.
 - 2) Make sure you can hear the voice at both flight deck speakers.
 - 3) Make sure the voice level from the flight deck speakers does not decrease.
- (i) Release the R/T - I/C switch on the pilot's ACP.

HAP 001-013, 015-026, 028-036

- (j) Set the MASK/BOOM switch on the pilots' ACP to the BOOM position.

HAP ALL

- (k) Do this task to stow the Oxygen Masks: Crew Oxygen Mask Stowage, TASK 35-12-85-910-801

- (l) Close the door of all mask stowage boxes.

SUBTASK 23-51-00-710-005

- (12) Do a test of the flight interphone jack at the external power panel:
- (a) Connect a headset to the FLIGHT INTERPHONE jack on the external power panel.
 - (b) Push and hold the PTT switch on the ground crew microphone.
 - (c) Speak into the ground crew microphone.
 - 1) Make sure you can hear the voice clearly on the flight compartment speakers.
 - (d) Release the PTT switch on the ground crew microphone.
 - (e) Push and hold the PTT switch on the pilot's control wheel to the INT position.
 - (f) Speak into the pilot's boom microphone.
 - 1) Make sure you can hear the voice clearly on the ground crew headphone.
 - (g) Release the PTT switch on the pilot's control wheel.

SUBTASK 23-51-00-760-001

- (13) Do the dual power source test:
- (a) Do the test for the captain's station:
 - 1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	23	C00239	INTERPHONE POWER CAPT DC 2

- 2) Push and hold the PTT switch on the captain's control wheel to the INT position.
- 3) Speak into the captain's boom microphone.
 - a) Make sure you hear the voice clearly on the flight deck speakers.
- 4) Release the PTT switch on the captain's control wheel.

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HAP ALL	

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- 5) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	24	C00240	INTERPHONE POWER CAPT BAT

- 6) Push and hold the PTT switch on the captain's control wheel to the INT position.
- 7) Speak into the captain's boom microphone.
 - a) Make sure you cannot hear the voice on the flight deck speakers.
- 8) Release the PTT switch on the captain's control wheel.
 - a) Make sure that VHF-1 is the only microphone selector button on the captain's ACP that is on.
- 9) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	23	C00239	INTERPHONE POWER CAPT DC 2

HAP 001-013, 015-026, 028-036

- 10) Make sure that the FLT INT microphone selector button on the captain's ACP comes on.

HAP 037-054, 101-999

- 11) Make sure that the FLT microphone selector button on the captain's ACP comes on.

HAP ALL

- (b) Do the test for the first officer's station:

- 1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2

- 2) Push and hold the PTT switch on the first officer's control wheel to the INT position.
- 3) Speak into the first officer's boom microphone.
 - a) Make sure you hear the voice clearly on the flight deck speakers.
- 4) Release the PTT switch on the first officer's control wheel.
- 5) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	22	C00561	INTERPHONE POWER F/O BAT

- 6) Push and hold the PTT switch on the first officer's control wheel to the INT position.
- 7) Speak into the first officer's boom microphone.
 - a) Make sure you cannot hear the voice on the flight deck speakers.
- 8) Release the PTT switch on the first officer's control wheel.
 - a) Make sure that VHF-2 is the only microphone selector button on the first officer's ACP that is on.

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9) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2

HAP 001-013, 015-026, 028-036

10) Make sure that the FLT INT microphone selector button on the first officer's ACP comes on.

HAP 037-054, 101-999

11) Make sure that the FLT microphone selector button on the first officer's ACP comes on.

HAP ALL

SUBTASK 23-51-00-710-011

(14) Do the test for the ALT/NORM switch:

- (a) Put the ALT/NORM switch on the captain's and first observer's ACP to the ALT position.
 - 1) Make sure that the VHF-1 microphone selector button on the captain's and first observer's ACP comes on.
- (b) Put the ALT/NORM switch on the captain's and first observer's ACP to the NORM position.

HAP 001-013, 015-026, 028-036

1) Make sure that the FLT INT microphone selector button on the captain's and first observer's ACP comes on.

HAP 037-054, 101-999

2) Make sure that the FLT microphone selector button on the captain's and first observer's ACP comes on.

HAP ALL

- (c) Put the ALT/NORM switch on the first officer's ACP to the ALT position.
 - 1) Make sure that the VHF-2 microphone selector button on the first officer's ACP comes on.
- (d) Put the ALT/NORM switch on the first officer's ACP to the NORM position.

HAP 001-013, 015-026, 028-036

1) Make sure that the FLT INT microphone selector button on the first officer's ACP comes on.

HAP 037-054, 101-999

2) Make sure that the FLT microphone selector button on the first officer's ACP comes on.

HAP ALL

E. Put the Airplane Back to Its Usual Condition

SUBTASK 23-51-00-860-005

- (1) Put all ACPs back to their usual condition:
 - (a) Push all microphone selector switches to off.
 - (b) Push the volume control switch for all microphone selector switches to off.

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(c) Push the SPKR volume control switch to off.

SUBTASK 23-51-00-760-002

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00165	COMMUNICATIONS VHF 1

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C00166	COMMUNICATIONS VHF 2

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	22	C00561	INTERPHONE POWER F/O BAT
C	24	C00240	INTERPHONE POWER CAPT BAT

SUBTASK 23-51-00-860-010

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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REMOTE ELECTRONICS UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the remote electronics unit (REU).
- (2) An installation of the REU.

B. The REU is on the E4-1 shelf in the electrical/electronic compartment.

TASK 23-51-01-000-801

2. Remote Electronics Unit (REU) Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Removal Procedure

SUBTASK 23-51-01-010-001

- (1) To get access to the main equipment center, do this step:

Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 23-51-01-860-001

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

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SUBTASK 23-51-01-860-005

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE REU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE REU.

- (3) Before you touch the REU, do the procedure for devices that are sensitive to electrostatic discharge. To do this procedure, do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-51-01-020-001

- (4) Remove the REU [1] from the shelf. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

————— **END OF TASK** —————

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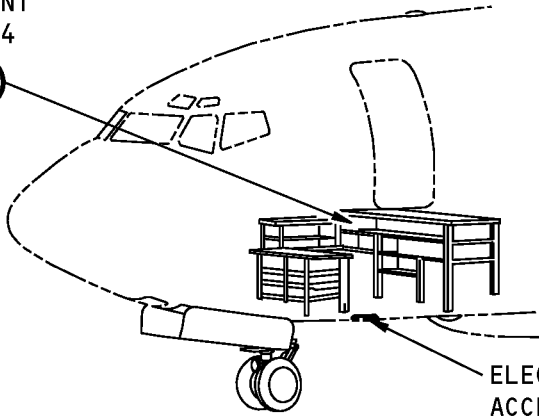
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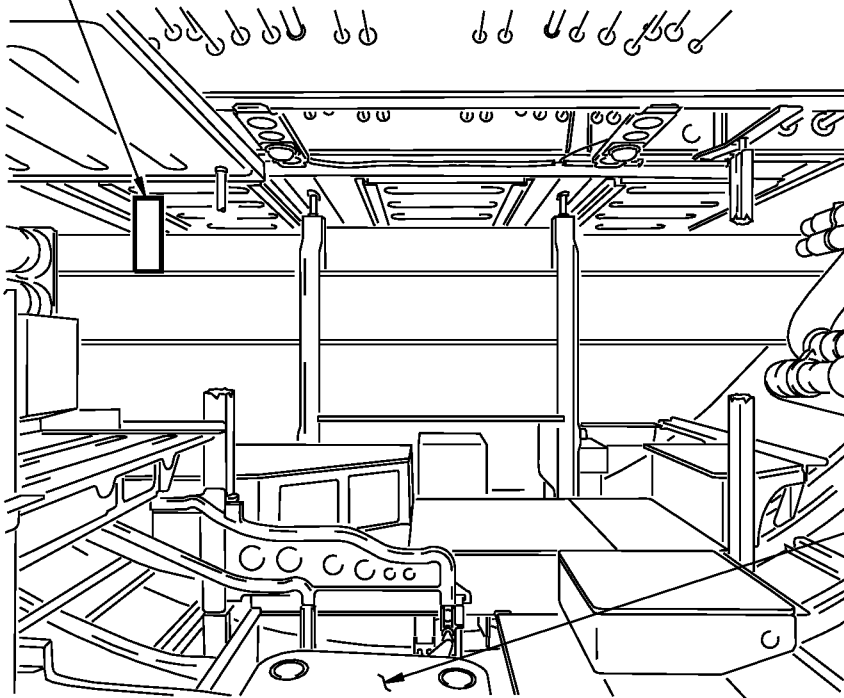
ELECTRONIC
EQUIPMENT
RACK, E4

SEE



ELECTRONIC EQUIPMENT
ACCESS DOOR, 117A

[1] REMOTE
ELECTRONICS
UNIT
(E4-1)



ELECTRONIC
EQUIPMENT
ACCESS DOOR, 117A



ELECTRONIC EQUIPMENT RACKS E2, E3 AND E4



Remote Electronics Unit Installation
Figure 401/23-51-01-990-801

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TASK 23-51-01-000-802

3. Remote Electronics Unit (REU) Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
23-51-00-710-801	Flight Interphone System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	REU	23-51-01-01-005	HAP 001-011
		23-51-01-02-005	HAP 023-026, 028-030
		23-51-01-03-005	HAP 031-054, 101-999
		23-51-01-04-005	HAP 012, 013, 015-022

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Installation Procedure

SUBTASK 23-51-01-860-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

SUBTASK 23-51-01-860-006

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE REU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE REU.

- (2) Before you touch the REU, do the procedure for the devices that are sensitive to electrostatic discharge. To do this procedure, do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

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SUBTASK 23-51-01-420-001

- (3) Install the REU [1] on the shelf. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

I HAP 023-026, 028-054, 101-999

SUBTASK 23-51-01-200-001

- (4) Check the position of the AURAL WARN MUTE switch on the front panel of the REU and make sure it is in the vertical position.

NOTE: The standard position of the AW mute switch on all REU's is in the vertical position.

HAP ALL

SUBTASK 23-51-01-860-003

- (5) Close these circuit breakers:

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

F. REU Installation Test

SUBTASK 23-51-01-600-001

- (1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-51-01-710-001

- (2) Do this task: Flight Interphone System - Operational Test, TASK 23-51-00-710-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 23-51-01-860-007

- (1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

SUBTASK 23-51-01-860-008

- (2) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

AUDIO CONTROL PANEL - REMOVAL/INSTALLATION

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the audio control panel (ACP).
 - (2) An installation of the ACP.

TASK 23-51-02-000-801

2. Audio Control Panel Removal

(Figure 401)

A. Location Zones

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

B. Removal Procedure

SUBTASK 23-51-02-860-001

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7
F	14	C01180	INDICATOR MASTER DIM SECT 8

SUBTASK 23-51-02-020-001

- (2) Remove the Audio Control Panel (ACP) [1]:
 - (a) Loosen the four quarter-turn fasteners [2] on the front panel of the ACP [1].
 - (b) Lift the ACP [1] to get access to the electrical connector [3].
 - (c) Disconnect the electrical connector [3] from the rear of the ACP [1].
 - (d) Remove the ACP panel [1].

————— **END OF TASK** —————

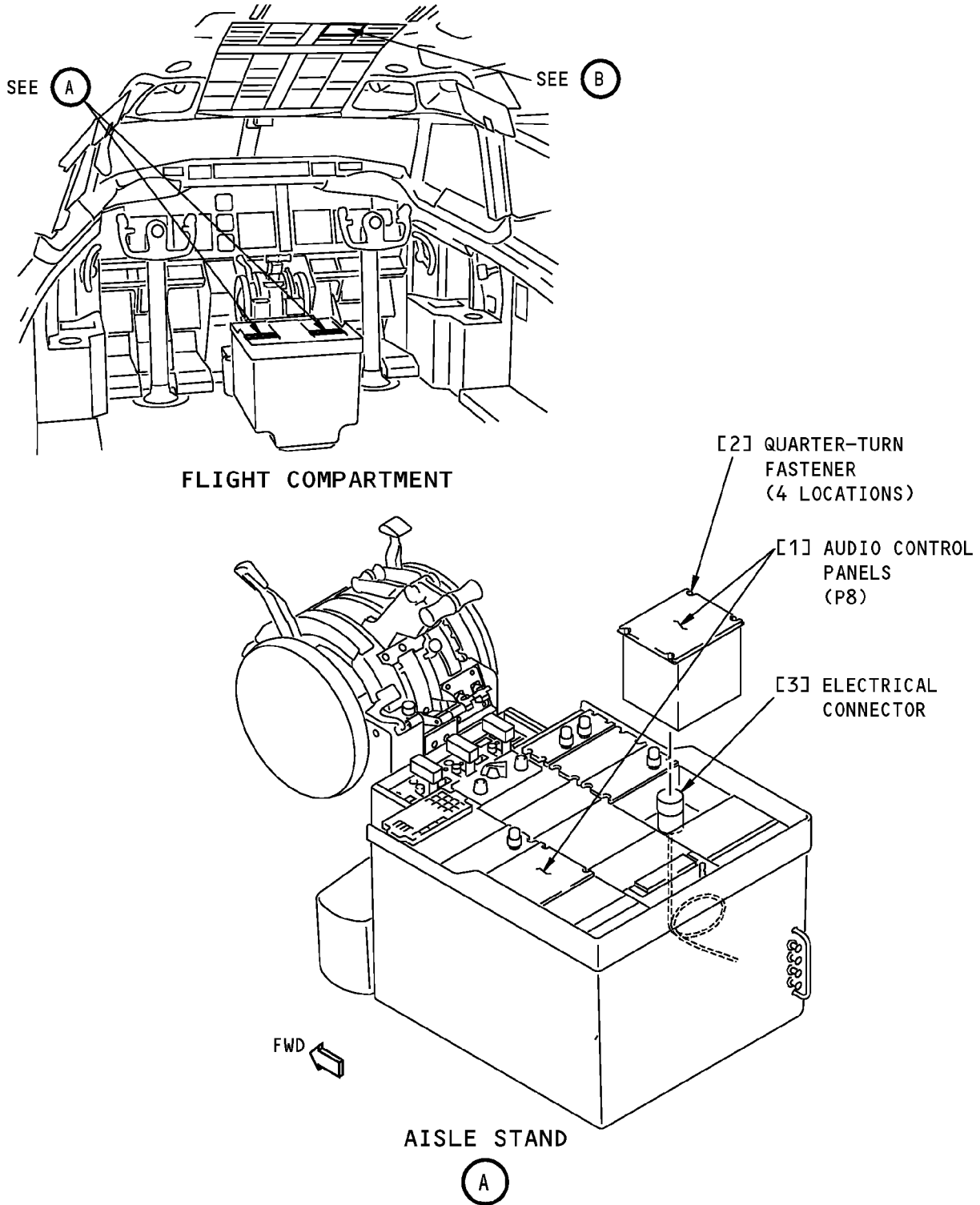
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**Audio Control Panel Installation
Figure 401 (Sheet 1 of 2)/23-51-02-990-801**

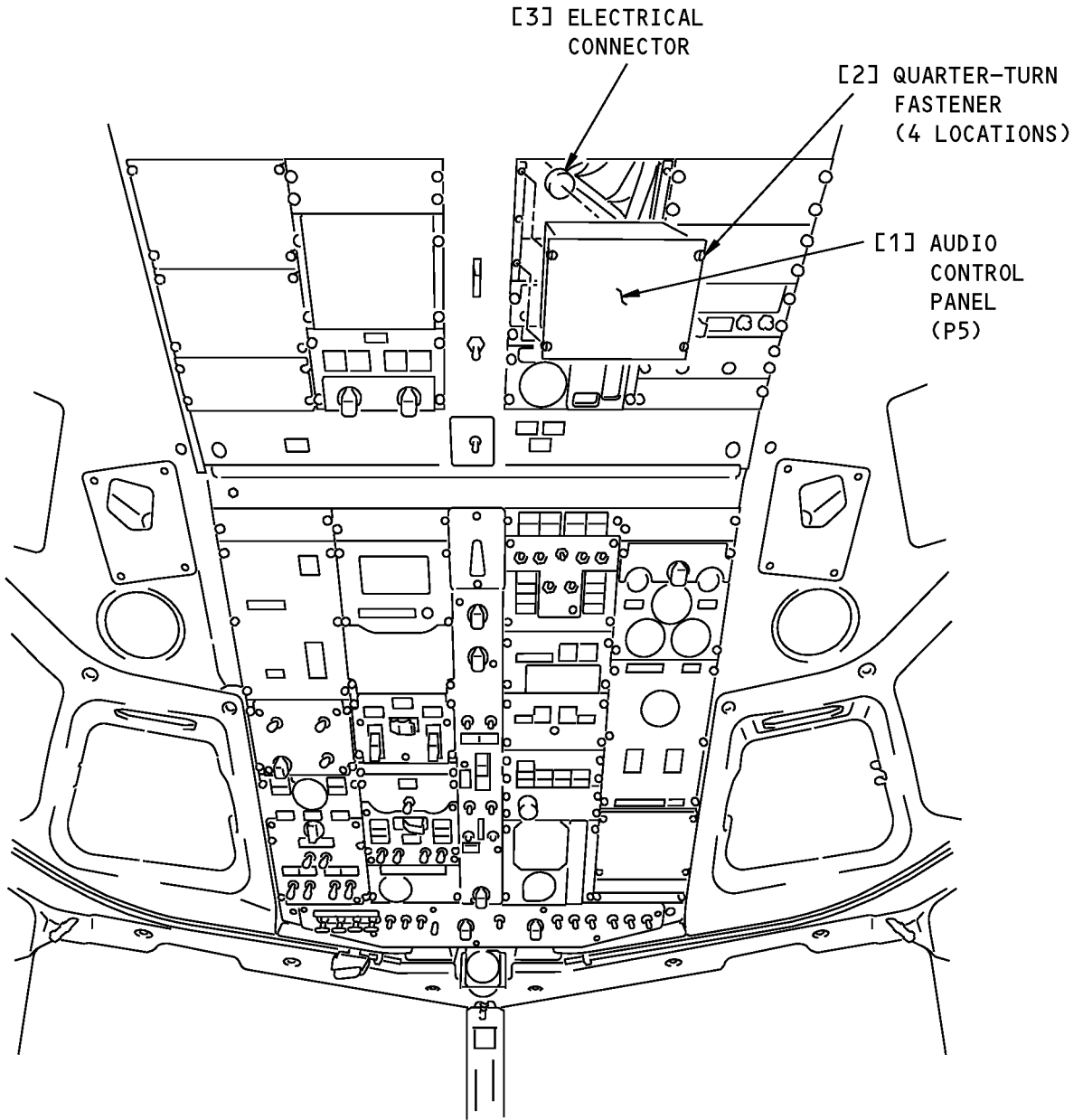
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**OVERHEAD PANEL
(VIEW IN THE FORWARD DIRECTION)**

B

**Audio Control Panel Installation
Figure 401 (Sheet 2 of 2)/23-51-02-990-801**

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TASK 23-51-02-400-801

3. Audio Control Panel Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Installation Procedure

SUBTASK 23-51-02-860-004

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7
F	14	C01180	INDICATOR MASTER DIM SECT 8

SUBTASK 23-51-02-420-001

- (2) Install the Audio Control Panel (ACP) [1]:
 - (a) Connect the electrical connector [3] to the rear of the ACP [1].
 - (b) Put the ACP panel [1] in its position.
 - (c) Tighten the four quarter-turn fasteners [2] on the front panel of the ACP [1].

SUBTASK 23-51-02-860-007

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN

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<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C00317	INDICATOR MASTER DIM SECT 5
F	13	C01179	INDICATOR MASTER DIM SECT 7
F	14	C01180	INDICATOR MASTER DIM SECT 8

D. Installation Test

SUBTASK 23-51-02-860-010

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-51-02-710-001

(2) Do an operational test of the ACP:

HAP 001-013, 015-026, 028-036

(a) Push the FLT INT microphone selector switch on the ACP.

HAP 037-054, 101-999

(b) Push the FLT microphone selector switch on the ACP.

HAP ALL

(c) Push and hold the PTT switch on the ACP to the R/T position.

(d) Speak into the pilot's boom microphone.

1) Make sure the voice can be heard from the other pilot's headsets.

(e) Push the PA microphone selector switch on the ACP.

(f) Push and hold the PTT switch on the ACP to the I/C position.

(g) Speak into the pilot's boom microphone.

1) Make sure the voice can be heard from the other pilot's headset.

2) Make sure the voice cannot be heard on the PA.

(h) Release the PTT switch.

(i) Push any other PA microphone selector switch on the ACP.

1) Make sure its light goes off.

SUBTASK 23-51-02-860-011

(3) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY
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FLIGHT INTERPHONE SPEAKER - REMOVAL/INSTALLATION

1. General

A. Procedure Information:

- (1) This procedure has these tasks:
 - (a) A removal of the flight interphone speaker.
 - (b) An installation of the flight interphone speaker.
- (2) These tasks are the same for the captain's and first officer's speaker.
- (3) The flight interphone speaker is in the forward ceiling panel in the flight compartment.

TASK 23-51-03-000-802

2. Flight Interphone Speaker Removal

(Figure 401)

A. References

Reference	Title
25-11-21-000-801	Flight Compartment Forward Ceiling Panel Removal (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 23-51-03-760-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

SUBTASK 23-51-03-010-001

- (2) Do this task: Flight Compartment Forward Ceiling Panel Removal, TASK 25-11-21-000-801.

SUBTASK 23-51-03-000-002

- (3) Remove the speaker [1]:
 - (a) Disconnect the electrical connector [2] from the speaker [1].
 - (b) Remove the screws [3] from the speaker [1].
 - (c) Remove the speaker [1].

————— **END OF TASK** —————

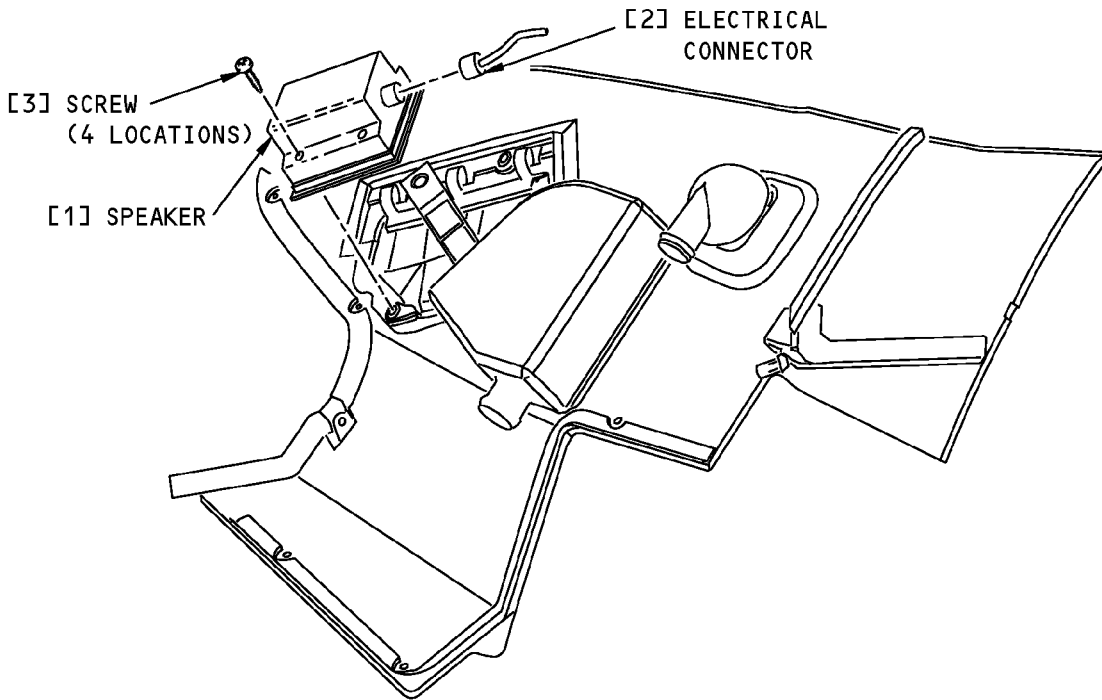
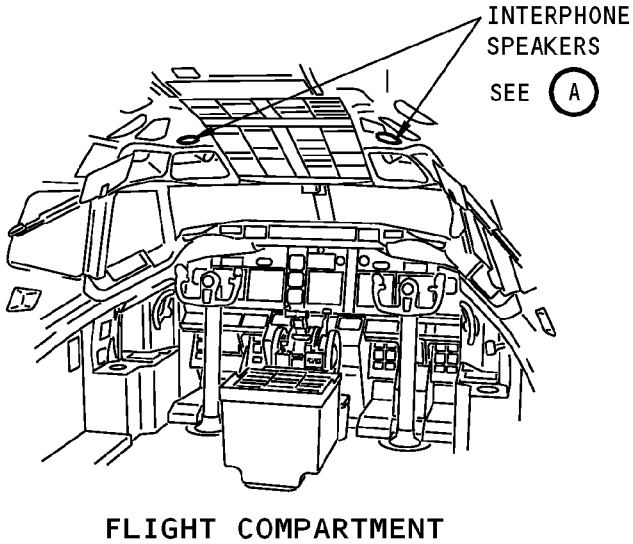
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AIRCRAFT MAINTENANCE MANUAL**



**CAPTAIN'S FLIGHT INTERPHONE SPEAKER
(FIRST OFFICER'S IS EQUIVALENT)**

(A)

**Captain's Flight Interphone Speaker Installation
Figure 401/23-51-03-990-804**

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TASK 23-51-03-000-804

3. Flight Interphone Speaker Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
25-11-21-400-801	Flight Compartment Ceiling Panel Installation (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 23-51-03-420-002

(1) Install the speaker [1]:

- (a) Put the speaker [1] in its correct position in the forward overhead panel.
- (b) Install the screws [3] to the speaker [1].
- (c) Connect the electrical connector [2] to the speaker [1].

SUBTASK 23-51-03-410-001

(2) Do this task: Flight Compartment Ceiling Panel Installation, TASK 25-11-21-400-801.

SUBTASK 23-51-03-860-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

D. Installation Test

SUBTASK 23-51-03-860-010

(1) If it is necessary, do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-51-03-700-002

(2) Do this test of the flight interphone speaker:

- (a) Make sure the SERVICE INTERPHONE switch on the P5 overhead panel is in the OFF position.
- (b) Set all audio control panels (ACPs) to these conditions:
 - 1) Push all audio monitor switches to off.

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HAP 001-013, 015-026, 028-036

- 2) Push the FLT INT microphone selector switch to on.
 - a) Make sure its light comes on.

HAP 037-054, 101-999

- 3) Push the FLT microphone selector switch to on.
 - a) Make sure its light comes on.

HAP 001-013, 015-026, 028-036

- 4) Push the volume control for the FLT INT microphone selector switch.
 - a) Make sure its light comes on.

HAP 037-054, 101-999

- 5) Push the volume control for the FLT microphone selector switch.
 - a) Make sure its light comes on.

HAP 001-013, 015-026, 028-036

- 6) Turn the volume control for the FLT INT microphone selector switch to the middle position.

HAP 037-054, 101-999

- 7) Turn the volume control for the FLT microphone selector switch to the middle position.

HAP ALL

- (c) Set the captain's ACP to these conditions:
 - 1) Push the SPKR volume control switch to ON.
 - a) Make sure its light comes on.
 - 2) Turn the SPKR volume control switch to the middle position or to the volume level you are comfortable with.
- (d) Connect a headset to the first officer's boom/mic jack.
- (e) Push and hold the PTT switch on the first officer's control wheel to the MIC position.
- (f) Speak into the first officer's boom microphone.
 - 1) Make sure you can hear the voice clearly on the captain's flight interphone speaker.

SUBTASK 23-51-03-700-003

- (3) Do this test of the first officer's flight interphone speaker:
 - (a) Make sure the SERVICE INTERPHONE switch on the P5 overhead panel is in the OFF position.
 - (b) Set all audio control panels (ACPs) to these conditions:
 - 1) Push all audio monitor switches to off.

HAP 001-013, 015-026, 028-036

- 2) Push the FLT INT microphone selector switch to on.
 - a) Make sure its light comes on.

HAP 037-054, 101-999

- 3) Push the FLT microphone selector switch to on.

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HAP 037-054, 101-999 (Continued)

- a) Make sure its light comes on.

HAP 001-013, 015-026, 028-036

- 4) Push the volume control for the FLT INT microphone selector switch.
 - a) Make sure its light comes on.

HAP 037-054, 101-999

- 5) Push the volume control for the FLT microphone selector switch.
 - a) Make sure its light comes on.

HAP 001-013, 015-026, 028-036

- 6) Turn the volume control for the FLT INT microphone selector switch to the middle position.

HAP 037-054, 101-999

- 7) Turn the volume control for the FLT microphone selector switch to the middle position.

HAP ALL

- 8) Push the SPKR volume control switch to ON.
 - a) Make sure its light comes on.
- 9) Turn the SPKR volume control switch to the middle position or to the volume level you are comfortable with.
- (c) Connect a headset to the captain's boom/mic jack.
- (d) Push and hold the PTT switch on the captain's control wheel to the MIC position.
- (e) Speak into the captain's boom microphone.
 - 1) Make sure you can hear the voice clearly from the first officer's flight interphone speaker.

SUBTASK 23-51-03-860-011

- (4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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AIRCRAFT MAINTENANCE MANUAL

CONTROL WHEEL PTT SWITCH - REMOVAL/INSTALLATION

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has three tasks:
 - (1) A removal of the push-to-talk (PTT) switch on the control wheel.
 - (2) An installation of the PTT switch on the control wheel.
 - (a) The installation task includes an operational test of the PTT switch.

HAP 012, 013, 015-026, 028-054, 101-999

- (3) An adjustment of the bullet catch on the PTT switch.
 - (a) Use this procedure when the PTT switch will not stay in the INT locked position.
 - (b) You may need to replace the switch mount if the PTT switch will not stay in the locked position.

HAP ALL

TASK 23-51-04-000-801

2. Control Wheel PTT Switch Removal

(Figure 401 or Figure 402)

A. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

B. Procedure

SUBTASK 23-51-04-860-001

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

SUBTASK 23-51-04-020-001

- (2) Remove the push-to-talk (PTT) switch on the control wheel:
 - (a) Remove the two mounting screws [2] from the control wheel.
 - (b) Carefully remove the PTT switch assembly [1] to get access to the wires.
 - (c) Disconnect the terminal lugs from the switch to be changed [3] or [6].
 - 1) Identify each wire for installation.
 - 2) Make sure the disconnected wire ends do not touch.
 - (d) Remove the locking screw [5] from the clamp [4].

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- (e) Turn the PTT switch in a counterclockwise direction to remove it from the clamp [4].
- (f) Remove the PTT switch from the clamp [4].

————— **END OF TASK** —————

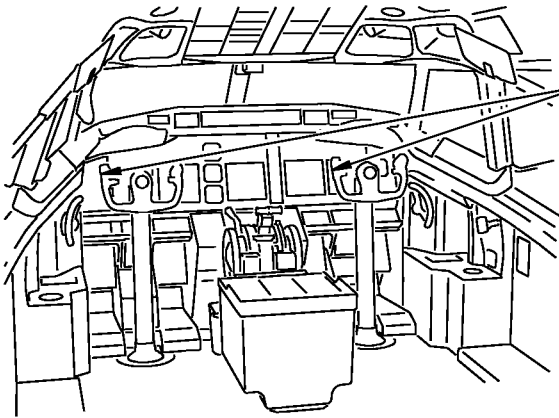
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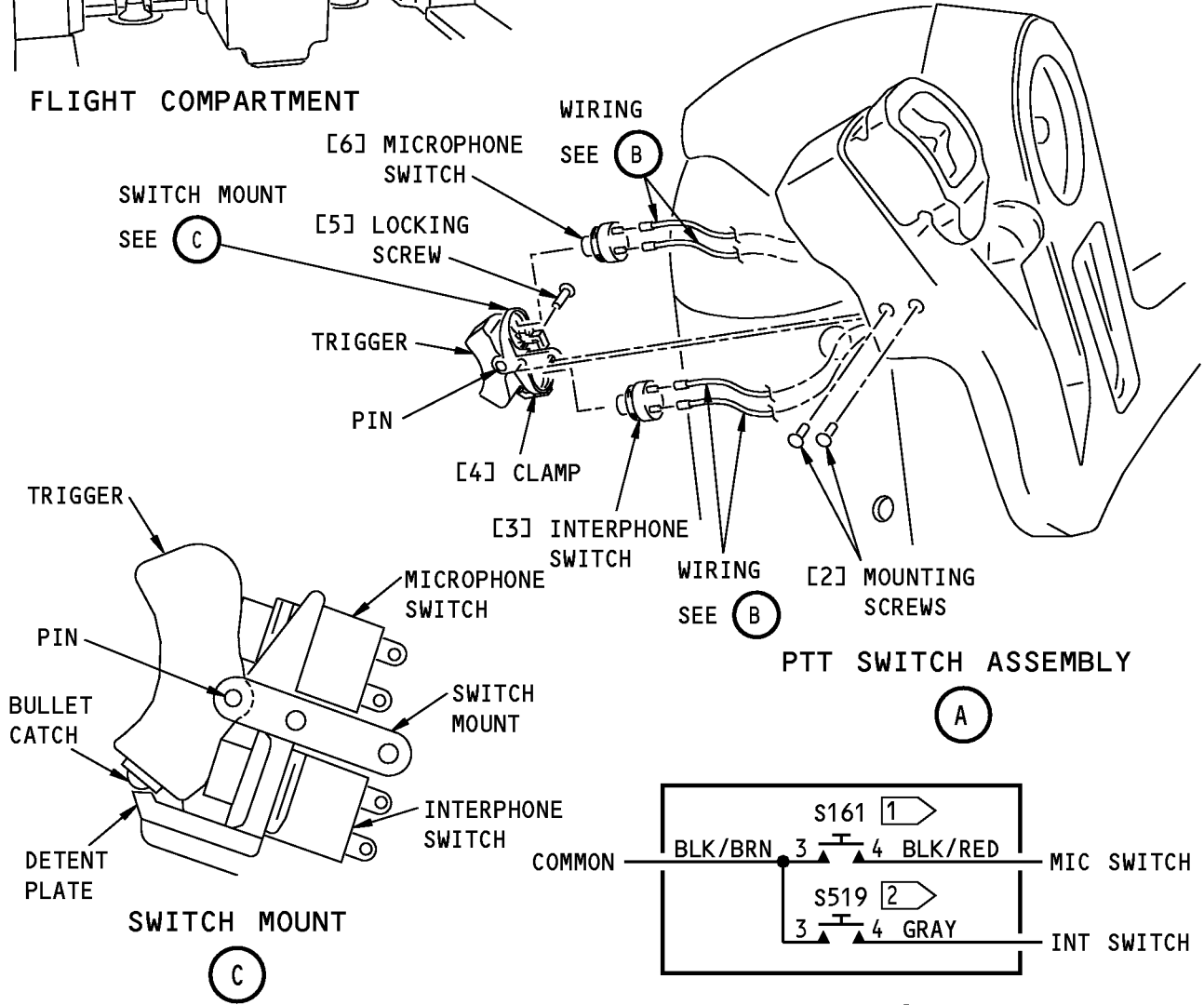
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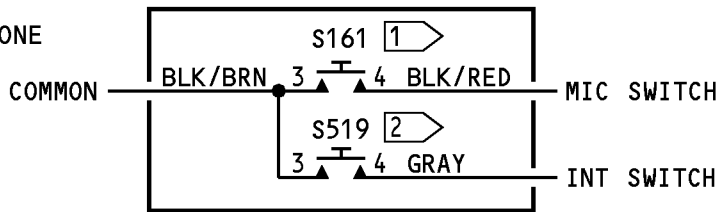
[1] PTT SWITCH ASSEMBLIES
SEE (A)

FLIGHT COMPARTMENT



1 CAPTAIN'S IS SHOWN,
FIRST OFFICER'S IS S214

2 CAPTAIN'S IS SHOWN,
FIRST OFFICER'S IS S520



Control Wheel PTT Switch Installation
Figure 401/23-51-04-990-801

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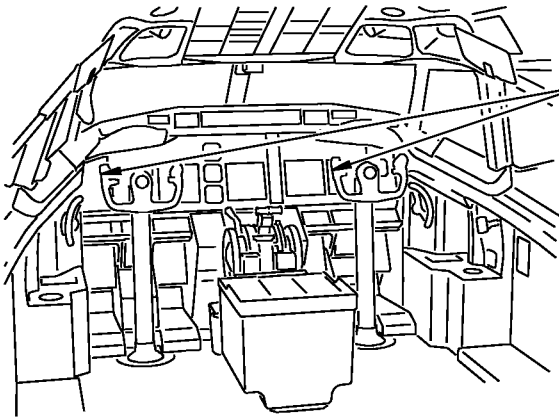
EFFECTIVITY
HAP 012, 013, 015-026, 028-054, 101-999

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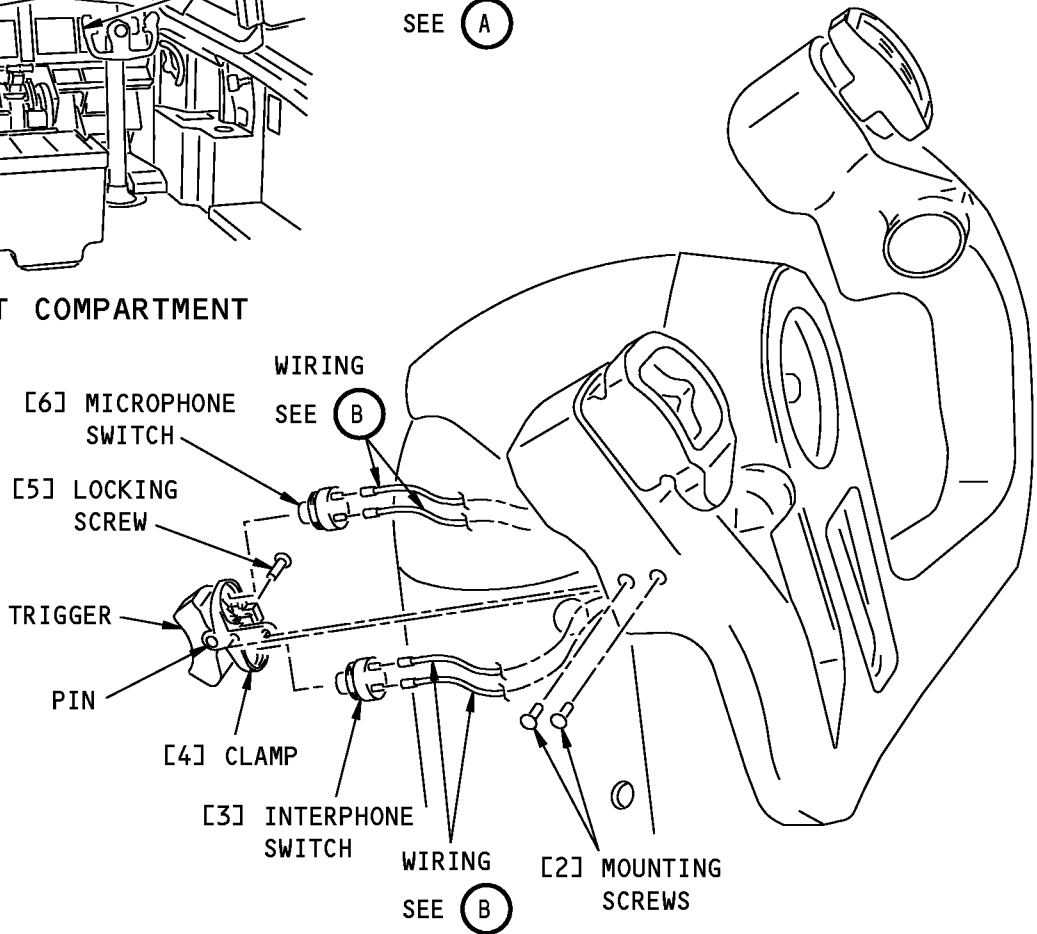
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FLIGHT COMPARTMENT

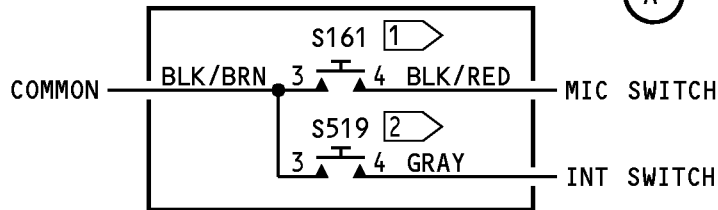
[1] PTT SWITCH ASSEMBLIES

SEE (A)



PTT SWITCH ASSEMBLY

(A)



WIRING

(B)

1 CAPTAIN'S IS SHOWN,
FIRST OFFICER'S IS S214

2 CAPTAIN'S IS SHOWN,
FIRST OFFICER'S IS S520

1482977 S0000270348_V1

Control Wheel PTT SWitch Installation
Figure 402/23-51-04-990-802

EFFECTIVITY
HAP 001-011

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TASK 23-51-04-400-801

3. Control Wheel PTT Switch Installation

(Figure 401 or Figure 402)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 23-51-04-860-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

HAP 012, 013, 015-026, 028-054, 101-999

SUBTASK 23-51-04-420-001

- (2) Install the push-to-talk (PTT) switch on the control wheel:

- (a) Install the replacement switch [3] or [6] into the switch clamp [4].
- (b) Turn the switch in a clockwise direction until the switch makes contact with the trigger and the ball makes contact with the switch mount detent.

SUBTASK 23-51-04-420-002

- (3) PTT switch adjustment:

- (a) Adjust microphone PTT switch [6] until switch contacts trigger and the catch ball contacts switch mount detent.
- (b) Adjust interphone PTT switch [3] until switch contacts trigger, then back off one quarter turn.
- (c) Install the locking screw [5] in the clamp [4].
- (d) Push the trigger to the INT position and then release the trigger.
 - 1) Trigger stays in the detented position.

NOTE: Two common conditions exist that may prevent the trigger from staying in the detented position: switch position and catch ball depth. Perform the steps that follow as required to correct these conditions.

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HAP 012, 013, 015-026, 028-054, 101-999 (Continued)

- a) Switch position: Loosen the clamp screw and back the interphone switch out until the trigger remains in the detented position and retighten the screw clamp.
- b) Catch ball depth: Adjust the catch ball depth by rotating the ball sleeve with a small spanner tool.
- (e) Push the trigger to the center (OFF) position.
- (f) Push the trigger to the MIC position and then release the trigger.
 - 1) Make sure that the trigger returns to the center (OFF) position.

HAP 001-011

SUBTASK 23-51-04-420-004

- (4) Install the push-to-talk (PTT) switch on the control wheel:
 - (a) Install the replacement switch [3] or [6] into the switch clamp [4].
 - (b) Turn the switch clockwise until the switch stays in the switch clamp.
 - (c) Adjust microphone PTT switch [6] until the switch contacts the clamp.
 - (d) Adjust the interphone PTT switch [3] until switch contacts trigger.
 - (e) Turn the interphone switch [3] clockwise 1/4 turn, plus or minus 1/8 turn to preload the switch button.
 - (f) Tighten the locking screw [5] in the clamp [4].

HAP ALL

SUBTASK 23-51-04-420-003

- (5) Finish PTT switch installation:
 - (a) Connect the terminal lugs to the switch you just installed.
 - 1) Make sure you connect the correct wire on the correct terminal.
 - (b) Make sure the locking screw is tight.
 - (c) Carefully push the clamp [4] into the control wheel.
 - (d) Install and tighten the two mounting screws [2] on the control wheel.

SUBTASK 23-51-04-860-003

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	21	C00084	INTPH AND WARN
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT
D	24	C00085	AUDIO OBS

D. Installation Test

SUBTASK 23-51-04-860-004

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

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HAP 001-013, 015-026, 028-036

SUBTASK 23-51-04-710-001

- (2) Do an operational test of the PTT switch on the control wheel:
- (a) Push the FLT INT microphone selector switch on the pilot's audio control panel (ACP) to on.
 - (b) Push the volume control for the FLT INT microphone selector switch.
 - (c) Turn the volume control for the FLT INT microphone selector switch clockwise to the middle position.
 - (d) Push the SPKR volume control switch to on.
 - (e) Turn the SPKR volume control switch clockwise to the middle position or to the volume level you are comfortable with.
 - (f) Push and hold the PTT switch on the pilot's control wheel to the MIC position.
 - (g) Speak into the pilot's boom microphone.
 - 1) Make sure you hear the voice clearly on the headsets.
 - (h) Release the PTT switch.
 - 1) Make sure the switch goes to the center (off) position.
 - (i) Push and hold the PTT switch on the pilot's control wheel to the INT position.
 - (j) Speak into the pilot's boom microphone.
 - 1) Make sure you can hear the voice clearly on the headsets.
 - (k) Release the PTT switch.

HAP 001-011

- 1) Make sure the switch goes to the center (off) position.

HAP 012, 013, 015-026, 028-036

- 2) Make sure the switch remains in the INT position.
- 3) Push the PTT switch to the center (off) position.

HAP 037-054, 101-999

SUBTASK 23-51-04-710-002

- (3) Do an operational test of the PTT switch on the control wheel:
- (a) Push the FLT microphone selector switch on the pilot's audio control panel (ACP) to on.
 - (b) Push the volume control for the FLT microphone selector switch.
 - (c) Turn the volume control for the FLT microphone selector switch clockwise to the middle position.
 - (d) Push the SPKR volume control switch to on.
 - (e) Turn the SPKR volume control switch clockwise to the middle position or to the volume level you are comfortable with.
 - (f) Push and hold the PTT switch on the pilot's control wheel to the MIC position.
 - (g) Speak into the pilot's boom microphone.
 - 1) Make sure you hear the voice clearly on the headsets.
 - (h) Release the PTT switch.
 - 1) Make sure the switch goes to the center (off) position.

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HAP 037-054, 101-999 (Continued)

- (i) Push and hold the PTT switch on the pilot's control wheel to the INT position.
- (j) Speak into the pilot's boom microphone.
 - 1) Make sure you can hear the voice clearly on the headsets.
- (k) Release the PTT switch.
 - 1) Make sure the PTT switch remains in the INT position.
 - 2) Push the PTT switch to the center (off) position).

HAP ALL

SUBTASK 23-51-04-860-005

- (4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

HAP 012, 013, 015-026, 028-054, 101-999

TASK 23-51-04-820-801

4. Catch Ball Adjustment

A. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

B. Procedure

SUBTASK 23-51-04-820-001

- (1) Do these steps to adjust the bullet catch on the trigger when the PTT switch will not lock in the INT position:
 - (a) Push and hold the trigger to the top (MIC) position to get access to the bullet catch.

NOTE: You will need to push the trigger to the bottom (INT) position to check the adjustments. Push the trigger to the top (MIC) position to make the adjustments.
 - (b) Turn the bullet catch clockwise with the adjusting wrench until the ball no longer makes contact with the switch mount detent when you push the trigger to the INT position.
 - (c) Turn the bullet catch counterclockwise until the ball just makes contact with the switch mount detent when you push the trigger to the INT position.
 - (d) Turn the bullet catch counterclockwise 1/4 turn.

NOTE: Do not extend the bullet catch further than 0.078 inch from the trigger. If the PTT switch will not stay in the INT position when the bullet catch is fully extended, then it may be necessary to replace the switch mount, depending on the installation.

SUBTASK 23-51-04-700-001

- (2) Do this test of the bullet catch adjustment:
 - (a) Push the trigger to the bottom (INT) position.
 - 1) Make sure the trigger stays in the locked INT position.

————— END OF TASK —————

EFFECTIVITY HAP ALL	
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AIRCRAFT MAINTENANCE MANUAL

GLARESHIELD PTT SWITCH - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

- (1) A removal of the push-to-talk (PTT) switch on the glareshield.
- (2) An installation of the PTT switch on the glareshield.
 - (a) The installation task includes an operational test of the PTT switch.

TASK 23-51-05-000-801

2. Glareshield PTT Switch Removal

A. Location Zones

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

B. Procedure

SUBTASK 23-51-05-860-001

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

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

SUBTASK 23-51-05-020-001

- (2) Remove the push-to-talk (PTT) switch on the glareshield:
 - (a) Remove the two mounting screws [2] from the PTT switch plate [1] on the glareshield.
 - (b) Carefully pull the PTT switch plate [1] to get access to the connector [3] at the back of the PTT switch.
 - (c) Disconnect the electrical cable from the connector [3].
 - (d) Remove the locking nut [4] that holds the PTT switch to the plate [1].
 - (e) Remove the PTT switch [5].

END OF TASK

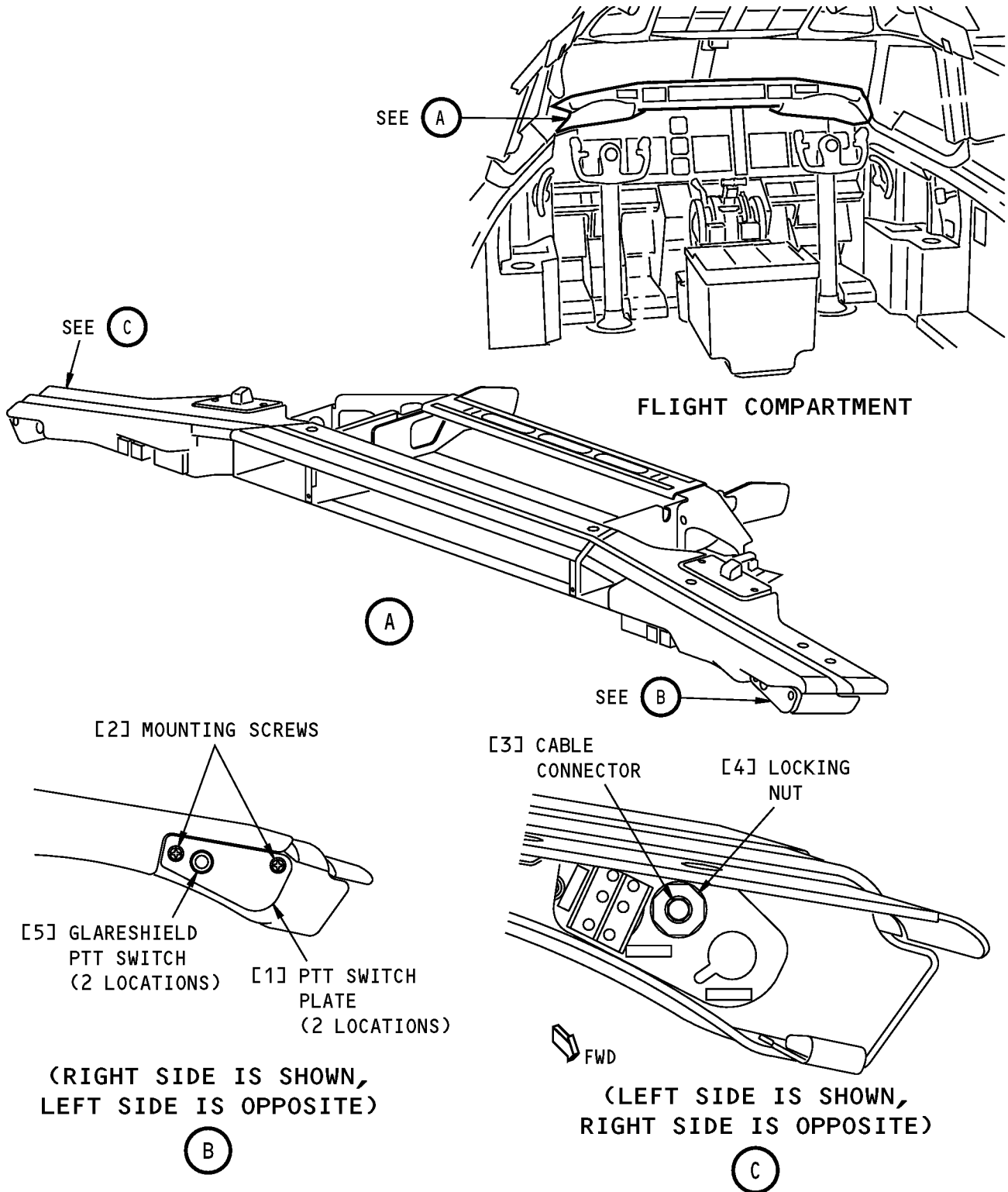
EFFECTIVITY HAP 031-054, 101-999

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**Glareshield PTT Switch Installation
Figure 401/23-51-05-990-801**

EFFECTIVITY
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TASK 23-51-05-400-801

3. Glareshield PTT Switch Installation

Figure 401

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 23-51-05-860-005

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

SUBTASK 23-51-05-420-001

- (2) Install the push-to-talk (PTT) switch on the glareshield:
 - (a) Carefully push the replacement PTT switch [5] into the switch plate [1].
 - (b) Install the locking nut (4) that holds the PTT switch to the switch plate [1].
 - 1) Make sure the locking nut is tight.
 - (c) Connect the electrical cable to the connector [3].
 - (d) Place the PTT switch plate [1] in its position on the glareshield.
 - (e) Tighten the two fasteners [2] that attach the PTT switch plate [1] to the glareshield.

SUBTASK 23-51-05-860-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	21	C00560	INTERPHONE POWER F/O DC 2
C	22	C00561	INTERPHONE POWER F/O BAT
C	23	C00239	INTERPHONE POWER CAPT DC 2
C	24	C00240	INTERPHONE POWER CAPT BAT
D	22	C00086	AUDIO F/O
D	23	C00083	AUDIO CAPT

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D. Installation Test

SUBTASK 23-51-05-860-003

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811

HAP 031-036

SUBTASK 23-51-05-710-001

- (2) Do an operational test of the PTT switch on the glareshield:
- (a) Push the FLT INT microphone selector switch on the audio control panel (ACP) to on.
 - (b) Push the volume control for the FLT INT microphone selector switch to ON.
 - (c) Turn the volume control for the FLT INT microphone selector switch clockwise to the middle position.
 - (d) Push the SPKR volume control switch to on.
 - (e) Turn the SPKR volume control switch clockwise to the middle position or to the volume level you are comfortable with.
 - (f) Push and hold the PTT switch on the glareshield.
 - (g) Speak into the boom microphone.
 - 1) Make sure you can hear the voice clearly from the other headsets.
 - (h) Release the PTT switch on the glareshield panel.

HAP 037-054, 101-999

SUBTASK 23-51-05-710-002

- (3) Do an operational test of the PTT switch on the glareshield:
- (a) Push the FLT microphone selector switch on the audio control panel (ACP) to on.
 - (b) Push the volume control for the FLT microphone selector switch to ON.
 - (c) Turn the volume control for the FLT microphone selector switch clockwise to the middle position.
 - (d) Push the SPKR volume control switch to on.
 - (e) Turn the SPKR volume control switch clockwise to the middle position or to the volume level you are comfortable with.
 - (f) Push and hold the PTT switch on the glareshield.
 - (g) Speak into the boom microphone.
 - 1) Make sure you can hear the voice clearly from the other headsets.
 - (h) Release the PTT switch on the glareshield panel.

HAP 031-054, 101-999

SUBTASK 23-51-05-860-004

(4) If it is necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812

————— **END OF TASK** —————

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STATIC DISCHARGERS - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

- (1) A removal of the static discharger.
- (2) An installation of the static discharger.
- (3) A removal of the static discharger base.
- (4) An installation of the static discharger base.

TASK 23-61-00-000-801

2. Static Discharger Removal

(Figure 201)

A. General

- (1) The static dischargers are installed on the edge of the airplane wing and tail.
- (2) The discharger is held by a setscrew on its base.
- (3) The base is attached to the airplane surface.

B. References

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)

C. Location Zones

Zone	Area
300	Empennage
500	Left Wing
600	Right Wing

D. Procedure

SUBTASK 23-61-00-860-021

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801

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or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802

or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-022

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-010-001

(3) Get access to the defective static discharger.

SUBTASK 23-61-00-020-001

(4) Loosen the static discharger setscrew [2].

SUBTASK 23-61-00-020-002

(5) Remove the static discharger [1] from the discharger base [3].

SUBTASK 23-61-00-010-002

(6) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802

or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802

or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

END OF TASK

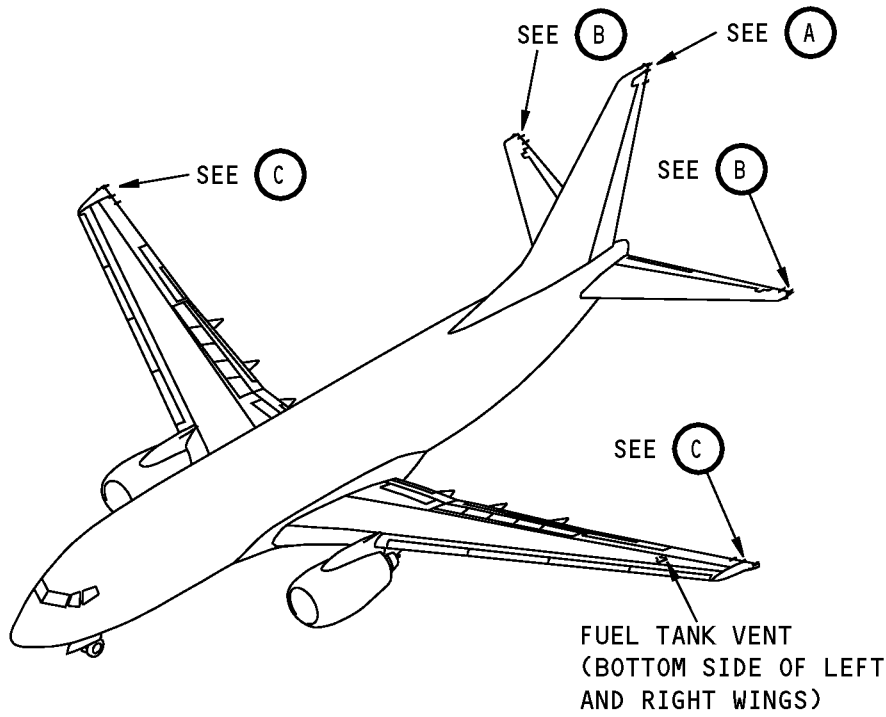
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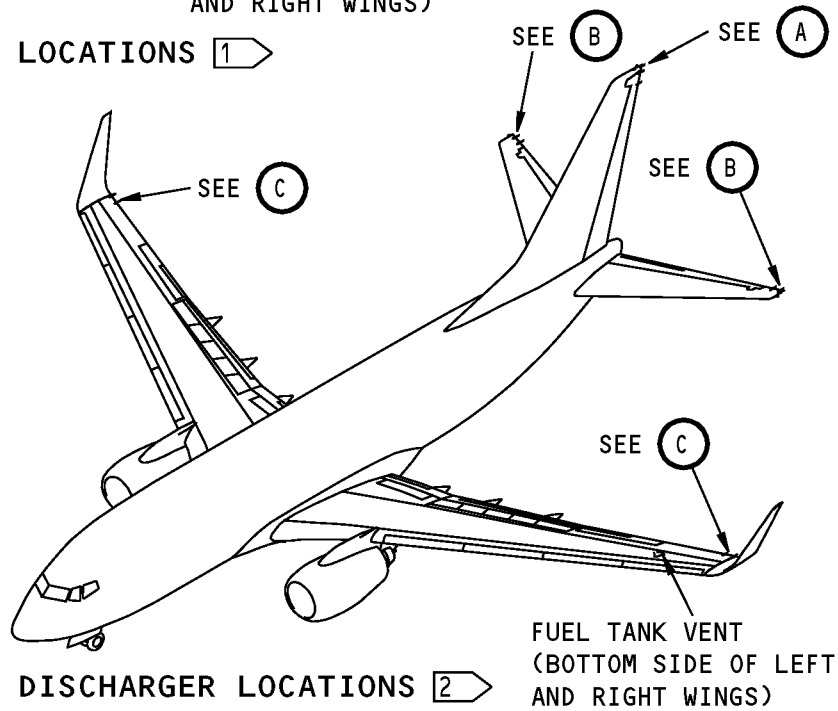
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STATIC DISCHARGER LOCATIONS 1



STATIC DISCHARGER LOCATIONS 2

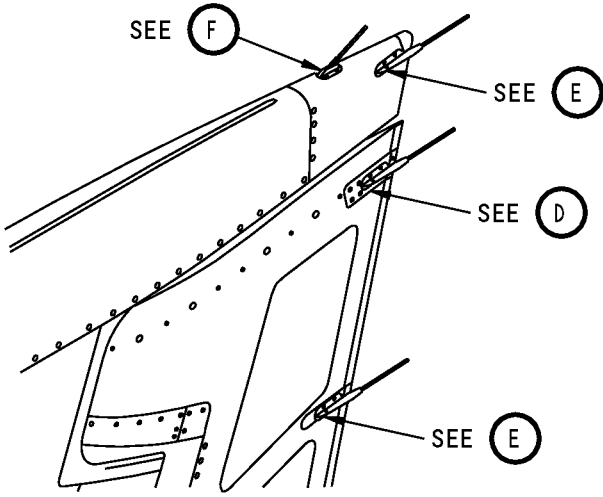
1 AIRPLANES WITHOUT WINGLETS

2 AIRPLANES WITH WINGLETS

**Static Discharger Installation
Figure 201 (Sheet 1 of 3)/23-61-00-990-802**

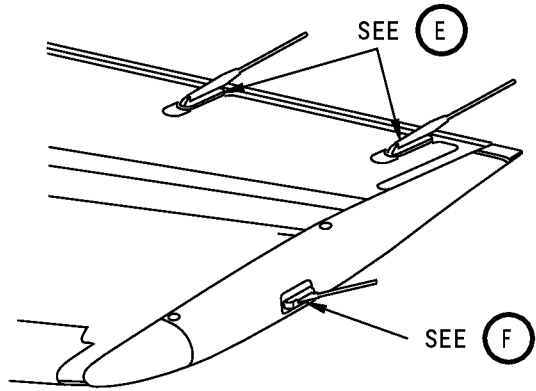
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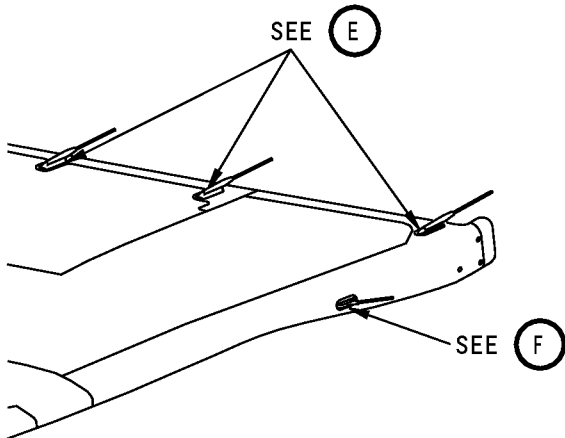
VERTICAL STABILIZER DISCHARGERS

(A)



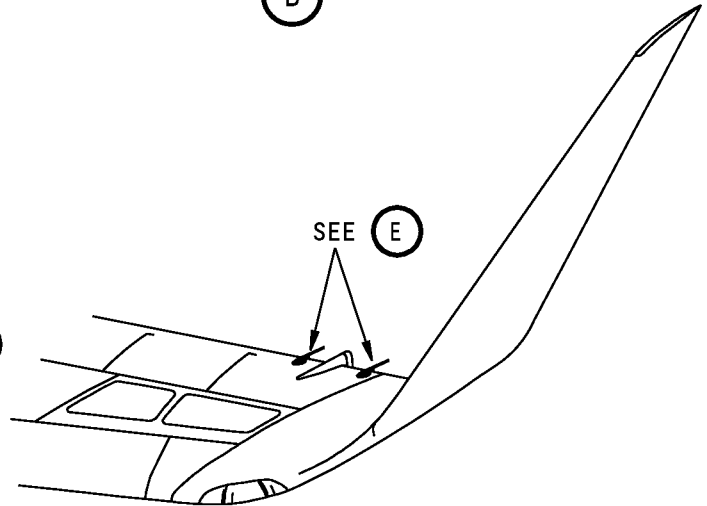
**LEFT HORIZONTAL STABILIZER DISCHARGERS
(RIGHT HORIZONTAL STABILIZER DISCHARGERS ARE OPPOSITE)**

(B)



**LEFT WING DISCHARGERS
(RIGHT WING DISCHARGERS ARE OPPOSITE)**

(C) 1



**LEFT WING DISCHARGERS
(RIGHT WING DISCHARGERS ARE OPPOSITE)**

(C) 2

1 AIRPLANES WITHOUT WINGLETS

2 AIRPLANES WITH WINGLETS

**Static Discharger Installation
Figure 201 (Sheet 2 of 3)/23-61-00-990-802**

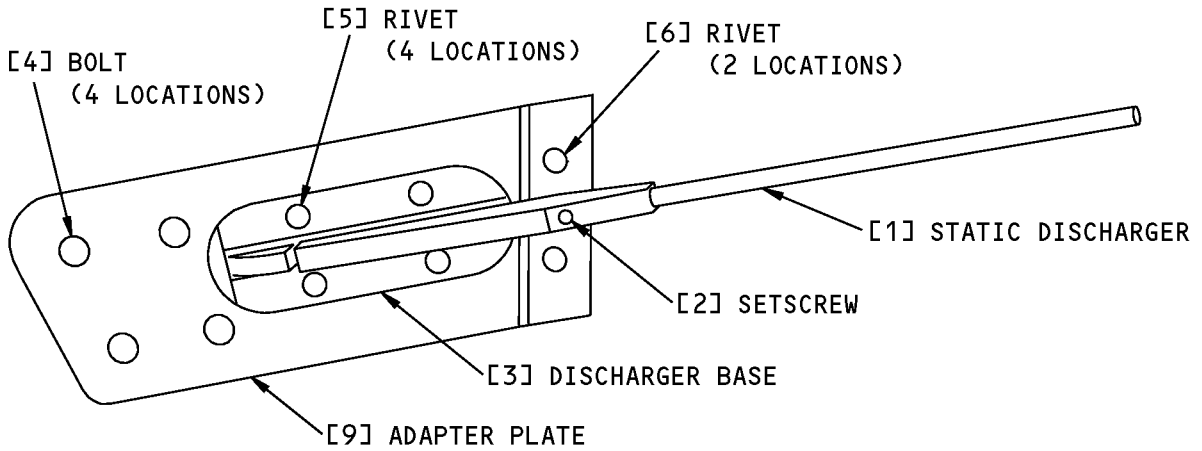
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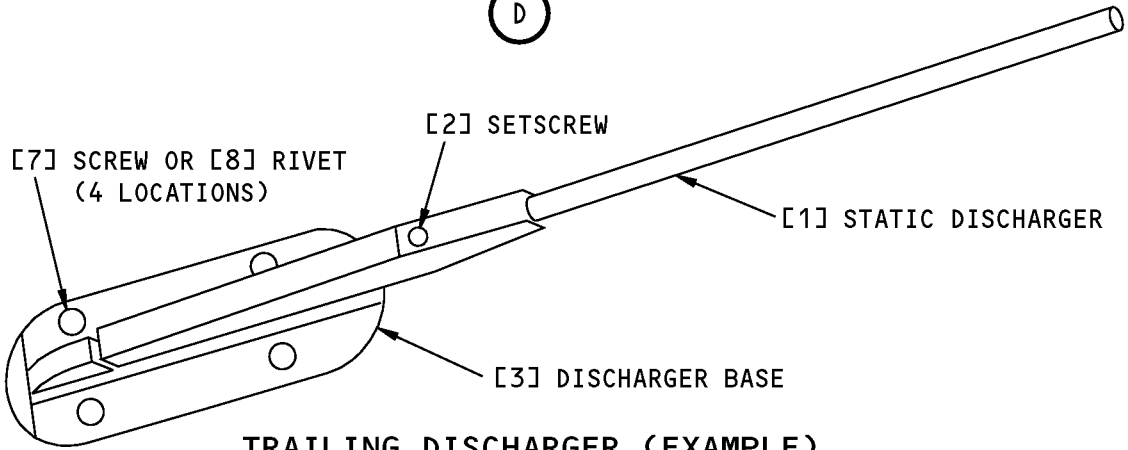
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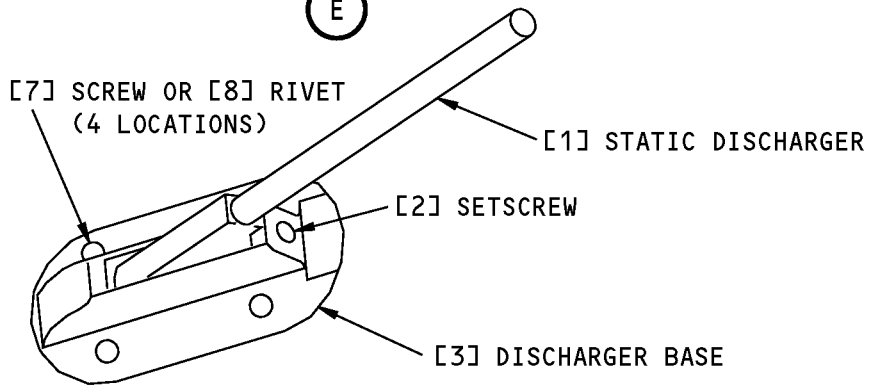
TRAILING DISCHARGER WITH ADAPTER PLATE (EXAMPLE)

(D)



TRAILING DISCHARGER (EXAMPLE)

(E)



TIP DISCHARGER (EXAMPLE)

(F)

Static Discharger Installation
Figure 201 (Sheet 3 of 3)/23-61-00-990-802

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TASK 23-61-00-400-801

3. Static Discharger Installation

(Figure 201)

A. References

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1587	Wrench - Torque, 30 in-lbs (4 N-m) (Part #: TE3FUA, Supplier: 55719, A/P Effectivity: 737-ALL)
COM-1615	Megohmmeter (50 to 500 VDC/ 10 to 1090 VDC, .5 - 5,000 MEGOHM; 5MA Short Circuit Max) (Part #: 1863-9700, Supplier: 0PK96) (Part #: 1863-9700, Supplier: 62015, A/P Effectivity: 737-ALL) (Part #: 1864-9700, Supplier: 62015, A/P Effectivity: 737-ALL)

C. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

D. Procedure

SUBTASK 23-61-00-860-023

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801

or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802

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or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B,
TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-024

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-420-001

(3) Install the static discharger [1] into the discharger base [3]:

- (a) Make sure that there are no broken, blunt, or bent pins or ends on the discharger [1].
- (b) Hold the discharger [1] in the correct position and tighten the setscrew [2] to this value:

HAP ALL; AIRPLANES WITH STATIC DISCHARGERS 2-14SC1, 2-16SC1, 740001, 740007, 80-1746-2, AND 80-1828-2

- 1) Tighten the setscrew [2] to 6 to 9 inch-pounds (0.68-1 newton-meters) using a torque wrench (30 in-lbs), COM-1587.

HAP ALL; AIRPLANES WITH STATIC DISCHARGERS 10-900-21 AND 10-900-25

- 2) Tighten the setscrew [2] to 2.5 inch-pounds (0.28 newton-meters) using a torque wrench (30 in-lbs), COM-1587.

HAP ALL

- (c) Make sure that the discharger [1] is attached to its base.

WARNING: USE THE PRECAUTIONS THAT FOLLOW WHEN YOU USE A MEGOHMMETER. IF YOU DO NOT USE PRECAUTIONS, THEN IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (d) Use these precautions for possible fuel vapors when you use a megohmmeter to measure the discharger resistance.

- 1) Use a megohmmeter, COM-1615 or equivalent meter with a 500 VDC test voltage and a maximum 5 milliampere short circuit current.
- 2) Do not use a megohmmeter at these locations:
 - a) Area adjacent to or below a wing fuel tank vent, five foot (1.524 meters) diameter column, from vent to ground.
 - b) Zero to 18 inches (457 mm) above the ground in the area around the airplane.
- 3) Make sure that:
 - a) Area is well ventilated.
 - b) Metal workstands are grounded.
 - c) Megohmmeter is plugged into a grounded receptacle.
 - d) Megohmmeter is insulated from metal work stand.

- (e) Use a megohmmeter to measure the resistance between the discharger [1] tip and the discharger base [3].

- 1) Set the megohmmeter to 500 VDC test voltage.
- 2) Make a good surface bond with the end of the static discharger [1]:

NOTE: A good connection between the discharger end and the megohmmeter is necessary for a correct resistance value.

- a) Use water to make a cotton wiper, G00034 wet.
- b) Make sure that the full end of the discharger touches the wet cotton wiper, G00034.

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- 3) Put one lead of the megohmmeter on the discharger base [3].
- 4) Put the other lead of the megohmmeter on the wet cotton wiper, G00034 on the discharger end.
- 5) Measure the resistance value.
 - a) Make sure that the resistance value is in a range of 6-100 megohms for the static dischargers.

NOTE: If the measured value is too high, add water to the wet material and then measure the resistance value again.

SUBTASK 23-61-00-010-003

- (4) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802
 or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802
 or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

————— **END OF TASK** —————

TASK 23-61-00-000-802

4. Static Discharger Base Removal (Base Attached with Screws)

(Figure 201)

A. References

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
300	Empennage
500	Left Wing
600	Right Wing

D. Procedure

SUBTASK 23-61-00-860-025

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-026

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-020-003

- (3) Remove the discharger base [3]:
 - (a) Loosen the static discharger setscrew [2].
 - (b) Remove the static discharger [1] from the base.
 - (c) Make a mark with a grease pencil larger than the area of the discharger base [3] be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
 - (d) Remove the discharger base [3]:
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the discharger base [3] with a sealant removal tool, COM-2481.
 - 2) Remove the screws [7] from the discharger base [3].

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a) Keep the screws [7] for installation.

CAUTION: BE VERY CAREFUL WITH THE PUTTY KNIFE. DAMAGE TO THE AIRPLANE SURFACES CAN OCCUR.

- 3) Put a broad blade putty knife, STD-1053 below the edge of the discharger base.
4) Remove the discharger base [3] from the surface.

SUBTASK 23-61-00-010-004

(4) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802

or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802

or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

END OF TASK

TASK 23-61-00-000-803

5. Static Discharger Base Removal (Base Attached with Rivets)

(Figure 201)

A. References

Table with 2 columns: Reference and Title. Lists various task numbers and titles such as 'Remove Electrical Power (P/B 201)', 'Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)', etc.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
300	Empennage
500	Left Wing
600	Right Wing

D. Procedure

SUBTASK 23-61-00-860-027

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-028

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-020-004

- (3) Remove the discharger base [3]:
 - (a) Loosen the static discharger setscrew [2].
 - (b) Remove the static discharger [1] from the base.
 - (c) Make a mark with a grease pencil larger than the area of the discharger base [3] to be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
 - (d) Remove the discharger base [3].
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the discharger base [3] with a sealant removal tool, COM-2481.
 - 2) Remove the rivets [8] from the discharger base [3] (SRM 51-40-02).

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CAUTION: BE VERY CAREFUL WITH THE PUTTY KNIFE. DAMAGE TO THE AIRPLANE SURFACES CAN OCCUR.

- 3) Put a broad blade putty knife, STD-1053 below the edge of the discharger base [3].
- 4) Remove the discharger base [3] from the surface.

SUBTASK 23-61-00-010-005

(4) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802

or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802

or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

————— END OF TASK —————

TASK 23-61-00-000-804

6. Static Discharger Base Removal (Adapter Plate Assembly)

(Figure 201)

A. References

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)
SRM 51-40-02	Structural Repair Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)
STD-1053	Knife - Putty, Broad Blade

C. Location Zones

Zone	Area
300	Empennage
500	Left Wing
600	Right Wing

D. Procedure

SUBTASK 23-61-00-860-029

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-030

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-020-005

- (3) Remove the discharger base assembly:
 - (a) Loosen the static discharger setscrew [2].
 - (b) Remove the static discharger [1] from the discharger base [3].
 - (c) Make a mark with a grease pencil larger than the area of the adapter plate [9] to be cleaned.
 - 1) Make sure that the line is parallel to the airflow.
 - (d) Remove the adapter plate assembly:
 - 1) Remove the weather/aerodynamic fillet seal around the edge of the adapter plate [9] with a sealant removal tool, COM-2481.
 - 2) Remove the bolts [4] and rivets [6] from the adapter plate [9] (SRM 51-40-02).

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CAUTION: BE VERY CAREFUL WITH THE PUTTY KNIFE. DAMAGE TO THE AIRPLANE SURFACES CAN OCCUR.

- 3) Put a broad blade putty knife, STD-1053 below the edge of the adapter plate [9].
- 4) Remove the adapter plate [9] from the surface.
- (e) Remove the discharger base [3] from the adapter plate [9]:
 - 1) Remove the rivets [5] from the discharger base [3] (SRM 51-40-02).
 - 2) Remove the discharger base [3] from the adapter plate [9].

SUBTASK 23-61-00-010-006

- (4) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802
 or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802
 or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

————— END OF TASK —————

TASK 23-61-00-400-802

7. Static Discharger Base Installation (With Screws)

(Figure 201)

A. References

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-30-87-910-801	Final Cleaning of Composites Prior to Painting (Series 87) (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)
51-21-99-300-802	Decorative Exterior Paint System Repair (P/B 701)
51-31-00-390-804	Fillet Seal Application (P/B 201)
51-31-00-390-805	Fastener Seal Application (P/B 201)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)
STD-739	Respirator
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	ANSI B74.18
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS 11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting (AMM 20-30-87/201) - Series 87	
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC 5750, ASTM D740 / ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-32-02-65-050	HAP 028-030
		23-32-02-75-090	HAP 031-054, 101-999
		23-61-00-01-010	HAP 001-013, 015-026, 028-030
		23-61-00-01-015	HAP 001-013, 015-026, 028-030
		23-61-00-01-060	HAP 001-013, 015-026, 028-030
		23-61-00-01-110	HAP 001-013, 015-026, 028-030
		23-61-00-01-160	HAP 001-013, 015-026, 028-030
		23-61-00-01-205	HAP 001-013, 015-026, 028-030

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AMM Item	Description	AIPC Reference	AIPC Effectivity
1 (cont.)		23-61-00-01-210	HAP 001-013, 015-026, 028-030
		23-61-00-01-255	HAP 001-013, 015-026, 028-030
		23-61-00-02-110	HAP 031-054, 101-999
		23-61-00-02-160	HAP 031-054, 101-999
		23-61-00-02-210	HAP 031-054, 101-999
		23-61-00-02-305	HAP 031-054, 101-999
		23-61-00-02-310	HAP 031-054, 101-999
		23-61-00-02-355	HAP 031-054, 101-999

E. Procedure

SUBTASK 23-61-00-860-031

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
 or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
 or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-032

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-420-002

- (3) Prepare to install the static discharger base [3]:
 - (a) Remove the sealant with a sealant removal tool, COM-2481.

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the area to be bonded with the solvent, B00148, solvent, B00666, solvent, B00184, FCC-55 solvent, B01026, or solvent, B01054 .
 - 1) Wear a respirator, STD-739 to clean with solvents.
 - 2) Apply the solvent with a cotton wiper, G00034.
- (c) Remove the solvent with cotton wiper, G00034 before it dries.
 - 1) Make sure that you do not touch the cleaned surface.
- (d) Rub the surface with the abrasive cloth, B00102 (600 grit) (TASK 20-10-34-120-801).

NOTE: Change the sandpaper frequently.

- 1) Make sure that you have a smooth surface.

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- 2) Make sure that the surface is not shiny.
- (e) Clean with cotton wiper, G00034.

NOTE: Do not use solvent.

SUBTASK 23-61-00-420-003

- (4) Install the static discharger base [3]:
 - (a) Remove the metal discharger base from the plastic container.
 - 1) Do not touch the bottom surface of the discharger base [3] which touches the airplane surface.

CAUTION: YOU MUST INSTALL THE DISCHARGER BASE IN 5 MINUTES OR LESS AFTER IT WAS RUBBED WITH SANDPAPER. OXIDATION CAN OCCUR IF IT IS LONGER THAN 5 MINUTES.

- (b) Rub the static discharger base [3] with abrasive cloth, B00102.

NOTE: Do not rub a plated discharger base with sandpaper. A plated discharger base has a green dot for identification. Put a pair of gloves on to touch the bases.

- 1) Make sure that you have a smooth surface.

NOTE: Change the sandpaper frequently.

- 2) Make sure that the airplane surface is not shiny.

- (c) Attach the discharger base [3] to the airplane surface.
 - 1) Make sure that you install the base in the same direction as the airflow.
- (d) Install the screws [7] that you removed on the removal procedure to attach the base.
- (e) Apply sealant, A00247 to the screws [7](TASK 51-31-00-390-805).
- (f) Apply sealant, A00247 to the edge of the discharger base [3] (TASK 51-31-00-390-804).
- (g) Make the sealant smooth with a hardwood or plastic fillet smoothing spatula, STD-810.
- (h) Make sure that you do not see cracks between the discharger base [3] and the airplane surface.
- (i) Remove the unwanted sealant, A00247 with a cotton wiper, G00034 which is moist with Series 87 solvent, B01007 (TASK 20-30-87-910-801).

SUBTASK 23-61-00-750-001

- (5) Examine the installation of the discharger base [3].
 - (a) Make sure that there are no cracks in the sealant, A00247.
 - (b) If you find a crack, fill the crack with the sealant, A00247.

SUBTASK 23-61-00-760-003

WARNING: MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (6) Use a bonding meter, COM-1550 to measure the electrical bond between the discharger base [3] and the airplane surface (SWPM 20-20-00).

NOTE: This resistance value is for a new installed static discharger base and a new bond. The resistance value is different for an in-service bond and the discharger base.

- (a) The resistance value of a new discharger base [3] must not be more than:

NOTE: A resistance of more than these value can cause airplane equipment damage if a lightning strike occurs.

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- 1) 0.01 ohms for discharger bases [3] installed on metal panels.
2) 0.10 ohms for discharger bases [3] installed on an aluminum flame spray on top of the fiberglass laminate or the composite panel.

NOTE: This includes discharger bases installed on aluminum-covered fabric.

- 3) 1.0 ohms for discharger bases [3] installed on composite panels without a cover of the aluminum flame spray.

SUBTASK 23-61-00-410-001

- (7) To install the static discharger [1] into the discharger base [3], do this task: Static Discharger Installation, TASK 23-61-00-400-801.

SUBTASK 23-61-00-370-001

- (8) Paint the area around the discharger base [3] (TASK 51-21-99-300-802).

SUBTASK 23-61-00-010-007

- (9) Put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802 or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802 or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

END OF TASK

TASK 23-61-00-400-803

8. Static Discharger Base Installation (With Rivets)

(Figure 201)

A. References

Table with 2 columns: Reference and Title. Lists various task numbers and their descriptions related to discharger base installation.

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B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)
STD-739	Respirator
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	ANSI B74.18
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS 11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting (AMM 20-30-87/201) - Series 87	
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC 5750, ASTM D740 / ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-32-02-65-050	HAP 028-030
		23-32-02-75-090	HAP 031-054, 101-999
		23-61-00-01-010	HAP 001-013, 015-026, 028-030
		23-61-00-01-015	HAP 001-013, 015-026, 028-030
		23-61-00-01-060	HAP 001-013, 015-026, 028-030

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AMM Item	Description	AIPC Reference	AIPC Effectivity
1 (cont.)		23-61-00-01-110	HAP 001-013, 015-026, 028-030
		23-61-00-01-160	HAP 001-013, 015-026, 028-030
		23-61-00-01-205	HAP 001-013, 015-026, 028-030
		23-61-00-01-210	HAP 001-013, 015-026, 028-030
		23-61-00-01-255	HAP 001-013, 015-026, 028-030
		23-61-00-02-110	HAP 031-054, 101-999
		23-61-00-02-160	HAP 031-054, 101-999
		23-61-00-02-210	HAP 031-054, 101-999
		23-61-00-02-305	HAP 031-054, 101-999
		23-61-00-02-310	HAP 031-054, 101-999
		23-61-00-02-355	HAP 031-054, 101-999
8	Rivet	55-10-00-08-025	HAP 001-013, 015-026, 028-030
		55-10-00-25-050	HAP 001-013, 015-026, 028-036
		57-30-00-01-216	HAP 001-013, 015-026, 028-030
		57-30-00-01-220	HAP 001-013, 015-026, 028-031
		57-30-00-01-265	HAP 001-013, 015-026, 028-030
		57-30-00-01-270	HAP 001-013, 015-026, 028-030
		57-30-00-01-275	HAP 001-013, 015-026, 028-030
		57-30-00-01-280	HAP 001-013, 015-026, 028-030
		57-50-00-13-115	HAP ALL

E. Procedure

SUBTASK 23-61-00-860-033

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

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SUBTASK 23-61-00-860-034

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-420-004

(3) Prepare to install the static discharger base [3]:

(a) Remove the sealant with a sealant removal tool, COM-2481.

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(b) Clean the area to be bonded with solvent, B00148, solvent, B00666, solvent, B00184, FCC-55 solvent, B01026, or solvent, B01054 .

1) Wear a respirator, STD-739 to clean with solvent.

2) Apply the solvent with a cotton wiper, G00034.

(c) Remove the solvent with cotton wiper, G00034 before it dries.

1) Make sure that you do not touch the cleaned surface.

(d) Rub the surface with the abrasive cloth, B00102 (600 grit) 1183 (TASK 20-10-34-120-801).

NOTE: Change the sandpaper frequently.

1) Make sure that you have a smooth surface.

2) Make sure that the surface is not shiny.

(e) Clean with cotton wiper, G00034.

NOTE: Do not use solvent.

SUBTASK 23-61-00-420-005

(4) Install the static discharger base [3]:

(a) Remove the metal discharger base [3] from the plastic container.

1) Do not touch the bottom surface of the discharger base [3] which touches the airplane surface.

CAUTION: YOU MUST INSTALL THE DISCHARGER BASE IN 5 MINUTES OR LESS AFTER IT WAS RUBBED WITH SANDPAPER. OXIDATION CAN OCCUR IF IT IS LONGER THAN 5 MINUTES.

(b) Rub the static discharger base [3] with abrasive cloth, B00102.

NOTE: Do not rub a plated base with sandpaper. A plated discharger base has a green dot for identification. Put a pair of gloves on to touch the bases.

1) Make sure that you have a smooth surface.

NOTE: Change the sandpaper frequently.

2) Make sure that the airplane surface is not shiny.

(c) Attach the discharger base [3] to the airplane surface.

1) Make sure that you install the base in the same direction as the airflow.

(d) Install the rivets [8] to the base (SRM 51-40-02).

(e) Apply sealant, A00247 to the rivet (TASK 51-31-00-390-805).

(f) Apply sealant, A00247 to the edge of the discharger base (TASK 51-31-00-390-804).

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- (g) Make the sealant smooth with a hardwood or plastic fillet smoothing spatula, STD-810.
- (h) Make sure that you do not see cracks between the discharger base [3] and the airplane surface.
- (i) Remove the unwanted sealant, A00247 with a cotton wiper, G00034 which is moist with Series 87 solvent, B01007 (TASK 20-30-87-910-801).

SUBTASK 23-61-00-750-002

- (5) Examine the installation of the discharger base [3].
 - (a) Make sure that there are no cracks in the sealant, A00247.
 - (b) If you find a crack, fill the crack with the sealant, A00247.

SUBTASK 23-61-00-760-004

WARNING: MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (6) Use a bonding meter, COM-1550 to measure the electrical bond between the discharger base [3] and the airplane surface (SWPM 20-20-00).

NOTE: This resistance value is for a new installed static discharger base and a new bond. An in-service bond and the discharger base will have a different resistance value.

- (a) The resistance value of a new discharger base [3] must not be more than:

NOTE: A resistance of more than these values can cause airplane equipment damage if a lightning strike occurs.

- 1) 0.01 ohms for discharger bases [3] installed on metal panels.
- 2) 0.10 ohms for discharger bases [3] installed on a fiberglass laminate or a composite panel with a cover of the aluminum flame spray.

NOTE: This includes discharger bases installed on aluminum-covered fabric.

- 3) 1.0 ohms for discharger bases [3] installed on composite panels without a cover of the aluminum flame spray.

SUBTASK 23-61-00-410-002

- (7) To install the static discharger [1] into the discharger base [3], do this task: Static Discharger Installation, TASK 23-61-00-400-801.

SUBTASK 23-61-00-370-002

- (8) Paint the area around the discharger base [3] (TASK 51-21-99-300-802).

SUBTASK 23-61-00-010-008

- (9) Put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802 or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802

or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

————— END OF TASK —————

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TASK 23-61-00-400-805

9. Static Discharger Base Installation (Adapter Plate Assembly With Rivets and Screws)

(Figure 201)

A. References

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-30-87-910-801	Final Cleaning of Composites Prior to Painting (Series 87) (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)
51-21-99-300-802	Decorative Exterior Paint System Repair (P/B 701)
51-31-00-390-804	Fillet Seal Application (P/B 201)
51-31-00-390-805	Fastener Seal Application (P/B 201)
SRM 51-40-02	Structural Repair Manual
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved (Part #: 1-6390-A, Supplier: 63318, A/P Effectivity: 737-ALL) (Part #: 10810, Supplier: \$0855, A/P Effectivity: 737-ALL) (Part #: 234350, Supplier: \$0857, A/P Effectivity: 737-ALL) (Part #: 311, Supplier: KA861, A/P Effectivity: 737-ALL) (Part #: 411B60, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: 411B90, Supplier: 3DN12, A/P Effectivity: 737-ALL) (Part #: DAD5013, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: DFD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: J5-0275-2010, Supplier: 435R8, A/P Effectivity: 737-ALL) (Part #: SCD5019, Supplier: \$0856, A/P Effectivity: 737-ALL) (Part #: ST982LF, Supplier: 3Z323, A/P Effectivity: 737-ALL) (Part #: TS1275-4, Supplier: 1DWR5, A/P Effectivity: 737-ALL)
STD-739	Respirator
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

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C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
B00102	Abrasive - Aluminum Oxide Coated Cloth	ANSI B74.18
B00148	Solvent - Methyl Ethyl Ketone (MEK)	ASTM D740
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7
B00666	Solvent - Methyl Propyl Ketone	BMS 11-9
B01007	Solvent - Final Cleaning Of Composites Prior To Painting (AMM 20-30-87/201) - Series 87	
B01026	Solvent - FCC-55	
B01054	Solvent - Methyl Ethyl Ketone and sec-Butyl Alcohol Blend - (MEK:secButyl Alcohol - 42:58 Percent)	BAC 5750, ASTM D740 / ASTM D1007
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Discharger	23-32-02-65-050	HAP 028-030
		23-32-02-75-090	HAP 031-054, 101-999
		23-61-00-01-010	HAP 001-013, 015-026, 028-030
		23-61-00-01-015	HAP 001-013, 015-026, 028-030
		23-61-00-01-060	HAP 001-013, 015-026, 028-030
		23-61-00-01-110	HAP 001-013, 015-026, 028-030
		23-61-00-01-160	HAP 001-013, 015-026, 028-030
		23-61-00-01-205	HAP 001-013, 015-026, 028-030
		23-61-00-01-210	HAP 001-013, 015-026, 028-030
		23-61-00-01-255	HAP 001-013, 015-026, 028-030
		23-61-00-02-110	HAP 031-054, 101-999
		23-61-00-02-160	HAP 031-054, 101-999
		23-61-00-02-210	HAP 031-054, 101-999
		23-61-00-02-305	HAP 031-054, 101-999
23-61-00-02-310	HAP 031-054, 101-999		
23-61-00-02-355	HAP 031-054, 101-999		
5	Rivet	55-40-00-08-230	HAP ALL

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E. Procedure

SUBTASK 23-61-00-860-035

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-036

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-420-009

- (3) Prepare to install the static discharger base [3]:
 - (a) Remove the sealant with a sealant removal tool, COM-2481.

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

- (b) Clean the adapter plate [9] to be bonded with solvent, B00148, solvent, B00666, solvent, B00184, FCC-55 solvent, B01026, or solvent, B01054 .
 - 1) Wear a respirator, STD-739 to clean with solvent.
 - 2) Apply the solvent with a cotton wiper, G00034.
- (c) Remove the solvent with cotton wiper, G00034 before it dries.
 - 1) Make sure that you do not touch the cleaned surface.
- (d) Rub the adapter plate [9] surface with the abrasive cloth, B00102 (600 grit) (TASK 20-10-34-120-801).

NOTE: Change the sandpaper frequently.

- 1) Make sure that you have a smooth surface.
 - 2) Make sure that the surface is not shiny.
- (e) Clean with cotton wiper, G00034.

NOTE: Do not use solvent.

SUBTASK 23-61-00-420-010

- (4) Install the static discharger base [3]:
 - (a) Remove the metal discharger base [3] from the plastic container.
 - 1) Do not touch the surface of the discharger base [3] which touches the adapter plate [9].

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CAUTION: YOU MUST INSTALL THE DISCHARGER BASE IN 5 MINUTES OR LESS AFTER IT WAS RUBBED WITH SANDPAPER. OXIDATION CAN OCCUR IF IT IS LONGER THAN 5 MINUTES.

- (b) Rub the discharger base [3] with abrasive cloth, B00102.

NOTE: Do not rub a plated base with sandpaper. A plated discharger base has a green dot for identification. Put a pair of gloves on to touch the bases.

- 1) Make sure that you have a smooth surface.

NOTE: Change the sandpaper frequently.

- 2) Make sure that the adapter plate [9] is not shiny.

- (c) Attach the discharger base [3] to the adapter plate [9].
(d) Install the rivets [5] which attaches the base to the adapter plate [9] (SRM 51-40-02).
(e) Apply sealant, A00247 to the rivets [5] (TASK 51-31-00-390-805).
(f) Apply sealant, A00247 to the edge of the discharger base [3] (TASK 51-31-00-390-804).
(g) Make the sealant smooth with a hardwood or plastic fillet smoothing spatula, STD-810.
(h) Make sure that you do not see cracks between the discharger base [3] and the adapter plate [9] surface.
(i) Remove the unwanted sealant, A00247 with a cotton wiper, G00034 which is moist with Series 87 solvent, B01007 (TASK 20-30-87-910-801).

SUBTASK 23-61-00-420-011

- (5) Install the adapter plate assembly:

- (a) Rub the airplane surface with abrasive cloth, B00102.

- 1) Make sure that you have a smooth surface.

NOTE: Change the sandpaper frequently.

- 2) Make sure that the airplane surface is not shiny.

- (b) Attach the adapter plate assembly to the airplane surface.
1) Make sure that you install the adapter plate assembly in the same direction as the airflow.
(c) Install the bolts [4] that attaches the adapter plate assembly.
(d) Install the rivets [6] that attach the adapter plate assembly (SRM 51-40-02).
(e) Apply sealant, A00247 to the rivets [6] and bolts [4] (TASK 51-31-00-390-805).
(f) Apply sealant, A00247 to the edge of the adapter plate [9] (TASK 51-31-00-390-804).
(g) Make the sealant smooth with a hardwood or plastic fillet smoothing spatula, STD-810.
(h) Make sure that you do not see cracks between the adapter plate [9] and the airplane surface.
(i) Remove the unwanted sealant, A00247 with a cotton wiper, G00034 which is moist with solvent, B00148 :

SUBTASK 23-61-00-750-004

- (6) Examine the installation of the discharger base [3].

- (a) Make sure that there are no cracks in the sealant, A00247.
(b) If you find a crack, fill the crack with the sealant, A00247.

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SUBTASK 23-61-00-760-006

WARNING: MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (7) Use a bonding meter, COM-1550 to measure the electrical bond between the discharger base [3] and the airplane surface (SWPM 20-20-00).

NOTE: This resistance value is for a new installed static discharger base and a new bond. An in-service bond and the discharger base will have a different resistance value.

- (a) The resistance value of a new discharger base [3] must not be more than:

NOTE: A resistance of more than these values can cause airplane equipment damage if a lightning strike occurs.

- 1) 0.01 ohms for discharger bases [3] installed on metal panels.
- 2) 0.10 ohms for discharger bases [3] installed on an aluminum flame spray on top of the fiberglass laminate or the composite panel.

NOTE: This includes discharger bases installed on aluminum-covered fabric.

- 3) 1.0 ohms for discharger bases [3] installed on composite panels without a cover of the aluminum flame spray.

SUBTASK 23-61-00-410-004

- (8) To install the static discharger [1] into the discharger base [3], do this task: Static Discharger Installation, TASK 23-61-00-400-801.

SUBTASK 23-61-00-370-004

- (9) Paint the area around the discharger base [3] (TASK 51-21-99-300-802).

SUBTASK 23-61-00-010-009

- (10) Put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802 or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802 or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

————— **END OF TASK** —————

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STATIC DISCHARGER - INSPECTION/CHECK

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has two tasks:
 - (1) An inspection of the static dischargers.
 - (2) A resistance check of the static dischargers.
- C. You must do a check of the static dischargers regularly to prevent static interference and bad radio operation.

TASK 23-61-00-210-801

2. Static Discharger Inspection

(Figure 601)

A. References

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)

B. Location Zones

Zone	Area
300	Empennage
500	Left Wing
600	Right Wing

C. Procedure

SUBTASK 23-61-00-860-037

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
 or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
 or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

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SUBTASK 23-61-00-860-038

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-210-001

(3) Make sure that at least 12 static dischargers are installed correctly in the locations that follow:

NOTE: There are 18 static dischargers installed on airplanes without winglets. There are 14 static dischargers installed on airplanes with winglets.

- (a) Make sure at least two dischargers are installed on each horizontal stabilizer.
 - 1) Make sure that one is in the tip position or in the outermost trailing position.
- (b) Make sure that at least two static dischargers are installed on the vertical stabilizer and that one of the two must be in the top-most position.
- (c) AIRPLANES WITH WINGLETS;
Make sure that the static discharger in the outermost trailing position is installed on each wing.
- (d) AIRPLANES WITHOUT WINGLETS;
Make sure that at least two static dischargers are installed on each wing.
 - 1) If there are only two static dischargers on a wing, then at least one must be in the tip position or in the outermost trailing position.

SUBTASK 23-61-00-210-003

(4) Make sure that there is no lightning damage.

NOTE: This damage will be seen as a burned or a rough area on the black conductive surfaces.

- (a) You could also find damage as pits on the discharger base.
- (b) Replace the discharger if it is necessary.

SUBTASK 23-61-00-210-002

(5) Do a visual check for erosion of the discharger surface:

- (a) The leading edge erosion on the discharger must not extend more than 1/3 of the discharger width.
- (b) Replace all dischargers that show damage.

SUBTASK 23-61-00-010-010

(6) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802

or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802

or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

————— **END OF TASK** —————

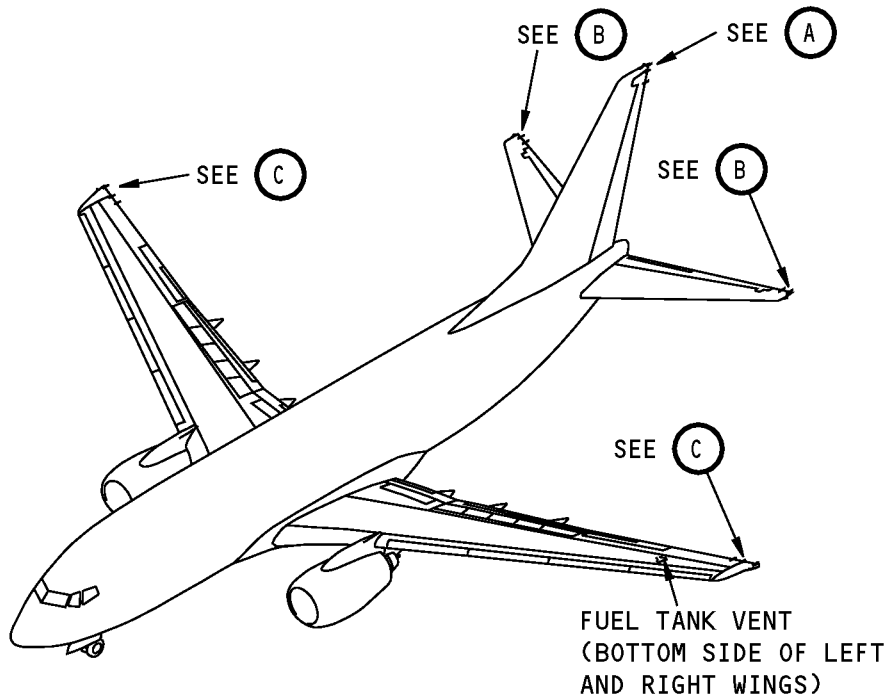
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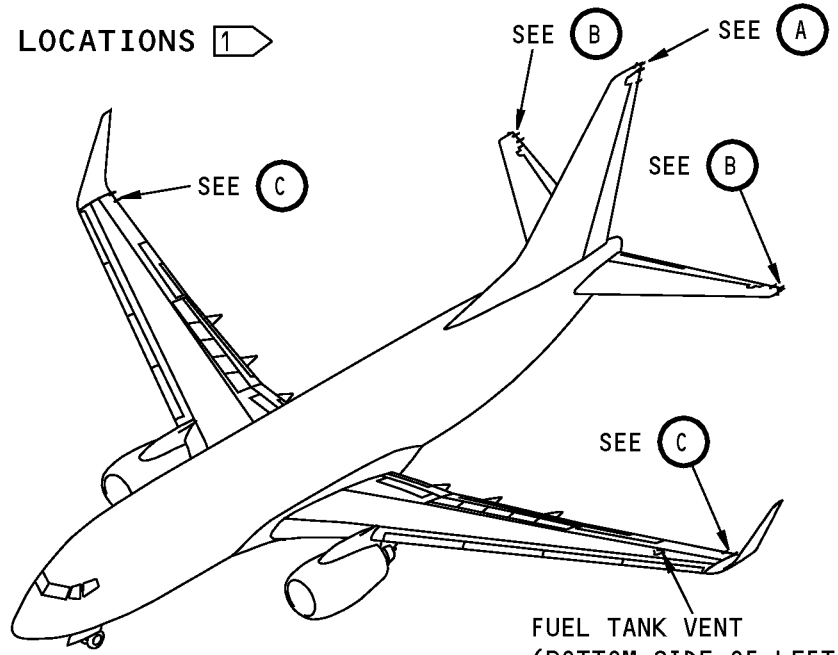
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STATIC DISCHARGER LOCATIONS 1



STATIC DISCHARGER LOCATIONS 2

1 AIRPLANES WITHOUT WINGLETS

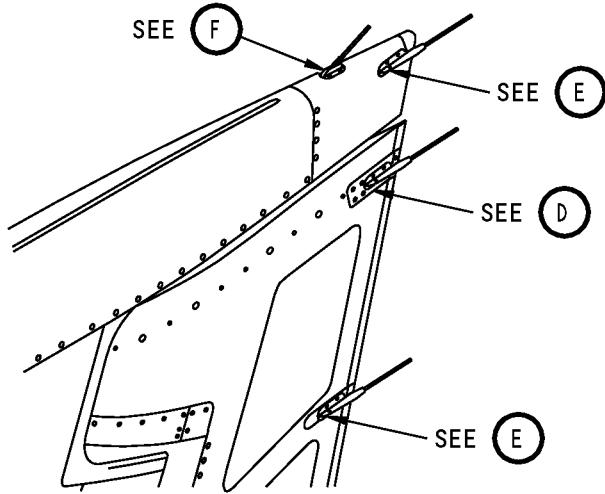
2 AIRPLANES WITH WINGLETS

**Static Discharger Inspection
Figure 601 (Sheet 1 of 3)/23-61-00-990-801**

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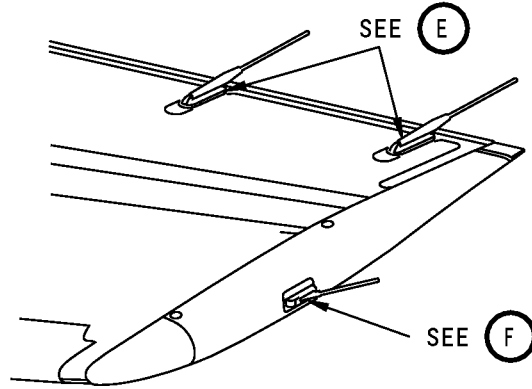
23-61-00

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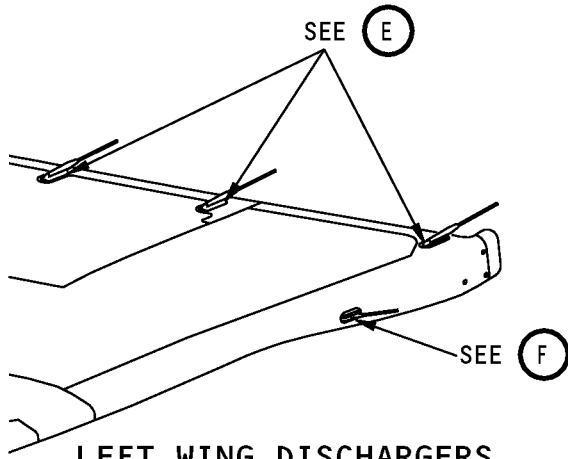
VERTICAL STABILIZER DISCHARGERS

(A)



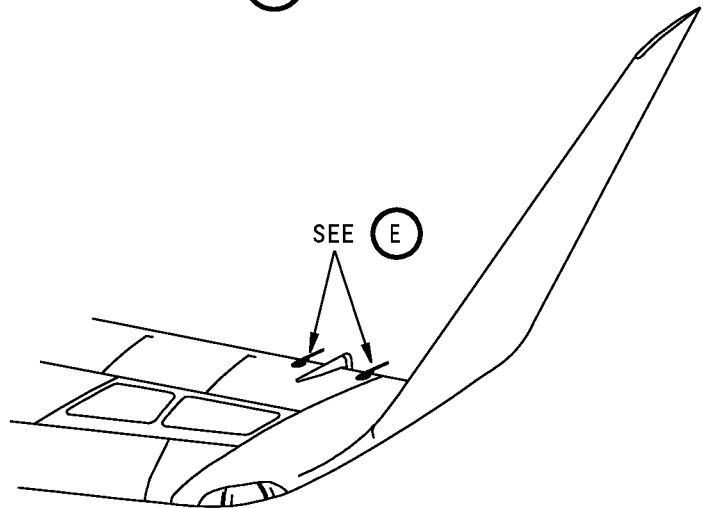
**LEFT HORIZONTAL STABILIZER DISCHARGERS
(RIGHT HORIZONTAL STABILIZER
DISCHARGERS ARE OPPOSITE)**

(B)



**LEFT WING DISCHARGERS
(RIGHT WING DISCHARGERS
ARE OPPOSITE)**

(C) 1



**LEFT WING DISCHARGERS
(RIGHT WING DISCHARGERS
ARE OPPOSITE)**

(C) 2

1 AIRPLANES WITHOUT WINGLETS

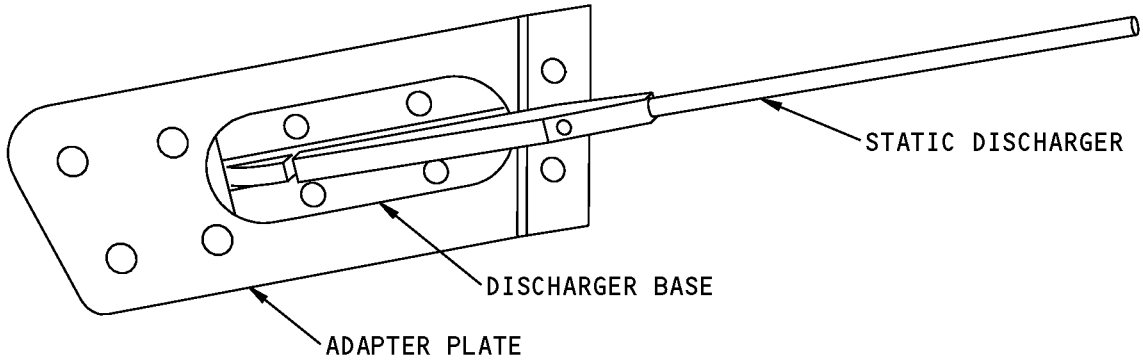
2 AIRPLANES WITH WINGLETS

**Static Discharger Inspection
Figure 601 (Sheet 2 of 3)/23-61-00-990-801**

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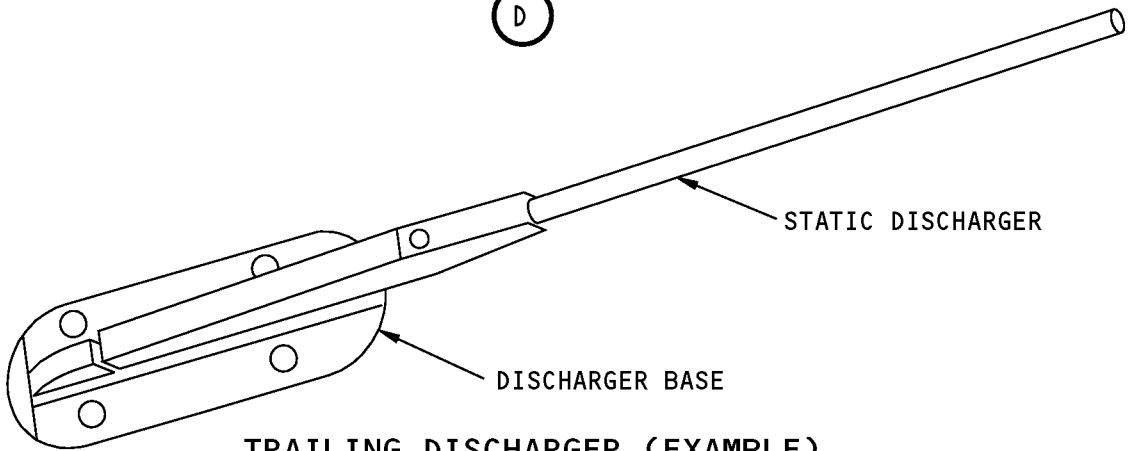
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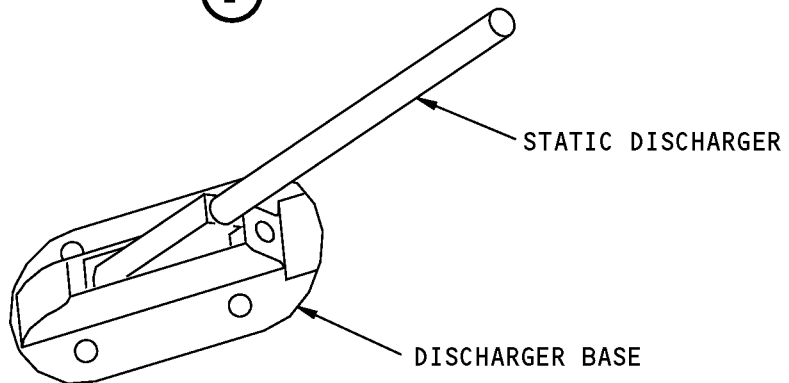
TRAILING DISCHARGER WITH ADAPTER PLATE (EXAMPLE)

D



TRAILING DISCHARGER (EXAMPLE)

E



TIP DISCHARGER (EXAMPLE)

F

**Static Discharger Inspection
Figure 601 (Sheet 3 of 3)/23-61-00-990-801**

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TASK 23-61-00-760-801

3. Static Discharger Resistance Measurement

(Figure 601)

A. General

(1) This procedure is a scheduled maintenance task.

B. References

Reference	Title
23-61-00-000-801	Static Discharger Removal (P/B 201)
23-61-00-000-802	Static Discharger Base Removal (Base Attached with Screws) (P/B 201)
23-61-00-000-803	Static Discharger Base Removal (Base Attached with Rivets) (P/B 201)
23-61-00-000-804	Static Discharger Base Removal (Adapter Plate Assembly) (P/B 201)
23-61-00-400-801	Static Discharger Installation (P/B 201)
23-61-00-400-802	Static Discharger Base Installation (With Screws) (P/B 201)
23-61-00-400-803	Static Discharger Base Installation (With Rivets) (P/B 201)
23-61-00-400-805	Static Discharger Base Installation (Adapter Plate Assembly With Rivets and Screws) (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-11-00-860-801	Remove Pressure from the Aileron Hydraulic Systems A and B (P/B 201)
27-11-00-860-802	Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal (P/B 201)
27-21-00-800-802	Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby (P/B 201)
27-21-00-840-802	Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)
51-21-99-300-802	Decorative Exterior Paint System Repair (P/B 701)
SWPM 20-20-00	Standard Wiring Practices Manual

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)
COM-1615	Megohmmeter (50 to 500 VDC/ 10 to 1090 VDC, .5 - 5,000 MEGOHM; 5MA Short Circuit Max) (Part #: 1863-9700, Supplier: 0PK96) (Part #: 1863-9700, Supplier: 62015, A/P Effectivity: 737-ALL) (Part #: 1864-9700, Supplier: 62015, A/P Effectivity: 737-ALL)

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D. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5

E. Location Zones

Zone	Area
300	Empennage
500	Left Wing
600	Right Wing

F. Procedure

SUBTASK 23-61-00-860-039

WARNING: MAKE SURE PRESSURE IS REMOVED FROM HYDRAULIC SYSTEMS. MAKE SURE HYDRAULIC POWER AND ELECTRICAL POWER ARE NOT SUPPLIED. IF HYDRAULIC PRESSURE IS PRESENT OR HYDRAULIC/ELECTRICAL POWER IS SUPPLIED, THE FLIGHT CONTROL SURFACE CAN MOVE. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (1) Remove pressure and power from the hydraulic systems for the applicable flight control surfaces: do this task: Remove Pressure from the Aileron Hydraulic Systems A and B, TASK 27-11-00-860-801
 or, do this task: Remove Pressure from the Rudder Hydraulic Systems A, B, and Standby, TASK 27-21-00-800-802
 or, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 23-61-00-860-040

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

SUBTASK 23-61-00-760-010

WARNING: DO NOT USE A MEGOHMMETER NEAR A FUEL TANK VENT. IT CAN CAUSE AN EXPLOSION OR FIRE. FIRE AND EXPLOSIONS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (3) If you must do a resistance check for a static discharger that is in a five foot diameter area around a fuel tank vent, then do the Alternative Discharger Resistance Test SUBTASK 23-61-00-760-012 SUBTASK 23-61-00-760-013.

SUBTASK 23-61-00-760-001

WARNING: USE THE PRECAUTIONS THAT FOLLOW WHEN YOU USE A MEGOHMMETER. IF YOU DO NOT USE PRECAUTIONS, THEN IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

- (4) Use these precautions for possible fuel vapors when you use a megohmmeter to measure the discharger resistance.
 - (a) Use a megohmmeter, COM-1615 or equivalent meter with a 500 VDC test voltage and a maximum 5 milliampere short circuit current.
 - (b) Do not use a megohmmeter at these locations:
 - 1) Area adjacent to or below a wing fuel tank vent, five foot (1.524 meters) diameter column, from vent to ground.
 - 2) Zero to 18 inches (457 mm) above the ground in the area around the airplane.

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- (c) Make sure that:
 - 1) Area is well ventilated.
 - 2) Metal workstands are grounded.
 - 3) Megohmmeter is plugged into a grounded receptacle.
 - 4) Megohmmeter is insulated from metal work stand.

SUBTASK 23-61-00-760-009

- (5) FOR DAYTON-GRANGER AND OTHER STATIC DISCHARGERS NOT SUPPLIED BY CHELTON:
Use a megohmmeter to measure the resistance between the discharger tip and the discharger base.

- (a) Set the megohmmeter to 500 VDC test voltage.
- (b) Make a good surface bond with the end of the static discharger:

NOTE: A good connection between the discharger end and the megohmmeter is necessary for a correct resistance value.

- 1) Use water to make a cotton wiper, G00034 wet.
- 2) Make sure that the full end of the discharger touches the wet cotton wiper, G00034.
- (c) Put one lead of the megohmmeter on the discharger base.
- (d) Put the other lead of the megohmmeter on the wet cotton wiper, G00034.
- (e) Measure the resistance value.
- (f) Make sure that the resistance value is in a range of 6-100 megohms for dischargers.

NOTE: If the measured value is too high, add water to the wet material and then measure the resistance value again.

- (g) For a discharger that does not agree with the correct resistance value, replace the discharger.

These are the tasks:

Static Discharger Removal, TASK 23-61-00-000-801,

Static Discharger Installation, TASK 23-61-00-400-801.

SUBTASK 23-61-00-760-011

- (6) FOR CHELTON SUPPLIED STATIC DISCHARGERS ONLY:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) Set the megohmmeter to 500 VDC test voltage.
- (b) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (c) To make a good connection with the end of the discharger tip, use a wet material.
- (d) Put the wet material on the END of the discharger tip.

NOTE: DO NOT WRAP the wet material around the discharger tip of Chelton static dischargers. This can give incorrect resistance values that cause unnecessary removals of serviceable static dischargers. Put the wet material between the tip of the discharger and the megohmmeter probe

- (e) Put one megohmmeter probe on the base and one probe on the wet material at the end of the discharger tip. See On Wing Discharger Resistance Test Detail I Figure 602
 - 1) Make sure that the measured resistance is between 6-100 megohms.

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- 2) If the resistance is more than 6-100 megohms, remove the wet material and put megohmmeter probe directly on the tip of the discharger core material.
- (f) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

SUBTASK 23-61-00-760-012

(7) ALTERNATIVE DISCHARGER RESISTANCE TEST FOR DAYTON-GRANGER AND OTHER STATIC DISCHARGERS NOT SUPPLIED BY CHELTON:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) Set the megohmmeter to 500 VDC test voltage.
- (b) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (c) To make a good connection with the end of the discharger tip, use a wet paper towel, cotton cloth or a sponge.
- (d) Put the wet towel on the end of the discharger tip.
- (e) Put the megohmmeter connectors on the base and on the wet towel at the end of the tip.
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - 2) If the resistance measured is high, make sure that the meter lead and the end of the discharger tip touch the wet towel.
- (f) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

SUBTASK 23-61-00-760-013

(8) ALTERNATIVE DISCHARGER RESISTANCE TEST FOR CHELTON SUPPLIED STATIC DISCHARGERS ONLY:

Use a megohmmeter to measure the resistance between the discharger tip and the discharger base:

- (a) Set the megohmmeter to 500 VDC test voltage.
- (b) A good electrical bond between the end of the discharger tip and the megohmmeter is necessary for a correct measure of resistance.
- (c) To make a good connection with the end of the discharger tip, use a wet material.
- (d) Put the wet material on the END of the discharger tip.

NOTE: DO NOT WRAP the wet material around the discharger tip of Chelton static dischargers. This can give incorrect resistance values that cause unnecessary removals of serviceable static dischargers. Put the wet material between the tip of the discharger and the megohmmeter probe

- (e) Put one megohmmeter probe on the base and one probe on the edge of the wet material at the end of the discharger tip. See Alternate (Off Wing) Discharger Resistance Test Detail II Figure 602
 - 1) Make sure that the measured resistance is between 6-100 megohms.
 - 2) If the resistance is more than 6-100 megohms, remove the wet material and put megohmmeter probe directly on the tip of the discharger core material.
- (f) Add more water if it is necessary and measure again.
 - 1) Use the lowest measured value.

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SUBTASK 23-61-00-760-002

(9) Use Method 1 or Method 2 to do a check of the electrical bond between the discharger bases and the airplane surface:

(a) Method 1 - Measure the bond resistance from the discharger base to its mounting surface.

NOTE: It may be necessary to scratch the paint on the mounting surface to get a good connection.

WARNING: MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

1) Use a bonding meter, COM-1550 to measure the bond between the discharger base and the airplane surface (SWPM 20-20-00).

NOTE: This resistance value is for an in-service discharger. There is a different value for a new installed discharger base.

2) Put one lead on the discharger base.

3) Put the other lead on the airplane surface.

4) Make sure that the two leads touch bare metal. If it is necessary, remove a small quantity of paint or use a sharp probe to go into the paint.

5) Make sure the resistance value for a in-service discharger base is not more than:

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs. Take the resistance measurement between the discharger base and the discharger mounting surface.

a) 0.05 ohms for the discharger base installed on the metal panels.

b) 0.5 ohms for the discharger base installed on an aluminum flame spray on top of the fiberglass laminate or the composite panels.

c) 0.5 ohms for the discharger base installed on an aluminum-covered fabric.

d) 5.0 ohms for the discharger base installed on a composite panels that do not have an aluminum layer.

(b) Method 2 - Measure the bond resistance between two adjacent discharger bases.

WARNING: MAKE SURE THAT THE OHMMETER IS RESISTANT TO EXPLOSION. IF NOT, IT IS POSSIBLE THAT AN EXPLOSION OR FIRE CAN OCCUR.

1) FOR METALLIC SHANK STATIC DISCHARGERS ONLY:

Use a bonding meter, COM-1550, (SWPM 20-20-00) to measure the resistance between the discharger shank and the discharger base.

FOR PLASTIC SHANK STATIC DISCHARGERS ONLY:

Use a bonding meter, COM-1550, (SWPM 20-20-00) to measure the resistance between the set screw in the discharger shank and the discharger base.

NOTE: This resistance value is for an in-service discharger. There is a different value for a new installed discharger base.

2) Make sure that the two leads touch bare metal. If it is necessary, remove a small quantity of paint or use a sharp probe to go into the paint.

3) Make sure the resistance for a used discharger is not more than:

NOTE: A resistance of more than these values can cause damage if a lightning strike occurs. Take the resistance measurement between two discharger bases.

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- a) 0.10 ohms for the discharger base installed on the metal panels.
 - b) 1.0 ohm for the discharger base installed on an aluminum flame spray on top of the fiberglass laminate or the composite panels.
 - c) 1.0 ohm for the discharger base installed on an aluminum-covered fabric.
 - d) 10.0 ohms for the discharger base installed on a composite panels that do not have an aluminum layer.
- (c) For a discharger base that does not agree with the correct resistance value, replace the discharger base:
- 1) For a discharger base attached with screws,
These are the tasks:
Static Discharger Base Removal (Base Attached with Screws),
TASK 23-61-00-000-802,
Static Discharger Base Installation (With Screws), TASK 23-61-00-400-802.
 - 2) For a discharger base attached with rivets,
These are the tasks:
Static Discharger Base Removal (Base Attached with Rivets),
TASK 23-61-00-000-803,
Static Discharger Base Installation (With Rivets), TASK 23-61-00-400-803.
 - 3) For a discharger adapter plate assembly attached with rivets and screws,
These are the tasks:
Static Discharger Base Removal (Adapter Plate Assembly), TASK 23-61-00-000-804,
Static Discharger Base Installation (Adapter Plate Assembly With Rivets and Screws), TASK 23-61-00-400-805.
- (d) To paint the area where the paint was removed for the surface resistance test, do this task:
Decorative Exterior Paint System Repair, TASK 51-21-99-300-802.

SUBTASK 23-61-00-010-011

- (10) If it is necessary, put the hydraulic systems back to the usual condition: do this task: Put the Aileron Hydraulic Systems A and B Back to the Condition Before Pressure Removal, TASK 27-11-00-860-802
- or, do this task: Put the Rudder Systems A, B, and Standby Back to the Condition Before the Pressure Removal, TASK 27-21-00-840-802
- or, do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

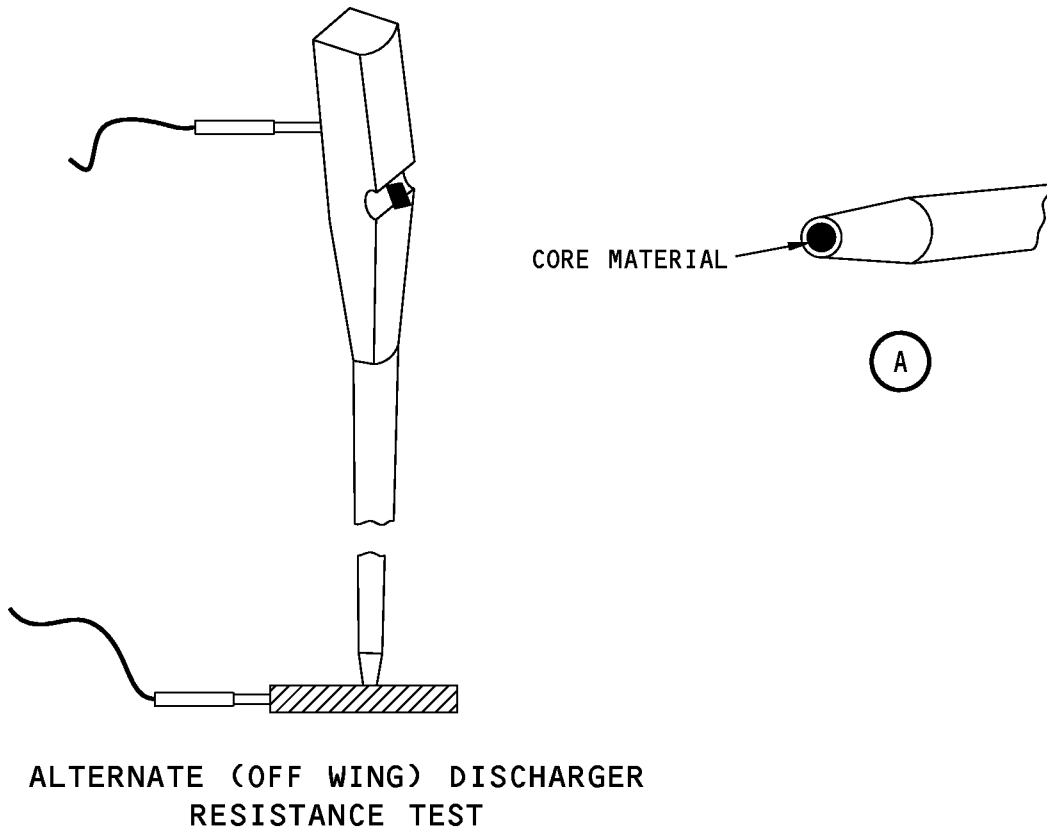
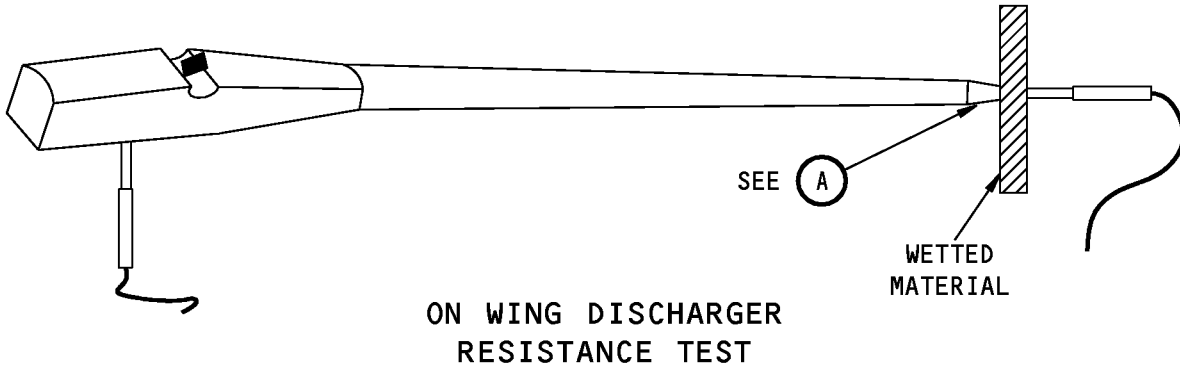
————— END OF TASK —————

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NOTE: TEST PROCEDURES FOR THE TRAILING EDGE
AND WING TIP DISCHARGERS ARE THE SAME.

**Chelton Static Discharger Resistance Test
Figure 602/23-61-00-990-803**

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VOICE RECORDER (VR) SYSTEM - ADJUSTMENT/TEST

1. General

- A. This procedure contains scheduled maintenance task data.
B. This procedure has these tasks for the voice recorder system:
(1) An operational test
(2) A system test.

TASK 23-71-00-710-801

2. Voice Recorder System - Operational Test

- A. General
(1) This procedure is a scheduled maintenance task.
B. References

Table with 2 columns: Reference, Title. Rows include 23-51-00-710-801 (Flight Interphone System - Operational Test), 24-22-00-860-811 (Supply Electrical Power), and 24-22-00-860-812 (Remove Electrical Power).

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Table with 2 columns: Reference, Description. Row for COM-1614 lists interphone boom/mic/headset for ground crew with multiple part numbers and suppliers.

D. Location Zones

Table with 2 columns: Zone, Area. Rows for 142 (Aft Cargo Compartment - Right) and 212 (Flight Compartment - Right).

E. Prepare for the Test

- SUBTASK 23-71-00-860-001
(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.
SUBTASK 23-71-00-760-001
(2) Make sure that the Flight Interphone System is serviceable (TASK 23-51-00-710-801).
SUBTASK 23-71-00-420-001
(3) Connect a interphone, COM-1614 to the voice recorder control panel at the pilot's overhead panel, P5.
SUBTASK 23-71-00-860-003
(4) Set the Audio Control Panel volume switches to the off position.

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SUBTASK 23-71-00-860-004

(5) Set the CVR AUTO/ON switch (P5) to the ON position.

NOTE: Both engines must be off for at least five minutes.

- (a) Make sure that the CVR AUTO/ON switch stays in the ON position.
- (b) Make sure that you can hear flight deck conversation in the headset.

F. Operational Test

SUBTASK 23-71-00-700-001

(1) Do the Operational Test as follows:

- (a) Push the TEST switch on the voice recorder control panel for approximately one half second.
 - 1) Make sure that you hear a tone in the interphone, COM-1614.
 - 2) Make sure that the STATUS light comes on once.

G. Put the Airplane Back to the Usual Condition

SUBTASK 23-71-00-080-002

(1) Remove the interphone, COM-1614 from the voice recorder control panel.

SUBTASK 23-71-00-730-002

(2) Make sure that the CVR AUTO/ON switch (P5) is set to the AUTO position.

SUBTASK 23-71-00-860-010

(3) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

TASK 23-71-00-730-801

3. Voice Recorder System - System Test

A. General

(1) This procedure is a scheduled maintenance task.

B. References

Reference	Title
23-51-00-710-801	Flight Interphone System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

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Reference	Description
COM-1614	Interphone - Boom, Mic/Headset for Ground Crew (Part #: 460A, Supplier: 79687, A/P Effectivity: 737-ALL) (Part #: 684-0000-003, Supplier: 9N770, A/P Effectivity: 737-ALL) (Part #: 684-6000-001, Supplier: 0NEN1, A/P Effectivity: 737-ALL) (Part #: 780-1000-001, Supplier: 78711, A/P Effectivity: 737-ALL) (Part #: 780-1000-003, Supplier: 78711, A/P Effectivity: 737-ALL) (Part #: H3310, Supplier: 71483, A/P Effectivity: 737-ALL) (Part #: H3312, Supplier: 71483, A/P Effectivity: 737-ALL) (Opt Part #: 462A, Supplier: 79687, A/P Effectivity: 737-ALL)

D. Location Zones

Zone	Area
142	Aft Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

E. Prepare for the Test

SUBTASK 23-71-00-760-002

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-71-00-760-003

- (2) Make sure that the Flight Interphone System is serviceable (TASK 23-51-00-710-801).

SUBTASK 23-71-00-480-001

- (3) Connect a interphone, COM-1614 to the voice recorder control panel at the pilot's overhead panel, P5.

SUBTASK 23-71-00-860-008

- (4) Set the Audio Control Panel volume switches to the off position.

F. System Test

SUBTASK 23-71-00-420-002

- (1) Do the System Test as follows:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1

- (b) Set the left engine start lever to the IDLE position.

- 1) Make sure that the right engine start lever is in the CUTOFF position.

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2) Wait approximately five minutes.

NOTE: The CDS will toggle the engine running relay five minutes after the start lever is placed in the IDLE position.

3) Make sure that you can hear flight deck conversation in the headset.

(c) Push the TEST switch on the voice recorder control panel for approximately one half second.

1) Make sure that you hear a tone in the interphone, COM-1614.

2) Make sure that the STATUS light comes on once.

(d) Set the left engine start lever to the CUTOFF position.

1) Wait approximately five minutes.

NOTE: The voice recorder will continue to operate for five minutes after both engines have stopped running, or engine running simulation has been discontinued.

2) Make sure that you cannot hear flight deck conversation in the headset.

(e) Set the right engine start lever to the IDLE position.

1) Wait approximately five minutes.

NOTE: The CDS will toggle the engine running relay five minutes after the start lever is placed in the IDLE position.

2) Make sure that you can hear flight deck conversation in the headset.

(f) Push the TEST switch on the voice recorder control panel for approximately one half second.

1) Make sure that you hear a tone in the interphone, COM-1614.

2) Make sure that the STATUS light comes on once.

(g) Do these steps:

1) Make sure that the two engine start levers are set to the CUTOFF position.

a) Wait approximately five minutes.

2) Make sure that you cannot hear flight deck conversation in the headset.

3) Set the CVR AUTO/ON switch (P5) to the ON position.

NOTE: Both engines must be off for at least five minutes.

a) Make sure that the CVR AUTO/ON switch stays in the ON position.

b) Make sure that you can hear flight deck conversation in the headset.

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

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

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F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1

SUBTASK 23-71-00-700-003

(2) Do the System Test as follows:

(a) Push the TEST switch on the voice recorder control panel for approximately one half second.

- 1) Make sure that you hear a tone in the interphone, COM-1614.
- 2) Make sure that the STATUS light comes on once.

(b) Speak in a usual voice.

NOTE: Keep 3 to 4 feet (1 meter) away from the area microphone for the voice recorder.

- 1) After you speak, make sure that you hear your voice immediately in the interphone, COM-1614.

(c) Put a cover on the area microphone for the voice recorder.

(d) Connect a different boom microphone headset to the captain's jack panel.

(e) If the captain's audio control panel (ACP) has a BOOM microphone switch, then make sure it is set to the BOOM position.

(f) Speak into the boom microphone.

- 1) After you speak, make sure that you hear your voice immediately in the interphone, COM-1614.

(g) Remove the boom microphone headset from the captain's jack panel.

(h) Connect the boom microphone headset to the first officer's jack panel.

(i) If the first officer's ACP has a BOOM microphone switch, then make sure it is set to the BOOM position.

(j) Speak into the boom microphone.

- 1) After you speak, make sure that you hear your voice immediately in the interphone, COM-1614.

(k) Remove the boom microphone headset from the first officer's jack panel.

(l) Connect the boom microphone headset or a hand mic and headphone, as applicable, to the first observer's jack panel.

(m) If the first observer's ACP has a BOOM microphone switch, then make sure it is set to the BOOM position.

(n) Speak into the boom microphone or hand mic.

- 1) After you speak, make sure that you hear your voice immediately in the interphone, COM-1614.

(o) Remove the boom microphone headset or hand mic and headphone from the first observer's jack panel.

(p) Remove the cover from the area microphone for the voice recorder.

(q) Speak in a usual voice.

NOTE: Keep 3 to 4 feet (1 meter) away from the area microphone for the voice recorder.

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- 1) After you speak, make sure that you hear your voice immediately in the interphone, COM-1614.

SUBTASK 23-71-00-730-005

(3) Do the Bulk Erase Test as follows:

- (a) Make sure that the airplane tires have chocks installed around them.
- (b) Release the parking brake.
- (c) Push and hold (more than 2 seconds) the ERASE switch on the voice recorder control panel.
- (d) Make sure that you do not hear a tone in the interphone, COM-1614.
- (e) Set the parking brake.
- (f) Do the PSEU BITE procedure to put the No. 1 air/ground system in air mode. To do the BITE procedure, do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.
- (g) Push and hold (more than 2 seconds) the ERASE switch on the voice recorder control panel.
- (h) Make sure that you do not hear a tone in the interphone, COM-1614.
- (i) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.
- (j) Push and hold (more than 2 seconds) the ERASE switch on the voice recorder control panel.
 - 1) Make sure that you hear a tone in the interphone, COM-1614.

G. Put the Airplane Back to the Usual Condition

SUBTASK 23-71-00-020-003

- (1) Remove the interphone, COM-1614 from the voice recorder control panel.

SUBTASK 23-71-00-730-001

- (2) Make sure that the CVR AUTO/ON switch (P5) is set to the AUTO position.

SUBTASK 23-71-00-860-009

- (3) Make sure that the two engine start levers are set to the CUTOFF position.

SUBTASK 23-71-00-860-002

- (4) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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VOICE RECORDER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the voice recorder
- (2) An installation of the voice recorder.

B. The voice recorder is installed in the voice recorder rack in the aft cargo compartment.

TASK 23-71-11-000-801

2. Voice Recorder Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
23-71-21-000-801	Underwater Locator Beacon (ULB) Removal (P/B 201)

B. Location Zones

Zone	Area
142	Aft Cargo Compartment - Right

C. Removal Procedure

SUBTASK 23-71-11-860-001

- (1) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	7	C00107	VOICE RCDR

SUBTASK 23-71-11-010-001

- (2) Open the access door on the voice recorder rack to get access to the VOICE RECORDER [1].

SUBTASK 23-71-11-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VOICE RECORDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VOICE RECORDER.

- (3) To remove the VOICE RECORDER [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

SUBTASK 23-71-11-020-002

- (4) Remove the underwater locator beacon (ULB) from the VOICE RECORDER [1] if the replacement VOICE RECORDER [1] does not have a ULB installed, do this task: Underwater Locator Beacon (ULB) Removal, TASK 23-71-21-000-801.

————— **END OF TASK** —————

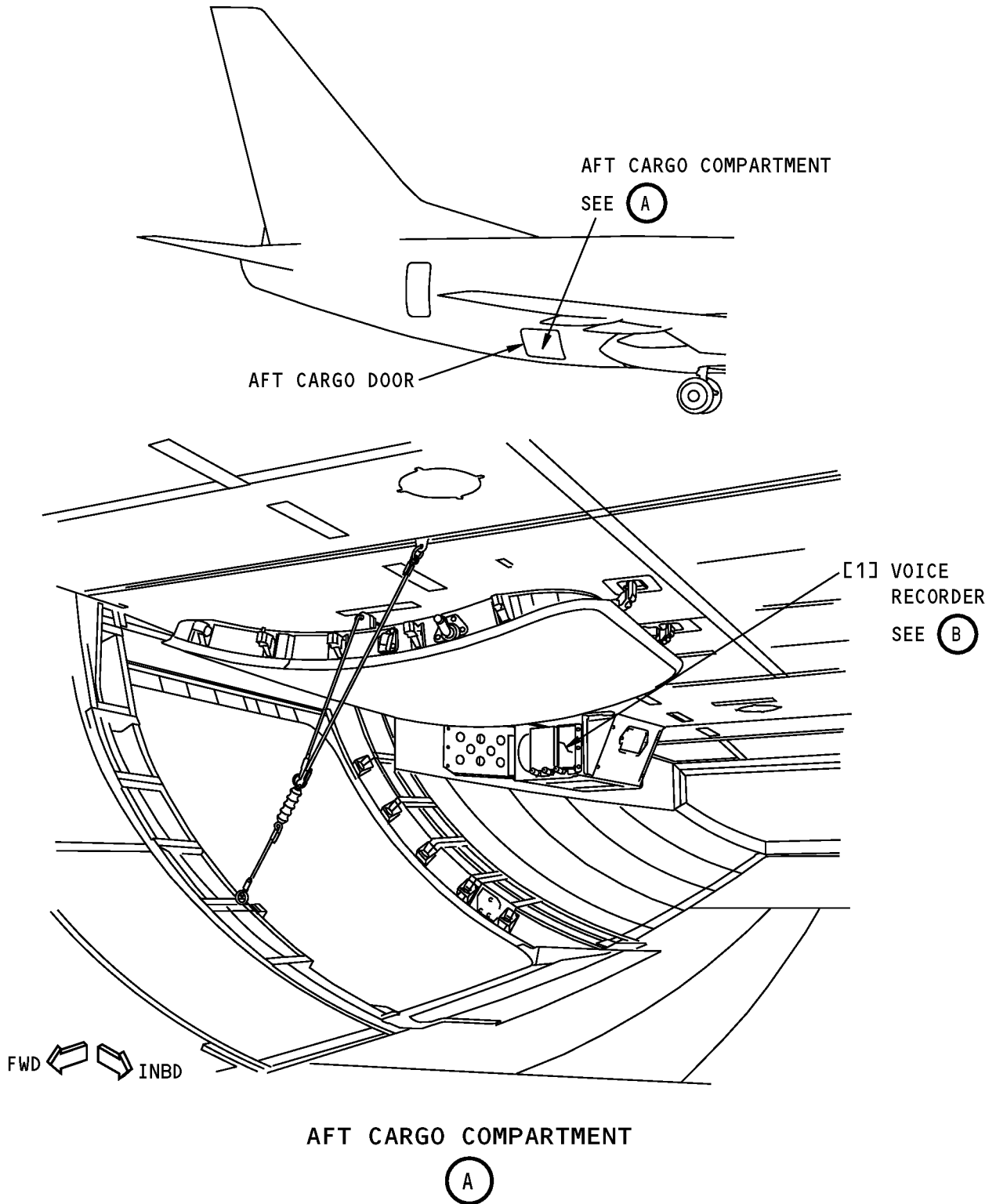
EFFECTIVITY HAP ALL

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**Voice Recorder Installation
Figure 401 (Sheet 1 of 3)/23-71-11-990-801**

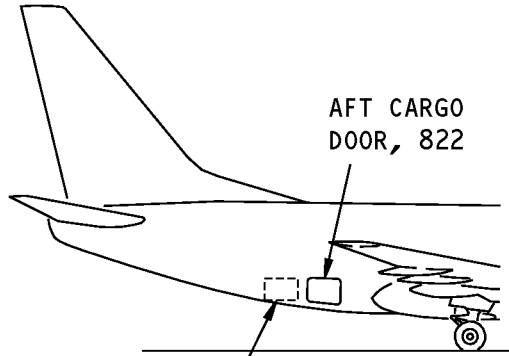
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HAP 001-013, 015-026, 028-054

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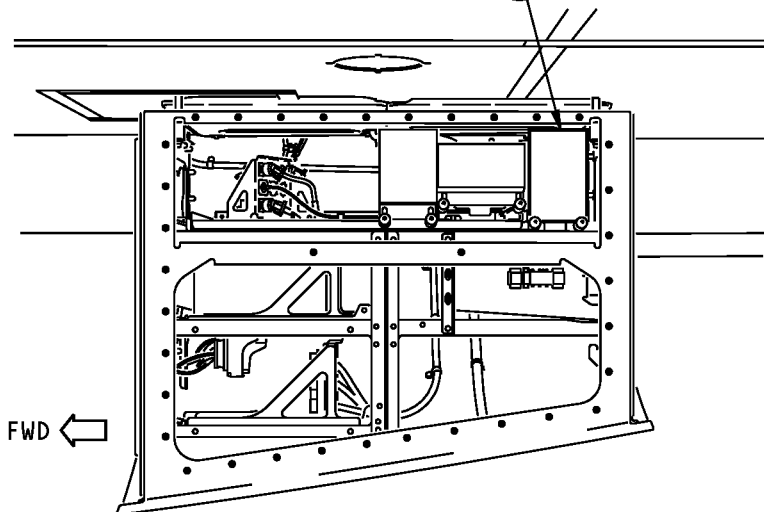


ELECTRONIC
EQUIPMENT
RACK, E6

SEE (A)

[1] VOICE RECORDER
(E6-1)

SEE (B)



ELECTRONIC EQUIPMENT RACK, E6
(ACCESS PANEL REMOVED)

(A)

**Voice Recorder Installation
Figure 401 (Sheet 2 of 3)/23-71-11-990-801**

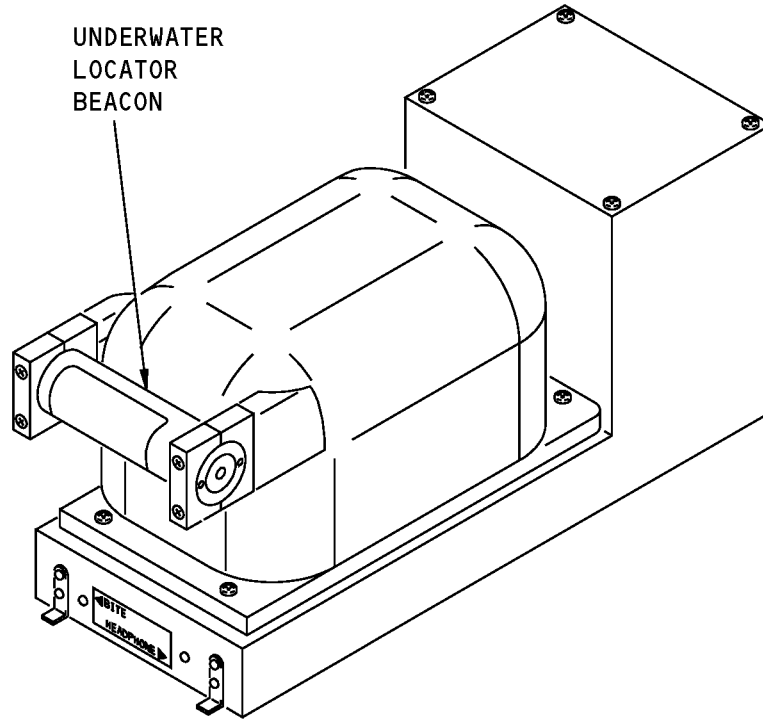
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VOICE RECORDER

B

**Voice Recorder Installation
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TASK 23-71-11-400-801

3. Voice Recorder Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
23-71-21-400-801	Underwater Locator Beacon (ULB) Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1614	Interphone - Boom, Mic/Headset for Ground Crew (Part #: 460A, Supplier: 79687, A/P Effectivity: 737-ALL) (Part #: 684-0000-003, Supplier: 9N770, A/P Effectivity: 737-ALL) (Part #: 684-6000-001, Supplier: 0NEN1, A/P Effectivity: 737-ALL) (Part #: 780-1000-001, Supplier: 78711, A/P Effectivity: 737-ALL) (Part #: 780-1000-003, Supplier: 78711, A/P Effectivity: 737-ALL) (Part #: H3310, Supplier: 71483, A/P Effectivity: 737-ALL) (Part #: H3312, Supplier: 71483, A/P Effectivity: 737-ALL) (Opt Part #: 462A, Supplier: 79687, A/P Effectivity: 737-ALL)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	VOICE RECORDER	23-71-11-01-005	HAP 001-013, 015-026, 028-030
		23-71-11-03-005	HAP 031-054, 101-999

D. Location Zones

Zone	Area
142	Aft Cargo Compartment - Right

E. Installation Procedure

SUBTASK 23-71-11-420-001

- (1) Install an underwater locator beacon (ULB) if the VOICE RECORDER [1] does not have a ULB installed, do this task: Underwater Locator Beacon (ULB) Installation, TASK 23-71-21-400-801.

SUBTASK 23-71-11-860-002

- (2) Make sure that this circuit breaker is open and has safety tag:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	7	C00107	VOICE RCDR

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SUBTASK 23-71-11-420-002

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VOICE RECORDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VOICE RECORDER.

(3) To install the VOICE RECORDER [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-71-11-410-001

(4) Close the access door on the voice recorder rack.

SUBTASK 23-71-11-860-003

(5) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	7	C00107	VOICE RCDR

F. Installation Test

SUBTASK 23-71-11-860-004

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-71-11-420-003

(2) Connect a interphone, COM-1614 to the voice recorder control panel, P5.

SUBTASK 23-71-11-860-006

(3) Set the Audio Control Panel volume switches to the off position.

SUBTASK 23-71-11-710-003

(4) Do the Voice Recorder Auto On/Off test as follows:

(a) Set one of the two engine start levers to the IDLE position.

1) Wait approximately five minutes.

NOTE: The CDS will toggle the engine running relay five minutes after the start lever is placed in the IDLE position.

(b) Make sure that you can hear flight deck conversation in the headset.

SUBTASK 23-71-11-710-007

(5) Push the TEST switch on the voice recorder control panel for approximately one half second.

(a) Make sure that you hear a tone in the interphone, COM-1614.

(b) Make sure that the STATUS light comes on once.

SUBTASK 23-71-11-020-003

(6) Remove the interphone, COM-1614 from the voice recorder control panel.

SUBTASK 23-71-11-710-004

(7) Make sure that the two engine start levers are set to the CUTOFF position.

SUBTASK 23-71-11-860-005

(8) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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VOICE RECORDER CONTROL PANEL - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) A removal of the voice recorder control panel.
- (2) An installation of the voice recorder control panel.

B. The voice recorder control panel is installed in the pilot's overhead panel P5.

TASK 23-71-12-000-801

2. Voice Recorder Control Panel Removal

(Figure 401)

A. Location Zones

<u>Zone</u>	<u>Area</u>
212	Flight Compartment - Right

B. Removal Procedure

SUBTASK 23-71-12-860-001

(1) Open this circuit breaker and install safety tag:

CAPT Electrical System Panel, P18-2

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	7	C00107	VOICE RCDR

SUBTASK 23-71-12-000-001

(2) Remove the voice recorder control panel [1]:

- (a) Loosen the quarter-turn fasteners [2] on the voice recorder control panel [1].
- (b) Remove the voice recorder control panel [1] to get access to the connector [3].
- (c) Disconnect the electrical connector [3] from the voice recorder control panel [1].
- (d) Put a protective cover on the electrical connector.

END OF TASK

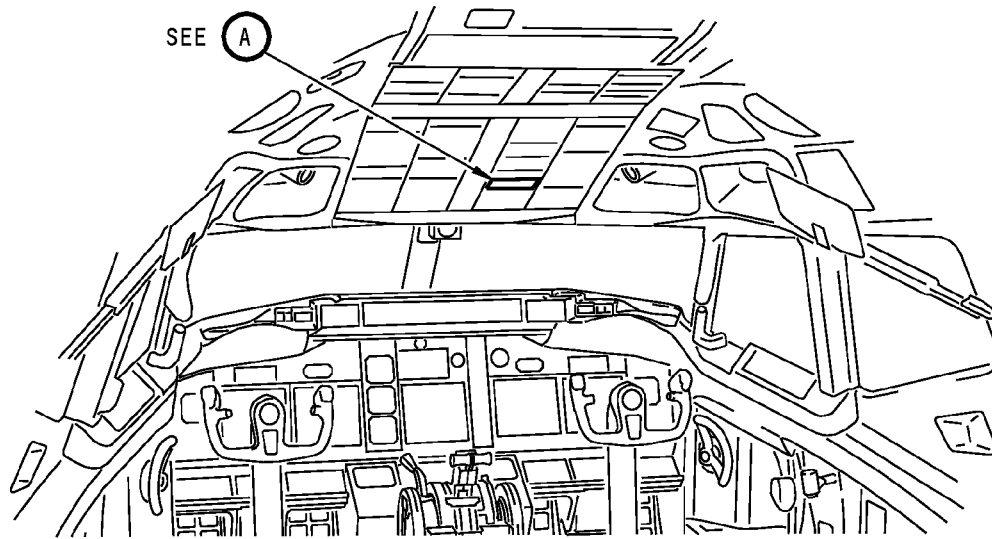
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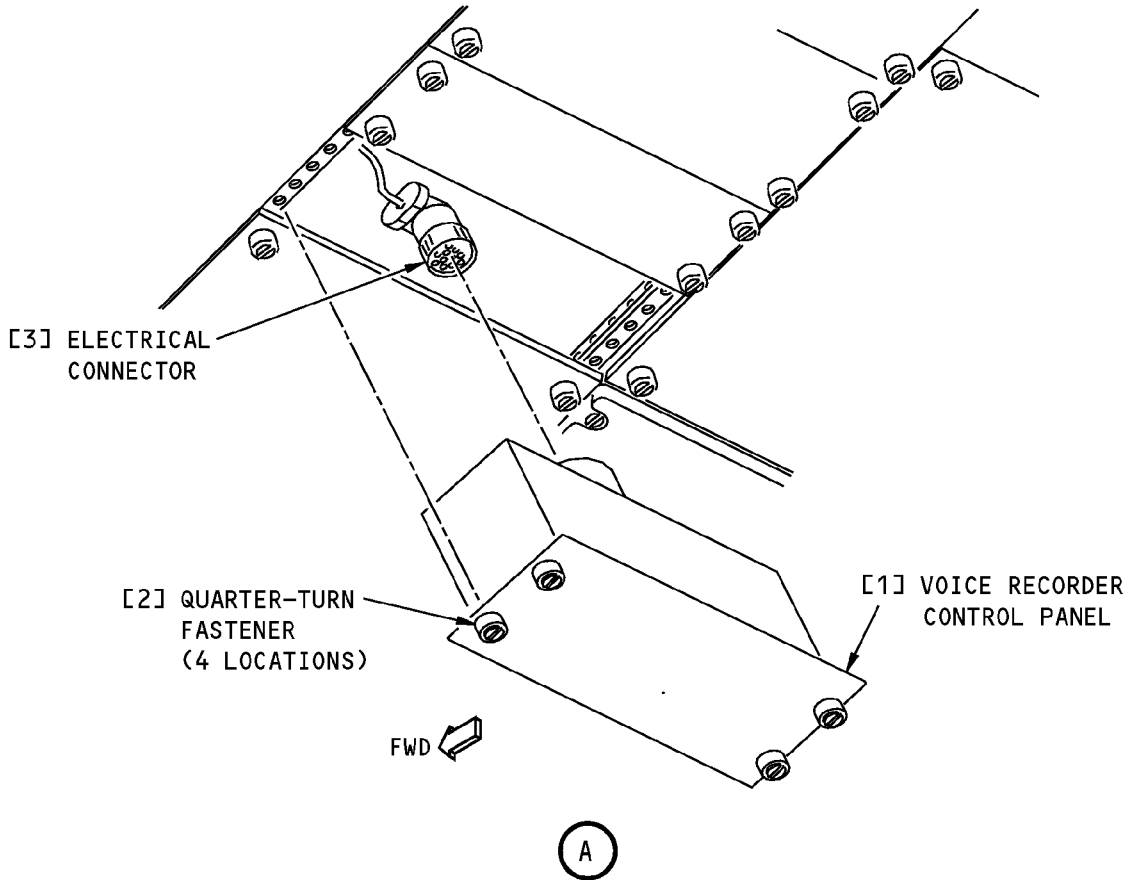
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FLIGHT COMPARTMENT



**Voice Recorder Control Panel Installation
Figure 401/23-71-12-990-801**

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TASK 23-71-12-400-801

3. Voice Recorder Control Panel Installation

(Figure 401)

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1614	Interphone - Boom, Mic/Headset for Ground Crew (Part #: 460A, Supplier: 79687, A/P Effectivity: 737-ALL) (Part #: 684-0000-003, Supplier: 9N770, A/P Effectivity: 737-ALL) (Part #: 684-6000-001, Supplier: 0NEN1, A/P Effectivity: 737-ALL) (Part #: 780-1000-001, Supplier: 78711, A/P Effectivity: 737-ALL) (Part #: 780-1000-003, Supplier: 78711, A/P Effectivity: 737-ALL) (Part #: H3310, Supplier: 71483, A/P Effectivity: 737-ALL) (Part #: H3312, Supplier: 71483, A/P Effectivity: 737-ALL) (Opt Part #: 462A, Supplier: 79687, A/P Effectivity: 737-ALL)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Panel	23-71-12-01-050	HAP 001-013, 015-026, 028
		23-71-12-03-020	HAP 029-054, 101-999
		31-11-94-04X-505	HAP 101-999
		31-11-94-07Q-255	HAP 037, 039-054
		31-11-94-12-255	HAP 031-036, 038
		31-11-94-12K-505	HAP 029, 030
		31-11-94-52A-530	HAP 001-013, 015-026, 028

D. Location Zones

Zone	Area
212	Flight Compartment - Right

E. Installation Procedure

SUBTASK 23-71-12-860-002

- (1) Make sure that this circuit breaker is open and has safety tag:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	7	C00107	VOICE RCDR

SUBTASK 23-71-12-400-001

- (2) Install the voice recorder control panel [1]:

- (a) Remove the protective cover from the electrical connector.

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- (b) Examine the electrical connectors for bent or broken pins, dirt, and damage.
(c) Connect the electrical connector [3] to the voice recorder control panel [1].
(d) Install the voice recorder control panel [1].
(e) Tighten the quarter-turn fasteners [2] on the voice recorder control panel [1].

SUBTASK 23-71-12-860-003

(3) Remove the safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

Table with 4 columns: Row, Col, Number, Name. Row D, Col 7, Number C00107, Name VOICE RCDR

F. Installation Test

SUBTASK 23-71-12-760-001

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

SUBTASK 23-71-12-580-001

(2) Set the parking brake.

SUBTASK 23-71-12-420-001

(3) Connect a interphone, COM-1614 to the voice recorder control panel [1], at P5.

SUBTASK 23-71-12-860-005

(4) Set the Audio Control Panel volume switches to the off position.

SUBTASK 23-71-12-710-001

(5) Do the Voice Recorder Auto On/Off test as follows:

- (a) Set one of the two engine start levers to the IDLE position.
1) Wait approximately five minutes.

NOTE: The CDS will toggle the engine running relay five minutes after the start lever is placed in the IDLE position.

(b) Make sure that you can hear flight deck conversation in the headset.

SUBTASK 23-71-12-710-006

(6) Push the TEST switch on the voice recorder control panel for approximately one half second.

- (a) Make sure that you hear a tone in the interphone, COM-1614.
(b) Make sure that the STATUS light comes on once.

SUBTASK 23-71-12-730-002

(7) Push the ERASE switch on the voice recorder control panel [1] for at least one half second.

- (a) Make sure that you hear a tone in the interphone, COM-1614 until you release the ERASE switch.

SUBTASK 23-71-12-020-001

(8) Remove the interphone, COM-1614 from the voice recorder control panel [1].

SUBTASK 23-71-12-710-002

(9) Make sure that the two engine start levers are set to the CUTOFF position.

SUBTASK 23-71-12-860-004

(10) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

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UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES

1. General

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
 - (1) A removal of the the underwater locator beacon (ULB).
 - (2) A replacement of the ULB battery.
 - (3) A test of the ULB.
 - (4) An installation of the ULB.
- C. The underwater locator beacon (ULB) is attached to the front of the voice recorder. The voice recorder is located in the voice recorder rack at the aft cargo compartment.

TASK 23-71-21-000-801

2. Underwater Locator Beacon (ULB) Removal

(Figure 201)

A. General

- (1) This procedure is a scheduled maintenance task.
- (2) The ULB [4] has a battery as the power source. The ULB [4] has no external electrical connections.

B. References

Reference	Title
23-71-11-000-801	Voice Recorder Removal (P/B 401)

C. Location Zones

Zone	Area
142	Aft Cargo Compartment - Right

D. Removal Procedure

SUBTASK 23-71-21-020-001

- (1) Do this task: Voice Recorder Removal, TASK 23-71-11-000-801.

SUBTASK 23-71-21-020-003

- (2) Remove the ULB [4] from the voice recorder:
 - (a) Loosen the four screws [1] that hold the ULB [4].
 - (b) Remove the two screws [1] and the clamp from one end of the ULB.
 - (c) Remove the ULB [4].
 - (d) Keep the screws [1] and the clamp.

————— **END OF TASK** —————

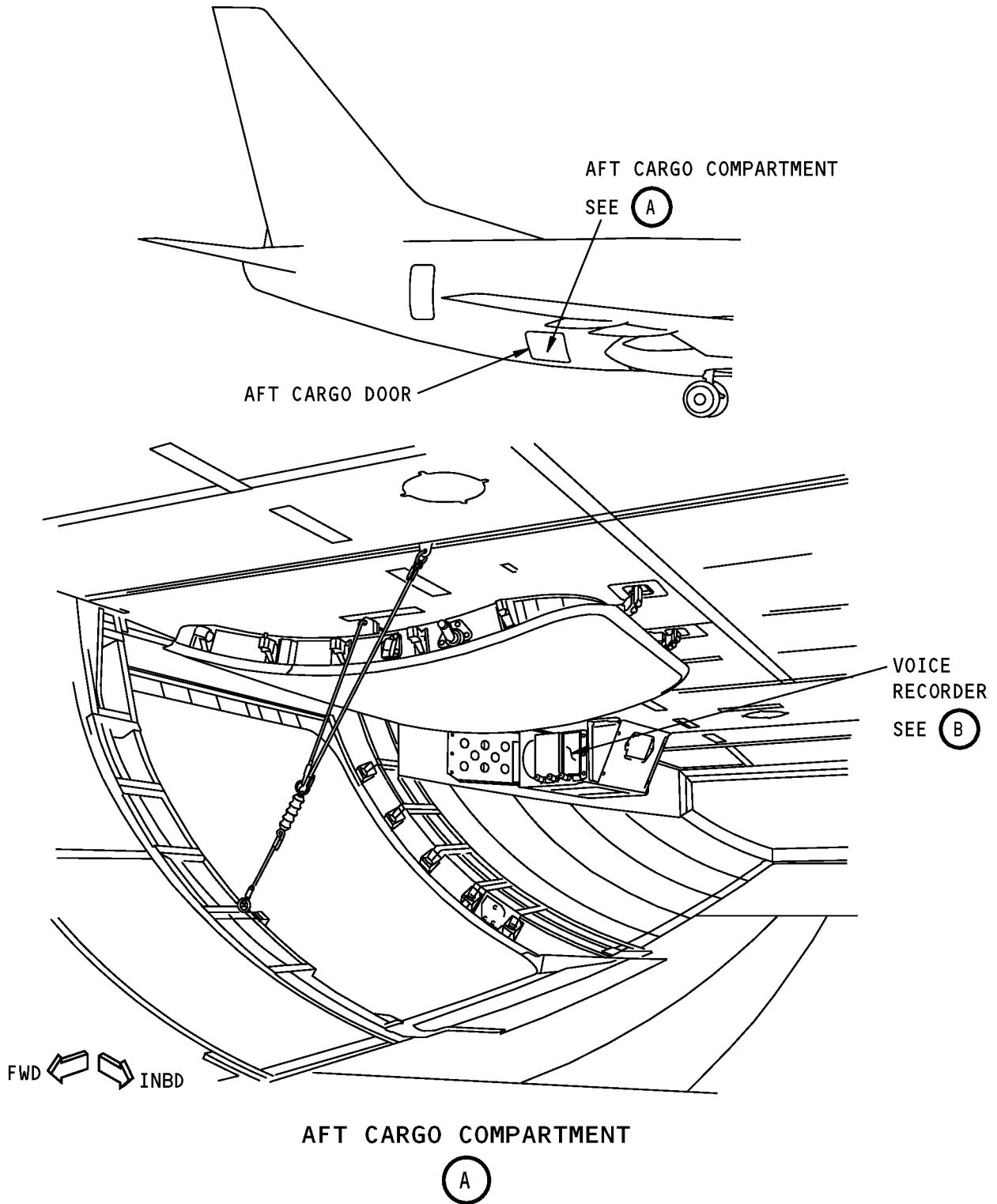
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**Underwater Locator Beacon Installation
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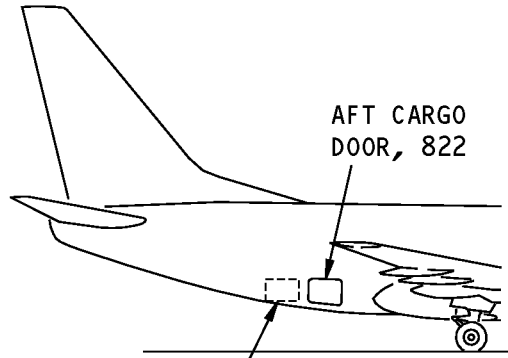
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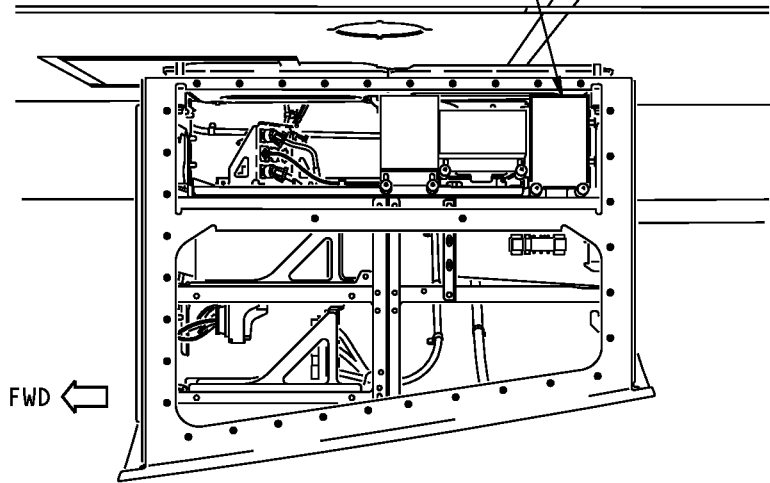


ELECTRONIC EQUIPMENT RACK, E6

SEE (A)

VOICE RECORDER (E6-1)

SEE (B)



ELECTRONIC EQUIPMENT RACK, E6
(ACCESS PANEL REMOVED)

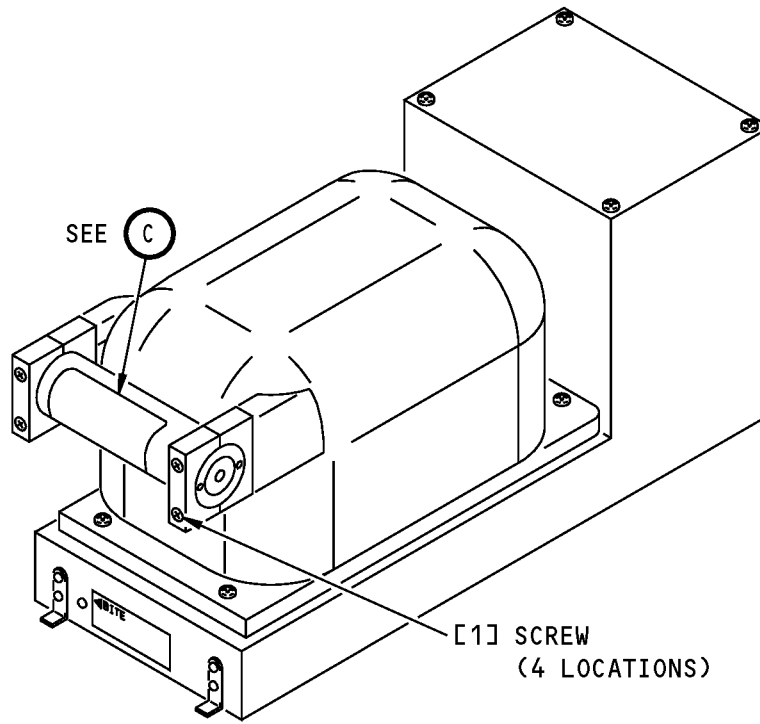
(A)

**Underwater Locator Beacon Installation
Figure 201 (Sheet 2 of 3)/23-71-21-990-801**

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HAP 101-999

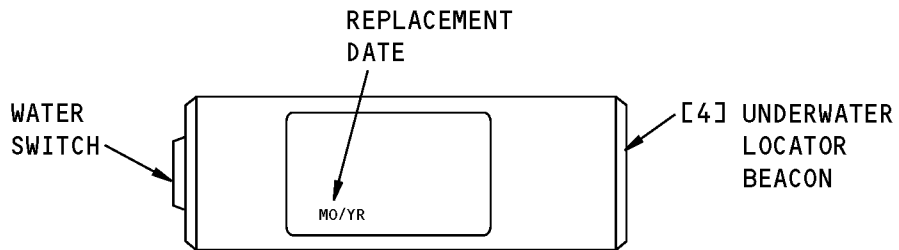
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VOICE RECORDER

B



UNDERWATER LOCATOR BEACON

C

**Underwater Locator Beacon Installation
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TASK 23-71-21-960-801

3. Underwater Locator Beacon Battery Replacement - Dukane ULBs

(Figure 202)

A. General

- (1) This procedure is a scheduled maintenance task.
- (2) Do not replace the battery [28] in the DK100 ULB [4]. On or before the expired date, send the DK100 to the manufacturer for servicing.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1619	Wrench - Spanner, Used on Underwater Locator Beacon (Part #: 810-325, Supplier: 94970, A/P Effectivity: 737-ALL) (Part #: B362-09111, Supplier: 26858, A/P Effectivity: 737-ALL) (Opt Part #: B362-04180A, Supplier: 26858, A/P Effectivity: 737-ALL)
STD-1066	Hose - Radiator, Split, 1-1/4 Inch Diameter, 5 Inch Length

C. Consumable Materials

Reference	Description	Specification
D50082	Lubricant - 810-346	
G02440	Battery - Lithium Battery	MIL-I-45208A
G50275	O-ring	

D. Removal Procedure

SUBTASK 23-71-21-510-001

WARNING: DO NOT REMOVE THE BATTERY FROM THE DK100 ULB [4]. DO NOT CAUSE DAMAGE TO THE DK100 ULB [4]. DO NOT DISCARD THE DK100 ULB [4]. THE MANUFACTURER HAS A REPLACEMENT PROGRAM FOR EXPIRED ULB [4]. ON OR BEFORE THE EXPIRED DATE, SEND THE DK100 ULB [4] TO THE MANUFACTURER FOR SERVICING. THE BATTERY CONTAINS DANGEROUS CHEMICAL MATERIALS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (1) If you have a DK100 ULB [4], send it to the manufacturer for servicing.

SUBTASK 23-71-21-020-004

- (2) If you do not have a DK100 ULB [4], remove the ULB battery [28]:

CAUTION: DO NOT HOLD THE ULB [4] WITH A VISE. THIS CAN CAUSE DAMAGE TO THE ULB [4].

- (a) Hold the ULB [4] body with a radiator hose - 1-1/4 Inch Diameter, 5 Inch Length, STD-1066 [22].
- (b) Use the spanner wrench, COM-1619 [21] to remove the end cap [25] that is identified BATTERY ACCESS.
- (c) Remove the rubber shock cushion [27] from the battery end if it is not removed with the end cap [25].
- (d) Hit the ULB [4] body lightly to remove the battery [28].

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- (e) Discard the battery [28].

NOTE: Refer to local instructions when you discard the battery [28].

E. Installation Procedure

SUBTASK 23-71-21-420-001

- (1) Install the ULB battery, G02440 [28]:

NOTE: The Dukane 810–2007K battery is a 6 year lithium battery used in the Dukane model DK120 ULB.

- (a) Put a new battery replacement date label [23] on the ULB [4] body.
(b) On the date label [23], write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label [23] is blank so you can write in a replacement date based on your maintenance schedule.

CAUTION: INSTALL THE ULB BATTERY [28] CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB [4].

- (c) Put the new battery, G02440 [28] in the ULB [4] with the end identified INSERT THIS END in first.
(d) Remove and discard the used O-ring [26] from the end cap [25].

CAUTION: DIRT OR OTHER UNWANTED MATERIALS CAN CAUSE DAMAGE TO THE THREADS AND THE O-RING SEAL. THIS CAN PERMIT WATER LEAKAGE.

- (e) Clean the threads and the O-ring groove in the ULB [4] body.
(f) Apply a thin layer of lubricant, D50082 to the new o-ring, G50275 [26], O-ring groove, and threads.
(g) Install the new o-ring, G50275 [26] on the end cap [25].
(h) Put the rubber shock cushion [27] smoothly on the end cap [25].
(i) Put the end cap [25] into the ULB [4] body.
(j) Use the spanner wrench, COM-1619 [21] to tighten the end cap [25] until the cap flange touches the ULB [4] body.

NOTE: Only use hand force on the spanner wrench, COM-1619 [21].

SUBTASK 23-71-21-700-001

- (2) Do a test of the ULB. To do a test of the ULB, do this task: Underwater Locator Beacon Test with a 42A12 Series Test Set, TASK 23-71-21-700-801 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 23-71-21-700-802 or Underwater Locator Beacon Test with an ATS-260 Test Set, TASK 23-71-21-700-804 or Underwater Locator Beacon Test with a PL3 Test Set, TASK 23-71-21-700-803 or Underwater Locator Beacon Test with a Seacom TS100 Test Set, TASK 23-71-21-700-805

————— END OF TASK —————

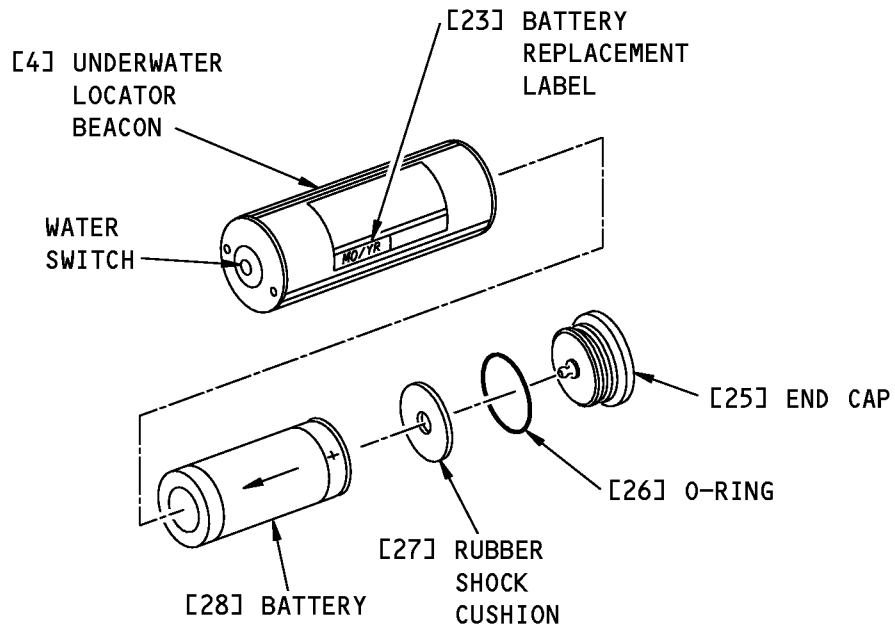
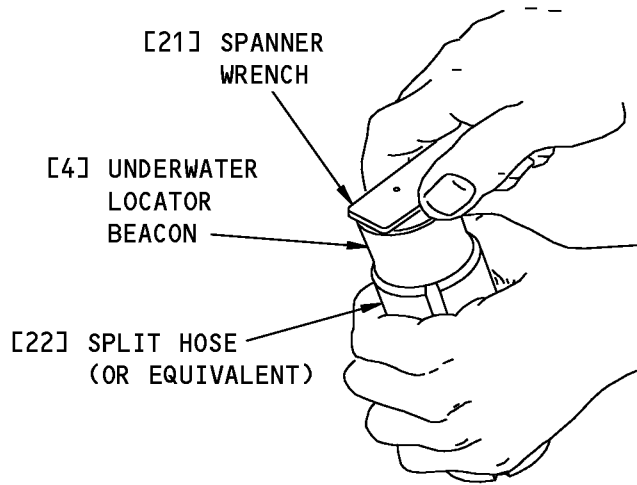
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E11040 S0006417281_V2

**Underwater Locator Beacon Battery Replacement
Figure 202/23-71-21-990-802**

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TASK 23-71-21-960-802

4. Underwater Locator Beacon Battery Replacement - Datasonics ULBs

(Figure 202)

A. General

- (1) This procedure is a scheduled maintenance task.
- (2) Do not replace the battery [28] in a series S ULB [4]. If the serial number on the ULB [4] starts with an S, on or before the expired date, send the ULB [4] to the manufacturer for servicing.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-2543	Torque - Adapter, Used on Underwater Locator Beacon (Part #: B362-09111, Supplier: 26858, A/P Effectivity: 737-ALL) (Opt Part #: B362-04180A, Supplier: 26858, A/P Effectivity: 737-ALL)
STD-1066	Hose - Radiator, Split, 1-1/4 Inch Diameter, 5 Inch Length

C. Consumable Materials

Reference	Description	Specification
G50272	Battery - Teledyne Benthos (P/N C362-04270-2)	
G50273	O-ring - Lubricated, Teledyne Benthos (P/N 2-022)	

D. Removal Procedure

SUBTASK 23-71-21-510-002

WARNING: DO NOT REMOVE THE BATTERY FROM A SERIES S ULB [4]. DO NOT DISCARD THE ULB [4]. THE MANUFACTURER HAS A REPLACEMENT PROGRAM FOR EXPIRED ULB [4]. ON OR BEFORE THE EXPIRED DATE, SEND THE ULB [4] TO THE MANUFACTURER FOR SERVICING. THE BATTERY CONTAINS DANGEROUS CHEMICAL MATERIALS WHICH CAN CAUSE INJURIES TO PERSONNEL.

- (1) If you have a series S ULB [4], send the ULB [4] to the manufacturer for servicing.

SUBTASK 23-71-21-020-005

- (2) If you do not have a series S ULB [4], remove the ULB battery [28]:

CAUTION: DO NOT HOLD THE ULB [4] WITH A VISE. THIS CAN CAUSE DAMAGE TO THE ULB [4].

- (a) Hold the ULB [4] body with a radiator hose - 1-1/4 Inch Diameter, 5 Inch Length, STD-1066.
- (b) Use the underwater locator beacon torque adapter, COM-2543 to remove the end-cap [25] identified as "BATTERY ACCESS".
- (c) Turn the housing up to remove the battery [28] from the unit.
- (d) Discard the battery [28].

NOTE: Refer to local instructions when you discard the battery [28].

E. Installation Procedure

SUBTASK 23-71-21-420-002

- (1) Install the ULB battery, G50272 [28]:

NOTE: The Teledyne Benthos C362-04270-2 is a six year battery.

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- (a) Set the battery [28] until the arrow points to the top end of the unit.

NOTE: The battery label has an arrow mark.

- (b) On the date label [23], write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label [23] is blank so you can write in a replacement date based on your maintenance schedule.

CAUTION: INSTALL THE ULB BATTERY [28] CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB [4].

- (c) Put the new battery, G50272 [28] in the ULB [4] with the end identified INSERT THIS END in first.

- (d) Remove the O-ring [26] from its groove in the end-cap [25].

CAUTION: DIRT OR OTHER UNWANTED MATERIALS CAN CAUSE DAMAGE TO THE THREADS AND THE O-RING SEAL. THIS CAN PERMIT WATER LEAKAGE.

- (e) Clean the O-ring groove of dirt, lint, and other unwanted materials.

- (f) Apply the O-ring lubricant to the new O-ring [26].

- (g) Put the lubricated o-ring, G50273 [26] in the end-cap groove.

- (h) Attach the end-cap [25] to the housing.

- (i) Use the underwater locator beacon torque adapter, COM-2543 to install the end-cap [25] tightly.

NOTE: Only use hand force on the underwater locator beacon torque adapter, COM-2543.

- (j) Torque the end-cap [25] to 25 to 30 inch pounds.

SUBTASK 23-71-21-700-002

- (2) Do a test of the ULB. To do a test of the ULB, do this task: Underwater Locator Beacon Test with a 42A12 Series Test Set, TASK 23-71-21-700-801 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 23-71-21-700-802 or Underwater Locator Beacon Test with an ATS-260 Test Set, TASK 23-71-21-700-804 or Underwater Locator Beacon Test with a PL3 Test Set, TASK 23-71-21-700-803 or Underwater Locator Beacon Test with a Seacom TS100 Test Set, TASK 23-71-21-700-805

————— END OF TASK —————

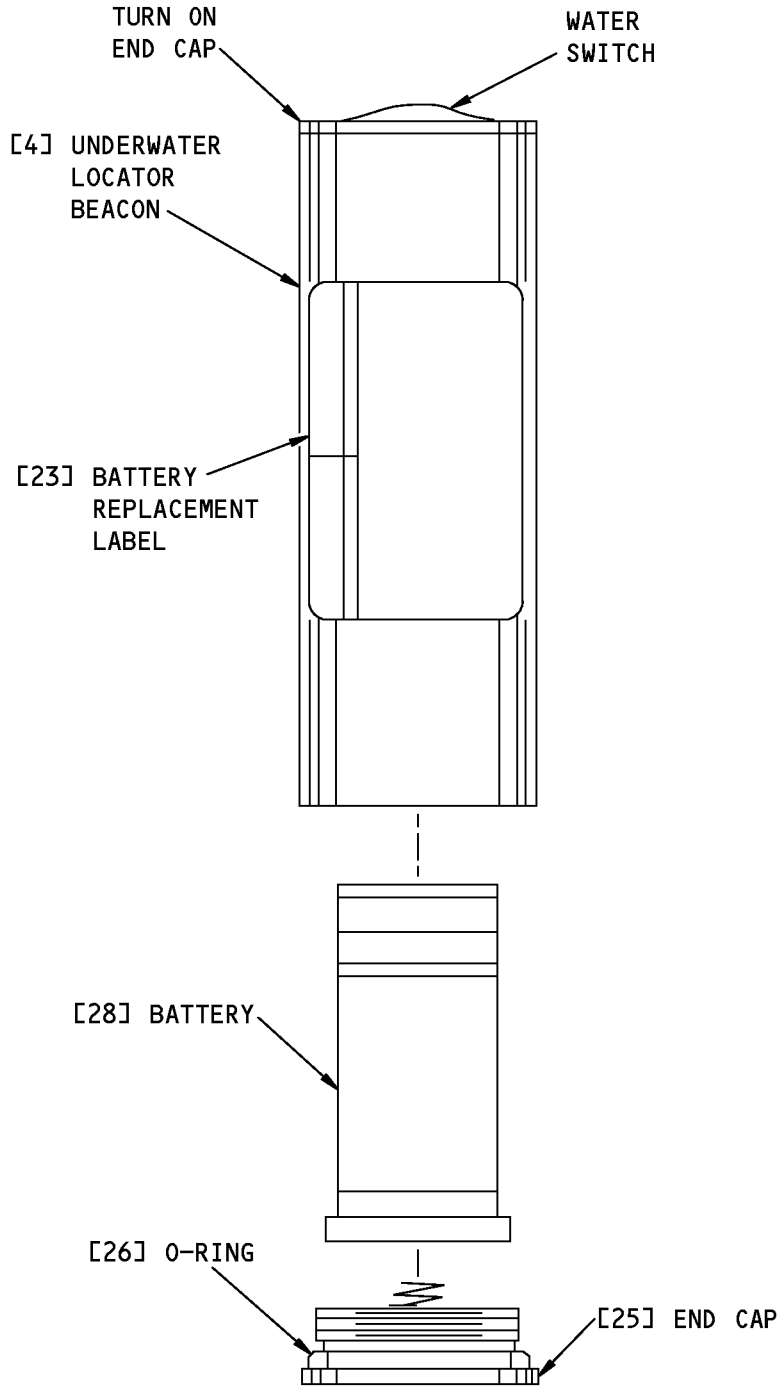
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Underwater Locator Beacon Battery Replacement
Figure 203/23-71-21-990-803

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TASK 23-71-21-700-801

5. Underwater Locator Beacon Test with a 42A12 Series Test Set

A. General

(1) This procedure is a scheduled maintenance task.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10768	Test Set - 42A12, Underwater Locator Beacon (ULB) (Part #: 42A12 SERIES, Supplier: 94970, A/P Effectivity: 737-ALL)

C. Consumable Materials

Reference	Description	Specification
G00270	Tape - Scotch Flatback Masking 250	ASTM D6123 (Supersedes A-A-883)

D. Procedure

SUBTASK 23-71-21-720-001

(1) If you have a 42A12 ULB Test Set, COM-10768, do this test of the ULB [4]:

NOTE: 42A12 can do a test for all Dukane and Teledyne Benthos ULBs.

- (a) Put the 42A12 ULB Test Set, COM-10768 approximately 3 feet from the ULB [4].
- (b) Set the OFF-GAIN control on the 42A12 ULB Test Set, COM-10768 to the middle position.
- (c) Set the TUNING control knob to 37 ± 1 kHz.
- (d) Set the input selector switch to the INT position.
- (e) Make sure that the 42A12 ULB Test Set, COM-10768 operates correctly.

- 1) Rub your thumb and fingers together in front of the microphone on the 42A12 ULB Test Set, COM-10768.

NOTE: This will produce a rushing noise from the speaker.

- a) Make sure that you hear sounds through the speaker or headset.
- (f) Use Scotch Flatback Masking Tape 250, G00270 to attach a piece of wire or other conductive material to the ULB [4] case and the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB [4].

- 1) Make sure that you hear a pulsed tone at 1-second intervals.
- (g) Remove the piece of wire or other conductive material from the ULB [4] case and the center of the water switch.
 - 1) Make sure that you do not hear a pulsed tone.
- (h) Set the OFF-GAIN control switch to the OFF position.
- (i) Make sure that the water switch end of the ULB [4] has no grease or dirt.
- (j) If necessary, do the steps that follow:
 - 1) Clean the switch with water and detergent.

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2) Dry the switch with a clean cloth.

————— END OF TASK —————

TASK 23-71-21-700-802

6. Underwater Locator Beacon Test with a PL1 Test Set

A. General

(1) This procedure is a scheduled maintenance task.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10771	Test Set - PL1, Underwater Locator Beacon (ULB) (Part #: PL1, Supplier: 94970, A/P Effectivity: 737-ALL)

C. Consumable Materials

Reference	Description	Specification
G00270	Tape - Scotch Flatback Masking 250	ASTM D6123 (Supersedes A-A-883)

D. Procedure

SUBTASK 23-71-21-720-002

(1) If you have a PL1 ULB Test Set, COM-10771, do this test of the ULB [4]:

NOTE: PL1 can only do a test for the DK100 ULB.

(a) Use Scotch Flatback Masking Tape 250, G00270 to attach a piece of wire or other conductive material to the ULB [4] case and the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB [4].

(b) Put the end of the PL1 ULB Test Set, COM-10771 against the ULB [4], approximately one inch from the water switch.

(c) Push and hold the operation switch on the PL1 ULB Test Set, COM-10771.

1) Make sure that the BEACON ACTIVE WHEN FLASHING light comes on-and-off.

2) Remove the piece of wire or other conductive material from the ULB [4] case and the center of the water switch.

3) Make sure that the BEACON ACTIVE WHEN FLASHING light does not come on-and-off.

(d) Release the operation switch on the PL1 ULB Test Set, COM-10771.

(e) Remove the PL1 ULB Test Set, COM-10771.

(f) Make sure that the water switch end of the ULB [4] has no grease or dirt.

(g) If necessary, do the steps that follow:

1) Clean the switch with water and detergent.

2) Dry the switch with a clean cloth.

————— END OF TASK —————

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TASK 23-71-21-700-803

7. Underwater Locator Beacon Test with a PL3 Test Set

A. General

(1) This procedure is a scheduled maintenance task.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10772	Test Set - PL3, Underwater Locator Beacon (ULB) (Part #: PL3, Supplier: 94970, A/P Effectivity: 737-ALL)

C. Procedure

SUBTASK 23-71-21-720-003

(1) If you have a PL3 ULB Test Set, COM-10772, do this test of the ULB [4]:

NOTE: PL3 can only do a test for the DK100 and DK120 ULBs.

- (a) Push and hold the PL3 ULB Test Set, COM-10772 against the ULB [4] water switch.
 - 1) Make sure that you hear a pulse sound.
 - 2) Make sure that you see the LED light comes on and off.
- (b) Remove the PL3 ULB Test Set, COM-10772.
- (c) Make sure that the water switch end of the ULB [4] has no grease or dirt.
- (d) If necessary, do the steps that follow:
 - 1) Clean the switch with water and detergent.
 - 2) Dry the switch with a clean cloth.

————— END OF TASK —————

TASK 23-71-21-700-804

8. Underwater Locator Beacon Test with an ATS-260 Test Set

A. General

(1) This procedure is a scheduled maintenance task.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-978	Test Set - ATS-260, Underwater Locator Beacon (ULB) (Part #: ATS-260, Supplier: 26858, A/P Effectivity: 737-ALL)

C. Procedure

SUBTASK 23-71-21-720-004

(1) If you have a ATS-260 ULB test set, COM-978, do this test of the ULB [4]:

NOTE: ATS-260 can only do a test for the ELP-362D ULB.

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- (a) Put the ATS-260 ULB test set, COM-978 clip on the ULB [4].
(b) Push and hold the PUSH TO TEST button.
(c) Put the ATS-260 ULB test set, COM-978 probe on the ULB [4] water switch.
1) Make sure that a green light (LED) shows.
2) Make sure that you can hear sounds from the ATS-260 ULB test set, COM-978.
3) Make sure that the amber light (LED) comes on-and-off.
(d) Release the PUSH TO TEST button.
(e) Remove the ATS-260 ULB test set, COM-978.
(f) Make sure that the water switch end of the ULB [4] has no grease or dirt.
(g) If necessary, do the steps that follow:
1) Clean the switch with water and detergent.
2) Dry the switch with a clean cloth.

END OF TASK

TASK 23-71-21-700-805

9. Underwater Locator Beacon Test with a Seacom TS100 Test Set

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Table with 2 columns: Reference, Description. Row 1: COM-10769, Test Set - TS100, Underwater Locator Beacon (ULB) (Part #: TS100, Supplier: 94970, A/P Effectivity: 737-ALL)

B. Procedure

SUBTASK 23-71-21-720-005

(1) If you have a TS100 ULB Test Set, COM-10769, do this test of the ULB [4]:

NOTE: TS100 can only do a test for the DK100 and DK120 ULBs.

- (a) Connect the probe head of the TS100 ULB Test Set, COM-10769 to the ULB [4] in its mount.
(b) Slide the switch on the side of the TS100 ULB Test Set, COM-10769 housing to ON.
1) Make sure that the LCD display shows "TESTING".
(c) Press the button in the center of the TS100 ULB Test Set, COM-10769 to start a retest.
1) Make sure that the LCD display shows "TESTING".
(d) Within a few seconds, the LCD will change to show one of the following Pass / Fault messages:

Table with 2 columns: LCD Message, Explanation. Rows include Beacon Passed, Battery Fault, No Pulse Output, Pulse Fault, Free-Run Fault.

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(Continued)

LCD Message	Explanation
Test Set Fault	Test Set batteries must be replaced
Need Service	Beacon is NOT operating properly
Open Probe/Batt.	Probe head is not properly attached or the beacon battery is dead.

- 1) Make sure that the LCD shows "Beacon Passed".

NOTE: THE PASS / FAULT MESSAGE WILL BE DISPLAYED FOR APPROXIMATELY 10 SECONDS BEFORE RETURNING TO "READY FOR TEST".

- (e) Remove the TS100 ULB Test Set, COM-10769.
- (f) Make sure that the water switch end of the ULB [4] has no grease or dirt.
- (g) If necessary, do the steps that follow:
 - 1) Clean the switch with water and detergent.
 - 2) Dry the switch with a clean cloth.

————— END OF TASK —————

TASK 23-71-21-700-806

10. Underwater Locator Beacon Test with a TS200 Test Set

A. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-10770	Test Set - TS200, Underwater Locator Beacon (ULB) (Part #: TS200, Supplier: 94970, A/P Effectivity: 737-ALL)

B. Procedure

SUBTASK 23-71-21-720-006

- (1) If you have a TS200 ULB Test Set, COM-10770, do this test of the ULB:

NOTE: TS200 can do a test for all Dukane ULBs.

- (a) Attach the test probe clip of the TS200 ULB Test Set, COM-10770 to the beacon in its mount.
- (b) Put the tip of the probe on the silver pad of the water switch at the end of the beacon.
 - 1) The LCD display will show the battery voltage of the beacon.
- (c) Refer to the applicable battery code for the minimum permitted range of the beacon battery voltage:

NOTE: Examine the battery replacement label to find the battery code.

- 1) Code A – 3.55 Volts
- 2) Code B – 2.97 Volts
- 3) Code C – 2.97 Volts
- 4) Code D – 2.97 Volts
- (d) Push the red button on the TS200 ULB Test Set, COM-10770.

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- 1) The beacon starts and you hear a pinging noise from the TS200 ULB Test Set, COM-10770.
- (e) Remove the test probe clip of the TS200 ULB Test Set, COM-10770 from the ULB.
- (f) Replace the ULB if necessary.
- (g) Make sure that the water switch end of the ULB has no grease or dirt.
- (h) If necessary, do the steps that follow:
 - 1) Clean the switch with water and detergent.
 - 2) Dry the switch with a clean cloth.

————— **END OF TASK** —————

TASK 23-71-21-400-801

11. Underwater Locator Beacon (ULB) Installation

(Figure 201)

A. General

- (1) This procedure is a scheduled maintenance task.

B. References

Reference	Title
23-71-11-400-801	Voice Recorder Installation (P/B 401)

C. Consumable Materials

Reference	Description	Specification
B00541	Cleaner - General Purpose Household Detergent	

D. Location Zones

Zone	Area
142	Aft Cargo Compartment - Right

E. Installation Procedure

SUBTASK 23-71-21-420-004

- (1) Install the ULB [4] on the voice recorder:
 - (a) Make sure that the water switch end of the Underwater Locator Beacon [4] has no grease or dirt.
 - 1) Clean the water switch with a weak general purpose household detergent cleaner, B00541.
 - (b) Put the Underwater Locator Beacon [4] into the bracket.
 - (c) Install the clamp on the end of the Underwater Locator Beacon [4] with the two screws [1].
 - (d) Make sure that you can read the replacement date on the Underwater Locator Beacon [4].
 - (e) Tighten the four screws [1].

SUBTASK 23-71-21-700-003

- (2) THIS STEP APPLIES ONLY TO DATASONICS SERIES S ULB OR THE DUKANE DK100 ULB CONFIGURATIONS:

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Do a test of the ULB. To do a test of the ULB, do this task: Underwater Locator Beacon Test with a 42A12 Series Test Set, TASK 23-71-21-700-801 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 23-71-21-700-802 or Underwater Locator Beacon Test with an ATS-260 Test Set, TASK 23-71-21-700-804 or Underwater Locator Beacon Test with a PL3 Test Set, TASK 23-71-21-700-803 or Underwater Locator Beacon Test with a Seacom TS100 Test Set, TASK 23-71-21-700-805

NOTE: A ULB test is done at battery replacement for all ULBs, but not for the Datasonics Series S ULB or the Dukane DK100. You send these two ULB configurations to the manufacturer for service. Because you cannot replace the battery for the Datasonics Series S ULB or the Dukane DK100, this step is necessary only for those two configurations.

SUBTASK 23-71-21-420-005

(3) Do this task: Voice Recorder Installation, TASK 23-71-11-400-801.

————— **END OF TASK** —————

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FLIGHT DECK ENTRY VIDEO SURVEILLANCE SYSTEM - ADJUSTMENT/TEST

HAP 1. General

- HAP A. This procedure has one task:
 HAP (1) System test.

HAP **TASK 23-75-00-730-804**

HAP 2. Flight Deck Entry Video Surveillance System - System Test

HAP A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
31-62-00 P/B 501	COMMON DISPLAY SYSTEM - ADJUSTMENT/TEST

HAP B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP C. Prepare for the Procedure

HAP SUBTASK 23-75-00-861-002

- HAP (1) If the aircraft is not energized, supply electrical power. Do this task: Supply Electrical Power,
 HAP TASK 24-22-00-860-811.

HAP SUBTASK 23-75-00-865-002

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

HAP F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	12	C01373	DISPLAY CTR LWR

HAP F/O Electrical System Panel, P6-11

Row	Col	Number	Name
A	8	C01627	CABIN UTIL RLY PWR

HAP F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-00-860-006

- HAP (3) On the electric meters, battery and galley power module, P5-13, make sure that the IFE/PASS
 HAP SEAT switch is set to ON.

HAP SUBTASK 23-75-00-860-004

- HAP (4) Make sure the Common Display System (CDS) is serviceable, (COMMON DISPLAY SYSTEM -
 HAP ADJUSTMENT/TEST, PAGEBLOCK 31-62-00/501).

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D. Test Procedure

HAP

E. Put the Airplane Back to Its Usual Condition

HAP

SUBTASK 23-75-00-862-002

HAP

(1) Remove electrical power if it is not necessary for other tasks. Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

HAP

————— **END OF TASK** —————

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COCKPIT DOOR SURVEILLANCE SYSTEM - ADJUSTMENT/TEST

HAP

1. General

HAP A. This procedure contains one task. The task is a system test of the FlightVu Surveillance System. This
HAP test requires two persons; one to operate the controls and evaluate the results, the other to stand in
HAP front of the cameras for identification purposes.

HAP B. This task includes these tests:

- HAP (1) LCD Monitor Test
- HAP (2) Control Panel Lighting Test
- HAP (3) FlightVu Power Test
- HAP (4) Camera Test - Daytime Conditions
- HAP (5) Camera Test - Nighttime Conditions

HAP **TASK 23-75-00-730-803**

HAP **2. FlightVu Surveillance System - System Test**

HAP A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

HAP B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP C. Prepare for test

HAP SUBTASK 23-75-00-840-003

HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811

HAP SUBTASK 23-75-00-865-001

HAP (2) Make sure that the following circuit breaker is closed:

HAP (a) Circuit Breaker Panel, P18-2

HAP 1) FLIGHTVU SYSTEM

HAP SUBTASK 23-75-00-730-003

HAP (3) On the FlightVu Control Panel, set the controls as follows:

HAP (a) On/Off - ON

HAP (b) Contrast - Set as required for comfortable viewing.

HAP (c) Brightness - Set as required for comfortable viewing.

HAP (d) Camera Select - Door

HAP D. LCD Monitor Test

HAP SUBTASK 23-75-00-730-004

HAP (1) Do these steps at the system control panel:

HAP (a) Vary the intensity of the brightness knob.

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HAP 1) Observe that the brightness changes with the changing of the knob's position.

HAP (b) Vary the intensity of the Contrast knob.

HAP 1) Observe that the contrast changes with the changing of the knob's position.

HAP E. Control Panel Lighting Test

HAP SUBTASK 23-75-00-730-005

HAP (1) Do these steps at the aft pedestal:

HAP (a) Vary the intensity of the Pedestal Lighting knob.

HAP 1) Observe that the Control Panel lighting changes with the changing of the knob's position.

HAP F. FlightVu Power Test

HAP SUBTASK 23-75-00-730-006

HAP (1) Do these steps at the P18 circuit breaker panel.

HAP (a) Open this FLIGHTVU SYSTEM circuit breaker:

HAP 1) Make sure that the LCD Monitor turns off.

HAP NOTE: This circuit breaker removes power to all system components.

HAP (b) Reset the circuit breaker:

HAP 1) Make sure that the LCD Monitor displays the Door Camera image.

HAP (2) Do these steps at the system control panel:

HAP (a) Set the Control Panel On/Off switch to the OFF position.

HAP 1) Make sure the system turns off.

HAP (b) Set the Control Panel On/Off switch to the ON position.

HAP G. Camera Test - Daytime Conditions

HAP SUBTASK 23-75-00-730-007

HAP (1) Do these steps at the system control panel:

HAP (a) Make sure that the Control Panel camera select switch is set to the DOOR position.

HAP (2) Do these steps at the cockpit door entry area:

HAP (a) Have a technician stand in view of the Door camera.

HAP (3) Do these steps at the system control panel:

HAP (a) Evaluate the display on the LCD Monitor for clarity and the ability to verify and identify the individual at the door.

HAP NOTE: It is not satisfactory to just verify that someone is at the door. Recognition of the individual is required.

HAP (4) Do these steps at the system control panel:

HAP (a) Set the camera select switch to the LEFT position.

HAP 1) Evaluate the display on the LCD Monitor for clarity and the ability to verify the area around the flight deck door.

HAP (b) Set the camera select switch to the RIGHT position.

HAP 1) Evaluate the display on the LCD Monitor for clarity and the ability to verify the area around the flight deck door.

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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VIDEO CAMERAS - REMOVAL/INSTALLATION

HAP

1. General

HAP

A. This procedure has these tasks:

HAP

(1) Removal of the cameras for the flight deck entry video surveillance system (FDEVSS).

HAP

(2) Installation of the cameras for the FDEVSS.

HAP

B. The camera assemblies are installed in the ceiling above the flight compartment, and the aft of the flight deck security door.

HAP

TASK 23-75-02-000-804

HAP

2. Video Camera - Removal

HAP

(Figure 401)

HAP

A. General

HAP

(1) This removal task is for these cameras:

HAP

(a) Camera 1, M3002, is at STA 285, BL 0, installed on the back-side of the forward lowered ceiling close-out.

HAP

HAP

(b) Camera 2, M3003, is at STA 340, BL 0, installed on the appearance-side of the forward entry ceiling assembly.

HAP

HAP

(c) Camera 3, M3004, is at STA 300, RBL 23, installed on the appearance -side of the forward right-hand doorway liner panel.

HAP

HAP

NOTE: On the camera Control Panel (CP), position R is camera 3, position C is camera 1, and position L is camera 2.

HAP

HAP

B. References

HAP

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
25-21-71-000-805	Close Out Panel Removal, Forward Lowered Ceiling (P/B 401)

HAP

HAP

HAP

C. Location Zones

HAP

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

HAP

HAP

D. Prepare for Removal

HAP

SUBTASK 23-75-02-865-006

HAP

(1) Open this circuit breaker and install safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP

HAP

SUBTASK 23-75-02-010-002

HAP

(2) Get access to the applicable camera:

HAP

(a) To get access to camera 1, do this task: Close Out Panel Removal, Forward Lowered Ceiling, TASK 25-21-71-000-805

HAP

HAP

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HAP
HAP

E. Removal Procedure

SUBTASK 23-75-02-020-005

HAP
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HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

HAP
HAP

(1) Before you touch the camera, do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-75-02-020-010

HAP
HAP
HAP
HAP
HAP

(2) Remove the camera [14] as follows:

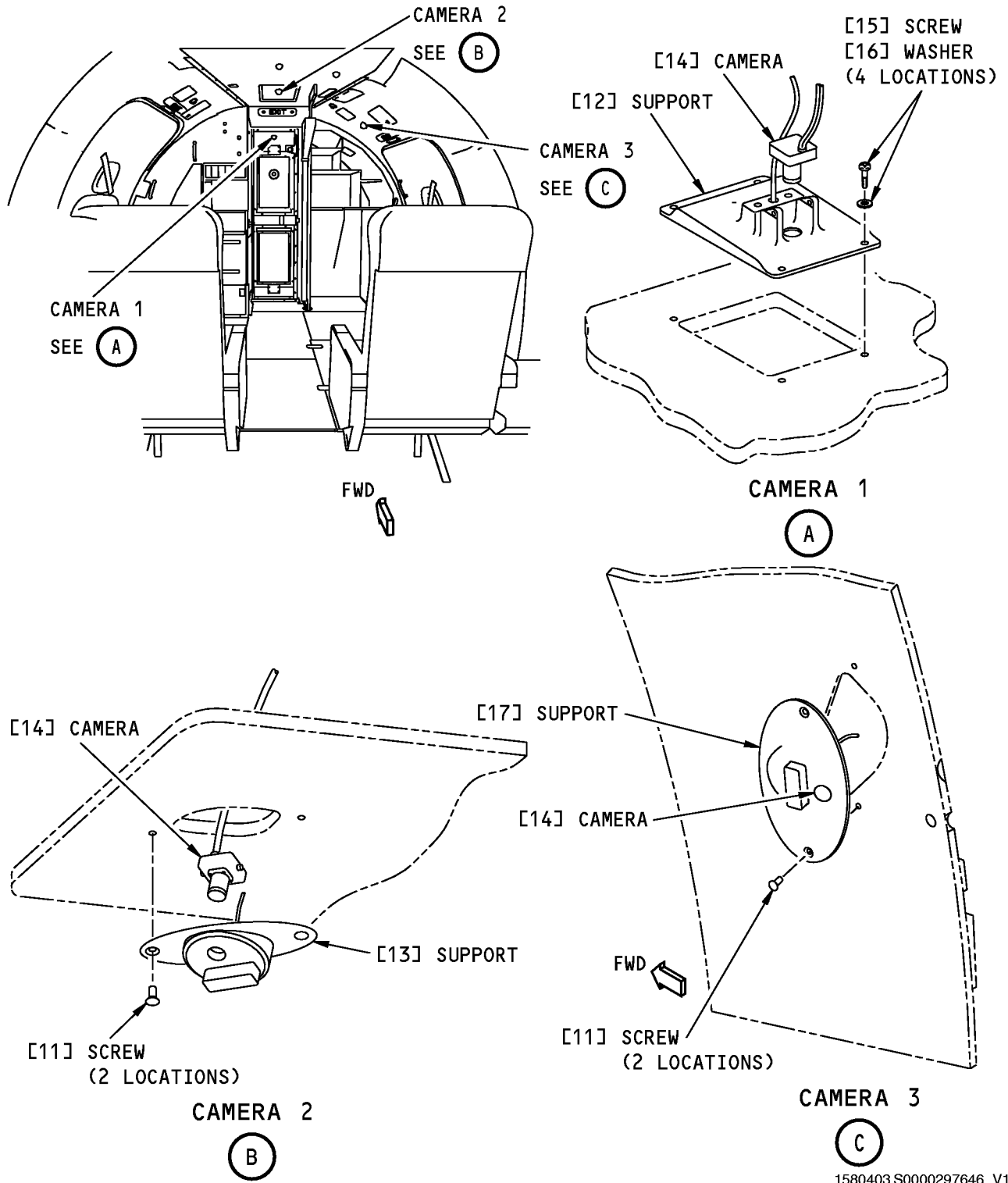
- (a) Remove the camera wire from the loop attachment, on the hidden-side of the panel.
(b) At the camera control unit, disconnect the camera connector.
(c) Remove the two washers and screws, and remove the camera [14] from the applicable support: support [12], support [13], or support [17]

END OF TASK

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FDEVSS Camera Installation
Figure 401/23-75-02-990-808

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HAP TASK 23-75-02-400-804

HAP 3. Video Camera - Installation

HAP (Figure 401)

HAP A. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
23-75-00-730-804	Flight Deck Entry Video Surveillance System - System Test (P/B 501)
24-22-00-860-812	Remove Electrical Power (P/B 201)
25-21-31-420-802	Sidewall Lining Panel Installation (Forward Entry Doorway) (P/B 401)
25-21-71-400-801	Lowered Ceiling Installation (P/B 401)

HAP B. Location Zones

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

HAP C. Installation Procedure

HAP SUBTASK 23-75-02-865-009

HAP (1) Make sure that this circuit breaker is open and has safety tag:

HAP F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-02-869-001

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the component, do this task:

HAP ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP SUBTASK 23-75-02-420-012

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF
HAP YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE
HAP DAMAGE TO THE UNIT.

HAP (3) To install camera 1, M3002, do the steps that follow:

HAP **CAUTION:** DO NOT PULL, TWIST, OR BEND THE CAMERA CABLE MORE THAN THE
HAP MINIMUM RADIUS OF 1 IN. (25 MM). IF YOU BEND, PULL, OR TWIST THE CABLE
HAP TOO MUCH, DAMAGE TO THE CABLE CAN OCCUR.

HAP (a) Attach the camera [9] to the support [8].

HAP **NOTE:** The two screws (M2 x 4), two metal, and two nylon washers (M2.5), are details of
HAP the camera assembly. Put the nylon washers adjacent to the plastic camera
HAP housing.

HAP (b) If applicable, attach the support [8] to the ceiling panel with two screws [11].

HAP (c) Connect the camera electrical connector to the camera control unit.

HAP (d) Connect the camera electrical connector to camera control unit (CCU) 1, M3005.

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HAP (e) On non-appearance side of the ceiling panel, attach the camera electrical cable to the
HAP bonded retainer strap [10].
HAP

SUBTASK 23-75-02-420-011

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF
YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE
DAMAGE TO THE UNIT.

HAP (4) To install camera 2, M3003, do the steps that follow:

HAP (a) On non-appearance side of the ceiling panel, connect the camera electrical connector to
HAP CCU 2, M3007.

CAUTION: DO NOT PULL, TWIST, OR BEND THE CAMERA CABLE MORE THAN THE
MINIMUM RADIUS OF 1 IN. (25 MM). IF YOU BEND, PULL, OR TWIST THE CABLE
TOO MUCH, DAMAGE TO THE CABLE CAN OCCUR.

HAP (b) From the appearance-side of the ceiling panel, attach the camera [9] to the support [12].

HAP NOTE: The two screws (M2 x 4), two metal, and two nylon washers (M2.5), are details of
HAP the camera assembly. Put the nylon washers adjacent to the plastic camera
HAP housing.

HAP (c) Attach the support [12] to the ceiling panel with two screws [11].

HAP (d) On non-appearance side of the ceiling panel, attach the camera electrical cable to the
HAP bonded retainer strap [10].
HAP

SUBTASK 23-75-02-420-013

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF
YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE
DAMAGE TO THE UNIT.

HAP (5) To install camera 3, M3004, do the steps that follow:

HAP (a) On non-appearance side of the doorway liner, connect the camera electrical connector to
HAP CCU 3, M3009.

CAUTION: DO NOT PULL, TWIST, OR BEND THE CAMERA CABLE MORE THAN THE
MINIMUM RADIUS OF 1 IN. (25 MM). IF YOU BEND, PULL, OR TWIST THE CABLE
TOO MUCH, DAMAGE TO THE CABLE CAN OCCUR.

HAP (b) From the appearance-side of the doorway liner, attach the camera [9] to the support [13].

HAP NOTE: The two screws (M2 x 4), two metal, and two nylon washers (M2.5), are details of
HAP the camera assembly. Put the nylon washers adjacent to the plastic camera
HAP housing.

HAP (c) Attach the support [13] to the doorway liner with two screws [11].

HAP (d) On non-appearance side of the ceiling panel, attach the camera electrical cable to the
HAP bonded retainer strap [10].
HAP

SUBTASK 23-75-02-865-010

HAP (6) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Table with 4 columns: Row, Col, Number, Name. Row B, Col 1, Number C01641, Name SURVEILLANCE CAMERA

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D. Installation Test

SUBTASK 23-75-02-700-001

- (1) Do an operational check: Flight Deck Entry Video Surveillance System - System Test, TASK 23-75-00-730-804.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 23-75-02-410-005

- (1) Put the applicable ceiling panels, and doorway liner back to their usual condition. These are the tasks:

Sidewall Lining Panel Installation (Forward Entry Doorway), TASK 25-21-31-420-802, and Lowered Ceiling Installation, TASK 25-21-71-400-801.

SUBTASK 23-75-02-862-001

- (2) Remove electrical power if it is not necessary for other tasks, (Remove Electrical Power, TASK 24-22-00-860-812).

END OF TASK

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HAP 037-054, 101-999
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FLIGHTVU CAMERA AND IR ILLUMINATOR - REMOVAL/INSTALLATION

HAP

1. General

HAP

A. The FlightVu Camera and IR Illuminator are located in the overhead interior in three (3) locations. The Camera and IR Illuminator is installed in a camera housing assembly.

B. Three types of camera housing assemblies are used: a corner/ceiling housing and a long and short camera housing. This procedure assumes the removal of the camera housing assembly prior to the removal of the Camera or IR Illuminator.

TASK 23-75-02-000-805

2. Remove Camera Long/Short Housing Assembly

HAP

A. Location Zones

HAP

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

HAP

HAP

HAP

HAP

HAP

B. Remove Camera Long/Short Housing Assembly

HAP

SUBTASK 23-75-02-865-003

(1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

HAP

(a) Circuit Breaker Panel, P18-2

HAP

1) FLIGHTVU SYSTEM

HAP

SUBTASK 23-75-02-020-003

(2) Gain access to the overhead interior in the area around the flight deck door.

HAP

(3) Disconnect the Camera electrical connector from the Camera Control Unit (CCU).

HAP

(4) Disconnect the IR Illuminator electrical jiffy junction connections.

HAP

(5) Support camera housing assembly and remove four (4) screws securing housing to interior panel. Retain hardware for re-installation.

HAP

HAP

(6) Route wiring through hole in panel and lower camera housing assembly from interior panel.

————— **END OF TASK** —————

HAP

HAP

TASK 23-75-02-000-806

3. Remove Corner/Ceiling Camera Housing Assembly

HAP

A. Remove Corner/Ceiling Camera Housing Assembly

HAP

SUBTASK 23-75-02-865-004

HAP

(1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

HAP

(a) Circuit Breaker Panel, P18-2

HAP

1) FLIGHTVU SYSTEM

HAP

HAP

SUBTASK 23-75-02-020-004

(2) Gain access to the overhead interior in the area around the galley area.

HAP

(3) Disconnect the Camera electrical connector from the CCU.

HAP

(4) Disconnect the IR Illuminator electrical jiffy junction connections.

HAP

(5) Support camera housing assembly and remove two (2) screws and washers securing housing to interior panel. Retain hardware for re-installation.

HAP

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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HAP (6) Route wiring through hole in panel and lower camera housing assembly from interior panel.

END OF TASK

HAP

HAP

TASK 23-75-02-000-807

HAP

4. Remove IR Illuminator and Camera (Long/Short Housing)

HAP

A. References

HAP

Reference	Title
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

HAP

HAP

B. Remove IR Illuminator and Camera (Long/Short Housing)

HAP

SUBTASK 23-75-02-000-003

HAP

NOTE: On the long camera housing, it may be necessary to remove the housing cover assembly prior to removal of the camera bracket assembly.

HAP

HAP

(1) Measure angle of camera lens (viewing angle) to housing assembly. Record this information for use during installation of camera.

HAP

HAP

(2) Support housing and camera bracket assembly and remove four (4) screws and washers securing camera bracket assembly to housing assembly. Retain hardware for re-installation.

HAP

HAP

(3) Carefully remove camera bracket assembly from housing assembly; guide wiring from housing to avoid damage. Place housing assembly to one side.

HAP

HAP

(4) Support camera bracket assembly and remove two (2) nuts and washers securing IR Illuminator and camera cover to bracket assembly. Retain hardware for re-installation.

HAP

HAP

(5) Carefully remove IR Illuminator and camera cover; guide wiring bracket assembly to avoid damage. Place IR Illuminator and camera cover to one side.

HAP

HAP

(6) Support camera bracket assembly and remove four (4) cap screws securing camera to camera bracket assembly. Retain hardware for re-installation.

HAP

HAP

(7) Remove camera from camera bracket assembly.

HAP

(8) To install protective covers on the electrical connectors, do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

HAP

END OF TASK

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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HAP TASK 23-75-02-000-808

HAP 5. Remove IR Illuminator and Camera (Corner/Ceiling Housing)

HAP A. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

HAP B. Remove IR Illuminator and Camera (Corner/Ceiling Housing)

HAP SUBTASK 23-75-02-865-005

HAP (1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

HAP (a) Circuit Breaker Panel, P18-2

HAP 1) FLIGHTVU SYSTEM

HAP SUBTASK 23-75-02-000-004

HAP (2) Support camera housing and remove three (3) screws securing housing face assembly to camera housing assembly. Retain hardware for re-installation.

HAP (3) Carefully remove housing face assembly from camera housing assemble; guide wiring from housing to avoid damage. Place camera housing assembly to one side.

HAP (4) Support housing face assembly and joggle plate and remove two (2) screws and washers securing joggle plate to housing face assembly. Retain hardware for re-installation.

HAP NOTE: The camera and IR illuminator are secured to the joggle plate.

HAP (5) Support joggle plate and remove two (2) nuts securing IR Illuminator to joggle plate. Retain hardware for re-installation.

HAP (6) Carefully remove IR Illuminator; guide wiring from joggle plate to avoid damage. Place IR Illuminator to one side.

HAP (7) Support joggle plate and remove four (4) cap screws securing camera to joggle plate. Retain hardware for re-installation.

HAP (8) Remove camera from joggle plate.

————— END OF TASK —————

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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HAP TASK 23-75-02-400-805

HAP 6. Install IR Illuminator and Camera (Long/Short Housing)

HAP Figure 401

HAP A. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

HAP B. Install IR Illuminator and Camera (Long/Short Housing)

HAP SUBTASK 23-75-02-420-003

- (1) Position and align camera to camera bracket assembly. Secure using cap screws retained from removal.

NOTE: When installing video camera, position camera in mount so that the camera wiring is positioned at the bottom of the camera after installation is complete. Use removable Loctite Threadlocker Blue, or equivalent, on camera cap screws.

- (2) Align camera cover to camera bracket assembly, making sure the camera lens fits through opening in camera cover.
- (3) Carefully position and align IR Illuminator to the camera cover and camera bracket assembly. Guide wiring through opening in both units to avoid damage. Secure using nuts and washers retained from removal.
- (4) Position and align camera bracket assemble to camera housing. Carefully guide wiring through opening in camera housing to avoid damage.
- (5) While supporting camera housing and camera bracket assembly, secure bracket assembly to camera housing using screws and washers retained from removal. Screws should be tight enough to hold camera at any angle but allow movement adjustment for alignment purposes.
- (6) Using a protractor, adjust camera viewing angle to measurement made during removal procedure.
- (7) Tighten screws securely to hold camera at measured viewing angle.

————— END OF TASK —————

HAP TASK 23-75-02-400-806

HAP 7. Install IR Illuminator and Camera (Corner/Ceiling Housing)

HAP Figure 402

HAP A. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

EFFECTIVITY
 HAP 001-013, 015-026, 028-030

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HAP B. Install IR Illuminator and Camera (Corner/Ceiling Housing)

HAP SUBTASK 23-75-02-420-004

HAP (1) Position and align camera to joggle plate. Secure using cap screws retained from removal.

HAP NOTE: When installing video camera, position camera in mount so that the camera wiring is
HAP positioned at the bottom of the camera after installation is complete. Use removable
HAP Loctite Threadlocker Blue, or equivalent, on camera cap screws.

HAP (2) Position and align IR Illuminator to the joggle plate. Carefully guide wiring through opening in
HAP joggle plate to avoid damage. Secure using nuts retained from removal.

HAP (3) Position and align joggle plate to housing face assembly. Use care to ensure camera lens and IR
HAP Illuminator fit through their respective openings.

HAP (4) Support housing face assembly and secure joggle plate to housing face assembly using screws
HAP and washers retained from removal.

HAP (5) Position and align housing face assembly to camera housing. Support camera housing and
HAP secure housing face assembly to camera housing using screws retained from removal.

END OF TASK

HAP TASK 23-75-02-400-807

HAP 8. Install Camera Long/Short Housing Assembly

HAP A. References

Reference	Title
23-75-00-730-803	FlightVu Surveillance System - System Test (P/B 501)

HAP B. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

HAP C. Install Camera Long/Short Housing Assembly

HAP SUBTASK 23-75-02-420-005

HAP (1) Gain access to the overhead interior in the area around the flight deck door.

HAP (2) Route wiring through hole in panel and position camera housing assembly to interior panel.

HAP (3) Support camera housing assembly and secure housing to interior panel using screws retained
HAP from removal.

HAP (4) Remove electrical dust caps, if used.

HAP (5) Connect the IR Illuminator electrical jiffy junction connections.

HAP (6) Connect the Camera electrical connector to the Camera Control Unit (CCU).

HAP D. Test the Camera and IR Illuminator

HAP SUBTASK 23-75-02-865-007

HAP (1) Remove the DO-NOT-CLOSE tag and close this circuit breaker:

HAP (a) Circuit Breaker Panel, P18-2

HAP 1) FLIGHTVU SYSTEM

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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- SUBTASK 23-75-02-730-001
- (2) Carry out the FlightVu Adjustment and Test: FlightVu Surveillance System - System Test, TASK 23-75-00-730-803
- SUBTASK 23-75-02-410-002
- (3) Close and secure all overhead interior panels opened for this procedure.

————— END OF TASK —————

- HAP
 - HAP
- TASK 23-75-02-400-808**

9. Install Corner/Ceiling Camera Housing Assembly

A. References

Reference	Title
23-75-00-730-803	FlightVu Surveillance System - System Test (P/B 501)

B. Location Zones

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

C. Install Corner/Ceiling Camera Housing Assembly

SUBTASK 23-75-02-420-006

- (1) Gain access to the overhead interior in the area around the galley area.
- (2) Route wiring through hole in panel and position camera housing assembly to interior panel.
- (3) Support camera housing assembly and secure housing to interior panel using screws retained from removal.
- (4) Remove electrical dust caps, if used.
- (5) Connect the IR Illuminator electrical jiffy junction connections.
- (6) Connect the Camera electrical connector to the Camera Control Unit (CCU).

D. Test the Camera and IR Illuminator

SUBTASK 23-75-02-865-008

- (1) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
 - (a) Circuit Breaker Panel, P18-2
 - 1) FLIGHTVU SYSTEM

SUBTASK 23-75-02-730-002

- (2) Carry out the FlightVu Adjustment and Test: FlightVu Surveillance System - System Test, TASK 23-75-00-730-803
- SUBTASK 23-75-02-410-003
- (3) Close and secure all overhead interior panels opened for this procedure.

————— END OF TASK —————

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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AIRCRAFT MAINTENANCE MANUAL

CAMERA CONTROL PANEL ASSEMBLY- REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has the these tasks:

HAP

(1) Removal of the camera control panel.

HAP

(2) Installation of the camera control panel.

HAP

TASK 23-75-03-000-803

HAP

2. Control Panel - Removal

HAP

Figure 401

HAP

A. General

HAP

(1) This task shows how to remove the camera control panel for the flight deck entry video surveillance system.

HAP

HAP

B. Location Zones

HAP

Zone

Area

HAP

210

Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

HAP

HAP

C. Removal Procedure

HAP

SUBTASK 23-75-03-865-004

HAP

(1) Open this circuit breaker and install safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01641	SURVEILLANCE CAMERA

HAP

HAP

SUBTASK 23-75-03-030-001

HAP

(2) Loosen the captive fasteners [2] on the control panel [1].

HAP

SUBTASK 23-75-03-020-003

HAP

(3) Lift the control panel [1] to get access to the electrical connector [3].

HAP

SUBTASK 23-75-03-030-002

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

HAP

HAP

HAP

(4) Disconnect the electrical connector [3] from the control panel [1].

HAP

SUBTASK 23-75-03-869-001

HAP

(5) Put a protective cover on the electrical connector [3].

————— **END OF TASK** —————

EFFECTIVITY

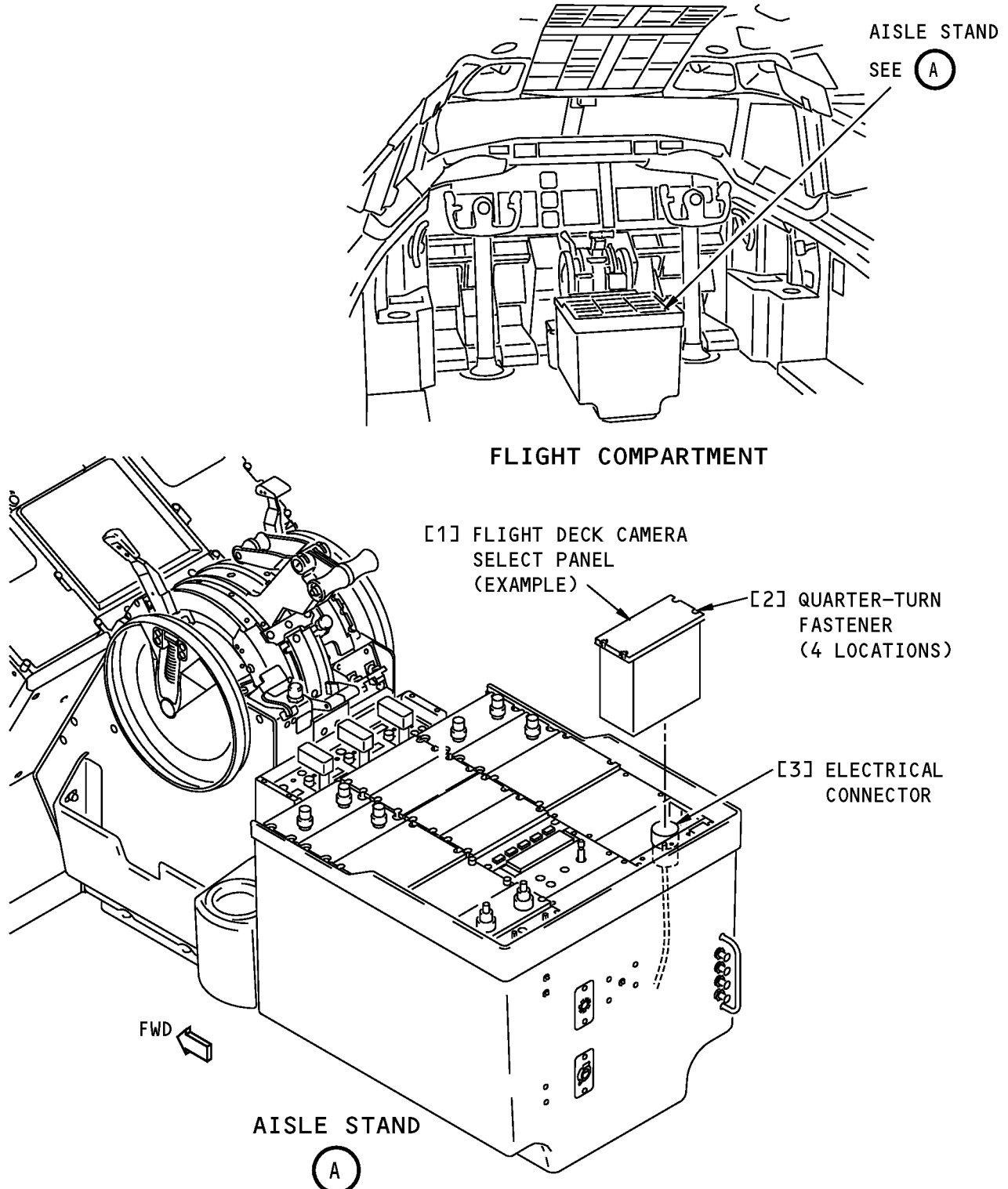
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**Camera Control Panel
Figure 401/23-75-03-990-803**

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TASK 23-75-03-400-803

3. Camera Control Panel - Installation

A. General

(1) This task shows how to install the camera control panel for the flight deck entry video surveillance system.

B. References

Reference	Title
23-75-00-730-804	Flight Deck Entry Video Surveillance System - System Test (P/B 501)
24-22-00-860-812	Remove Electrical Power (P/B 201)

C. Location Zones

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

D. Installation Procedure

SUBTASK 23-75-03-865-005

(1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

SUBTASK 23-75-03-420-002

(2) Install the camera control panel as follows:

- (a) Remove the protective cover from the electrical connector [3].
- (b) Examine the electrical connector [3] for dirt, broken pins, and damage.
- (c) Connect the electrical connector [3] to the control panel [1].
- (d) Lower the control panel [1] into the aisle stand.
- (e) Tighten the captive captive fasteners [2] on the control panel [1].

SUBTASK 23-75-03-865-006

(3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

SUBTASK 23-75-03-710-002

(4) Do this task: Flight Deck Entry Video Surveillance System - System Test, TASK 23-75-00-730-804.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 23-75-03-840-002

(1) Remove electrical power if it is not necessary for other tasks. This is the task:
Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

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FLIGHTVU VIDEO SWITCH UNIT - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A removal of the FlightVu video switch unit.

HAP

(2) An installation of the FlightVu video switch unit.

HAP

B. The FlightVu video switch unit (VSU) is located in the main equipment center.

HAP

TASK 23-75-04-000-801

HAP

2. FlightVu Video Switch Unit - Removal

HAP

A. References

HAP

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

HAP

HAP

HAP

B. Location Zones

HAP

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP

HAP

HAP

HAP

HAP

C. Access Panels

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

HAP

D. Removal Procedure

HAP

SUBTASK 23-75-04-865-003

HAP

(1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

HAP

(a) Circuit Breaker Panel, P18-2

HAP

1) FLIGHTVU SYSTEM

HAP

SUBTASK 23-75-04-020-001

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

HAP

HAP

(2) Open this access panel:

HAP

Number	Name/Location
117A	Electronic Equipment Access Door

HAP

HAP

(3) Before you touch the FlightVu video switch unit, do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP

HAP

(4) To remove the FlightVu video switch unit, do this task: E/E Box Removal, TASK 20-10-07-000-801.

HAP

END OF TASK

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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HAP
HAP

TASK 23-75-04-400-801

3. FlightVu Video Switch Unit- Installation

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)
23-75-00-730-803	FlightVu Surveillance System - System Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Installation Procedure

SUBTASK 23-75-04-865-001

(1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

(a) Circuit Breaker Panel, P18-2

1) FLIGHTVU SYSTEM

SUBTASK 23-75-04-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

(2) Before you touch the FlightVu video switch unit, do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

(3) To install the FlightVu video switch unit, do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 23-75-04-420-002

(4) Remove the DO-NOT-CLOSE tag and close this circuit breaker:

(a) Circuit Breaker Panel, P18-2

1) FLIGHTVU SYSTEM

E. Test the Video Switch Unit

SUBTASK 23-75-04-730-001

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

(2) To test the FlightVu system, do this task: FlightVu Surveillance System - System Test, TASK 23-75-00-730-803

EFFECTIVITY
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F. Put the Airplane back to Its Initial Condition

SUBTASK 23-75-04-865-002

(1) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
117A	Electronic Equipment Access Door

(2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— **END OF TASK** —————

EFFECTIVITY
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FLIGHTVU LCD MONITOR - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A removal of the FlightVu LCD Monitor.

HAP

(2) An installation of the FlightVu LCD Monitor.

HAP

B. The FlightVu LCD monitor is located in the aft pedestal or Overhead panel.

HAP

TASK 23-75-05-000-801

2. FlightVu LCD Monitor - Removal

HAP

HAP

A. References

HAP

Reference	Title
-----------	-------

HAP

20-40-12-000-802 ESDS Handling for Metal Encased Unit Removal (P/B 201)

HAP

20-40-12-400-804 Conductive Dust Cap and Connector Cover Installation (P/B 201)

HAP

B. Location Zones

HAP

Zone	Area
------	------

HAP

211 Flight Compartment - Left

HAP

212 Flight Compartment - Right

HAP

C. Removal Procedure

HAP

SUBTASK 23-75-05-865-001

HAP

(1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

HAP

(a) Circuit Breaker Panel, P18-2

HAP

1) FLIGHTVU SYSTEM

HAP

SUBTASK 23-75-05-020-001

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

HAP

HAP

HAP

(2) Before you touch the FlightVu LCD Monitor, do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP

(3) Do these steps to remove the LCD monitor:

HAP

(a) Loosen the four quarter-turn fasteners.

HAP

(b) Carefully lift the LCD monitor to get access to the electrical connector.

HAP

(c) Disconnect the electrical connector.

HAP

(d) To install protective covers on the electrical connector, do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

HAP

END OF TASK

HAP

HAP

TASK 23-75-05-400-801

3. FlightVu LCD Monitor - Installation

HAP

HAP

A. References

HAP

Reference	Title
-----------	-------

HAP

20-40-12-000-804 Conductive Dust Cap and Conductor Cover Removal (P/B 201)

HAP

20-40-12-400-802 ESDS Handling for Metal Encased Unit Installation (P/B 201)

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HAP 001-013, 015-026, 028-030

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(Continued)

HAP	Reference	Title
HAP	23-75-00-730-803	FlightVu Surveillance System - System Test (P/B 501)
HAP	24-22-00-860-811	Supply Electrical Power (P/B 201)
HAP	24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

HAP	Zone	Area
HAP	211	Flight Compartment - Left
HAP	212	Flight Compartment - Right

C. Installation Procedure

HAP SUBTASK 23-75-05-865-002

HAP (1) Make sure that this circuit breaker is open:

HAP (a) Circuit Breaker Panel, P18-2

HAP 1) FLIGHTVU SYSTEM

HAP SUBTASK 23-75-05-420-001

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the LCD Monitor, do this task: ESDS Handling for Metal Encased Unit
HAP Installation, TASK 20-40-12-400-802.

HAP SUBTASK 23-75-05-420-002

HAP (3) Do these steps to install the LCD Monitor:

HAP (a) To remove the protective covers from the electrical connector, do this task: Conductive
HAP Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.

HAP (b) Examine the electrical connector for bent or broken pins, dirt, and damage.

HAP (c) Connect the electrical connector.

HAP (d) Put the LCD monitor in its position on the P8 panel.

HAP (e) Tighten the four quarter-turn fasteners.

HAP SUBTASK 23-75-05-865-003

HAP (4) Remove the DO-NOT-CLOSE tag and close the circuit breaker for the LCD Monitor that you
HAP installed:

HAP (a) Circuit Breaker Panel, P18-2

HAP 1) FLIGHTVU SYSTEM

D. Test the LCD Monitor

HAP SUBTASK 23-75-05-730-001

HAP (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP (2) To test the FlightVu system, do this task: FlightVu Surveillance System - System Test,
HAP TASK 23-75-00-730-803.

E. Put the Airplane Back to Its Initial Condition

HAP SUBTASK 23-75-05-942-001

HAP (1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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FLIGHTVU CONTROL PANEL - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) A removal of the FlightVu control panel.

HAP

(2) An installation of the FlightVu control panel.

HAP

B. The FlightVu control panel is located in the aft pedestal or overhead panel.

HAP

TASK 23-75-06-000-801

2. FlightVu Control Panel - Removal

HAP

A. References

HAP

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

HAP

HAP

HAP

B. Location Zones

HAP

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

HAP

HAP

HAP

C. Removal Procedure

HAP

SUBTASK 23-75-06-865-001

HAP

(1) Open the following circuit breaker and attach DO-NOT-CLOSE tags:

HAP

(a) Circuit Breaker Panel, P18-2

HAP

1) FLIGHTVU SYSTEM

HAP

SUBTASK 23-75-06-020-001

HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

HAP

HAP

HAP

(2) Before you touch the FlightVu control panel, do this task: ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP

(3) Do these steps to remove the control panel"

HAP

(a) Loosen the four quarter-turn fasteners.

HAP

(b) Carefully lift the control panel to get access to the electrical connector.

HAP

(c) Disconnect the electrical connector.

HAP

(d) To install protective covers on the electrical connector, do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

HAP

END OF TASK

HAP

HAP

TASK 23-75-06-400-801

3. FlightVu Control Panel - Installation

HAP

A. References

HAP

Reference	Title
20-40-12-000-804	Conductive Dust Cap and Conductor Cover Removal (P/B 201)
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)

HAP

HAP

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(Continued)

HAP	Reference	Title
HAP	23-75-00-730-803	FlightVu Surveillance System - System Test (P/B 501)
HAP	24-22-00-860-811	Supply Electrical Power (P/B 201)
HAP	24-22-00-860-812	Remove Electrical Power (P/B 201)

B. Location Zones

HAP	Zone	Area
HAP	211	Flight Compartment - Left
HAP	212	Flight Compartment - Right

C. Installation Procedure

SUBTASK 23-75-06-865-002

(1) Make sure that this circuit breaker is open:

(a) Circuit Breaker Panel, P18-2

1) FLIGHTVU SYSTEM

SUBTASK 23-75-06-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

(2) Before you touch the control panel, do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

(3) Do these steps to install the control panel:

(a) To remove the protective covers from the electrical connector, do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.

(b) Examine the electrical connector for bent or broken pins, dirt, and damage.

(c) Connect the electrical connector.

(d) Put the control panel in its position on the P8 panel.

(e) Tighten the four quarter-turn fasteners.

SUBTASK 23-75-06-865-003

(4) Remove the DO-NOT-CLOSE tag and close the circuit breaker for the Control Panel that you installed:

(a) Circuit Breaker Panel, P18-2

1) FLIGHTVU SYSTEM

D. Test the Control Panel

SUBTASK 23-75-06-730-001

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

(2) To test the FlightVu system, do this task: FlightVu Surveillance System - System Test, TASK 23-75-00-730-803

E. Put the Airplane Back to Its Initial Condition

SUBTASK 23-75-06-942-001

(1) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

————— END OF TASK —————

EFFECTIVITY
HAP 001-013, 015-026, 028-030

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VIDEO SWITCH - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) Removal of the video switch.

HAP

(2) Installation of the video switch.

HAP

B. The video switch, M3001, is installed in a frame, above the ceiling panel, at STA 344, RBL 3.

HAP

TASK 23-75-07-000-801

HAP

2. Video Switch - Removal

HAP

A. General

HAP

(1) The video switch, M3001, is a component of the flight deck entry video system.

HAP

B. References

HAP

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
25-21-71-000-801	Lowered Ceiling Removal (P/B 401)
25-21-71-840-801	Prepare to Remove the Lowered Ceiling Panels (P/B 401)

HAP

HAP

HAP

HAP

C. Location Zones

HAP

Zone	Area
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP

HAP

D. Prepare for Removal

HAP

SUBTASK 23-75-07-865-002

HAP

(1) Open this circuit breaker and install safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP

HAP

SUBTASK 23-75-07-010-001

HAP

(2) Get access to the video switch. Remove the lowered ceiling panel at STA 340, BL3. These are the tasks:

HAP

Prepare to Remove the Lowered Ceiling Panels, TASK 25-21-71-840-801, and

HAP

Lowered Ceiling Removal, TASK 25-21-71-000-801.

HAP

HAP

E. Removal Procedure

HAP

SUBTASK 23-75-07-865-001

HAP

(1) Make sure that this circuit breaker is open and has safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP

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HAP SUBTASK 23-75-07-800-001

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the component, do this task:
HAP ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP SUBTASK 23-75-07-030-001
HAP (3) On the video switch [1], disconnect the electrical connector from the J2 receptacle.

HAP SUBTASK 23-75-07-030-002
HAP (4) On the video switch [1], disconnect the electrical bond cable from the bond stud.

HAP SUBTASK 23-75-07-020-003
HAP (5) Remove the four captive screws that attach the video switch [1] to the support, and remove the
HAP video switch.

HAP (a) Put protective covers on the J2 receptacle, and electrical cable connector.

————— **END OF TASK** —————

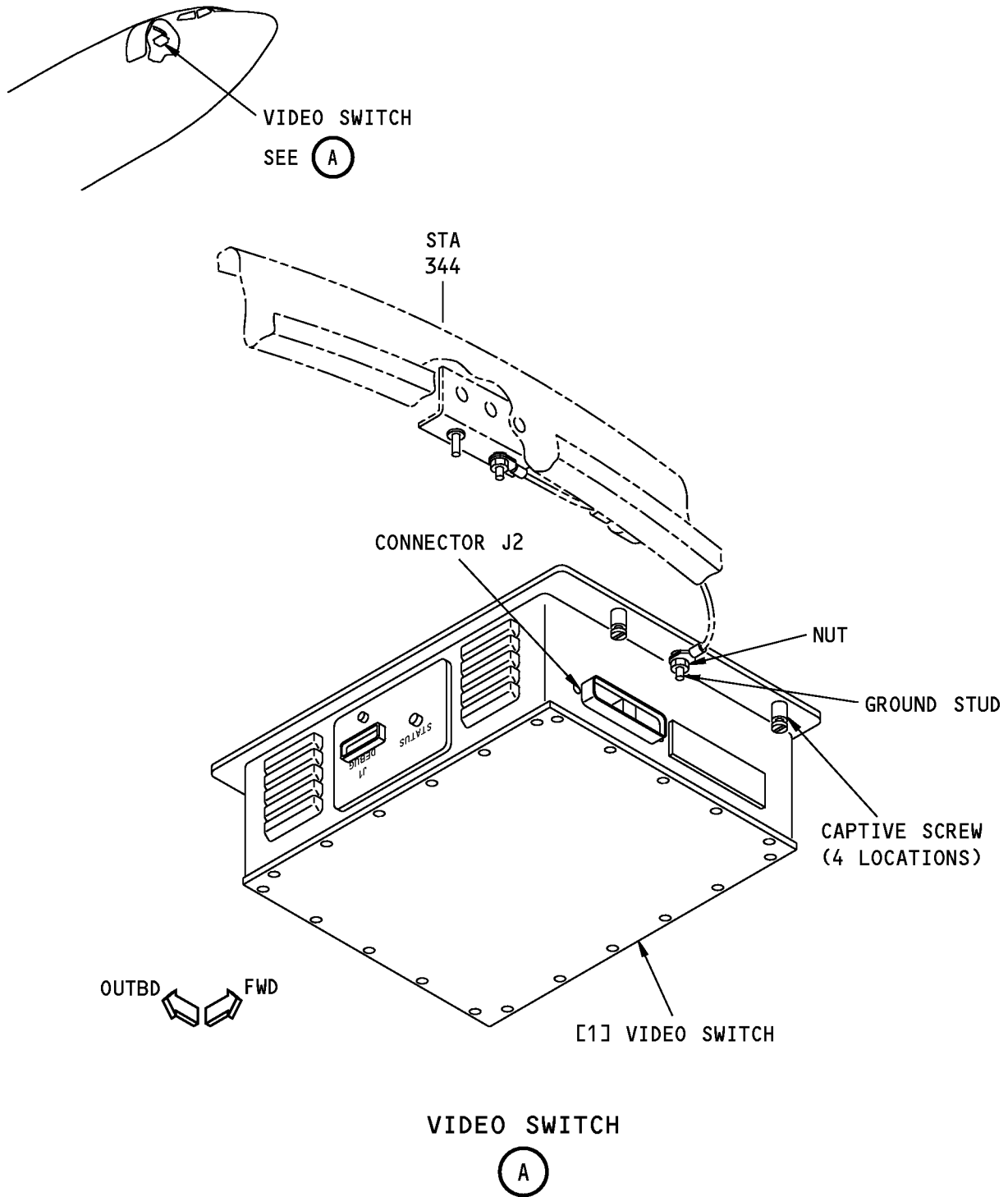
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**Video Switch Installation
Figure 401/23-75-07-990-802**

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HAP TASK 23-75-07-400-801

HAP 3. Video Switch - Installation

HAP A. General

HAP (1) The video switch, M3001, is a component of the flight deck entry video surveillance system
HAP (FDEVSS).

HAP B. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
23-75-00-730-804	Flight Deck Entry Video Surveillance System - System Test (P/B 501)
25-21-71-000-801	Lowered Ceiling Removal (P/B 401)
25-21-71-400-801	Lowered Ceiling Installation (P/B 401)

HAP C. Location Zones

Zone	Area
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP D. Prepare for Installation

HAP SUBTASK 23-75-07-865-003

HAP (1) Open this circuit breaker:

HAP F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-07-010-002

HAP (2) Make sure you have access to the installation area at STA 340, RBL3, above the ceiling panel.
HAP (Lowered Ceiling Removal, TASK 25-21-71-000-801).

HAP E. Installation Procedure

HAP SUBTASK 23-75-07-865-004

HAP (1) Make sure that this circuit breaker is open and has safety tag:

HAP F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-07-800-002

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the component, do this task:

HAP ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP SUBTASK 23-75-07-420-001

HAP (3) Put the video switch [1] in the support, and attach with the four captive screws on the base.

HAP SUBTASK 23-75-07-430-001

HAP (4) On the video switch [1], connect the electrical bonding cable to the bonding stud.

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HAP
 HAP SUBTASK 23-75-07-430-002
 HAP (5) On the video switch [1], connect the electrical connector to the 80-pin J2 receptacle.
 HAP SUBTASK 23-75-07-865-005

HAP (6) Remove the safety tag and close this circuit breaker:

HAP F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-07-710-001

HAP (7) Do the FDEVSS system test. This is the task:
 HAP Flight Deck Entry Video Surveillance System - System Test, TASK 23-75-00-730-804.

HAP F. Put the Airplane Back to its Usual Condition

HAP SUBTASK 23-75-07-410-001

HAP (1) Install the applicable ceiling panels. This is the task:
 HAP Lowered Ceiling Installation, TASK 25-21-71-400-801.

————— **END OF TASK** —————

EFFECTIVITY
 HAP 037-054, 101-999

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HAP CAUTION: DISCONNECT ALL ELECTRICAL CONNECTORS PRIOR TO REMOVAL OF BRACKET ASSEMBLY, IF THE CCUS REMAIN ATTACHED TO BRACKET ASSEMBLY.

HAP (b) Disconnect the electrical connectors.

HAP (c) Remove four screws and washers.

HAP (d) Remove bracket assembly.

END OF TASK

HAP TASK 23-75-08-400-801

3. FlightVu Camera Control Unit - Installation

A. References

Table with 2 columns: Reference, Title. Rows include 20-40-12-000-804, 20-40-12-400-802, 23-75-00-730-803, 24-22-00-860-811, 24-22-00-860-812.

B. Location Zones

Table with 2 columns: Zone, Area. Rows include 231, 232.

C. Installation Procedure

SUBTASK 23-75-08-865-002

(1) Make sure these circuit breakers are open:

(a) Circuit Breaker Panel, P18-2:

1) FLIGHTVU SYSTEM

SUBTASK 23-75-08-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

(2) Before you touch the camera control unit, do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

(3) Do these steps to install the camera control unit:

(a) To remove the protective covers from the electrical connectors, do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.

(b) Examine the electrical connectors for bent or broken pins, dirt, and damage.

(c) Put the camera control unit in its position on the ceiling panel or bracket assembly.

(d) Install four screws and washers.

(e) Connect the electrical connectors.

EFFECTIVITY HAP 001-013, 015-026, 028-030

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HAP

SUBTASK 23-75-08-420-002

HAP

- (4) Do these steps to install bracket assembly.

HAP

NOTE: Installation of the bracket assembly can be accomplished before or after the CCUs have been installed in bracket.

HAP

HAP

- (a) Gain access to the overhead interior in the area around the flight deck door.

HAP

- (b) Put the bracket assembly in its position on the ceiling panel.

HAP

- (c) Install four screws and washers.

HAP

- (d) Connect the electrical connectors.

HAP

SUBTASK 23-75-08-420-003

HAP

- (5) Remove the DO-NOT-CLOSE tag and close the circuit breaker for the control panel that you installed:

HAP

HAP

- (a) Circuit Breaker Panel, P18-2:

HAP

- 1) FLIGHTVU SYSTEM

HAP

D. Test the Camera Control Unit

HAP

SUBTASK 23-75-08-420-004

HAP

- (1) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

HAP

- (2) To test the FlightVu system, do this task: FlightVu Surveillance System - System Test, TASK 23-75-00-730-803.

HAP

HAP

E. Put the Airplane Back to Its Initial Condition

HAP

SUBTASK 23-75-08-940-001

HAP

- (1) Close and secure all access panels opened for this procedure.

HAP

- (2) Do this task: Remove Electrical Power, TASK 24-22-00-860-812.

END OF TASK

EFFECTIVITY

HAP 001-013, 015-026, 028-030

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CAMERA CONTROL UNIT - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) Removal of the video switch.

HAP

(2) Installation of the video switch.

HAP

TASK 23-75-11-000-801

HAP

2. Camera Control Unit - Removal

HAP

(Figure 401)

HAP

A. General

HAP

(1) The camera control units are components of the flight deck entry video surveillance system.

HAP

B. References

HAP

Reference

Title

HAP

20-40-12-000-802

ESDS Handling for Metal Encased Unit Removal (P/B 201)

HAP

25-21-31-420-801

Sidewall Lining Panel Removal (Forward Entry Doorway) (P/B 401)

HAP

25-21-71-000-801

Lowered Ceiling Removal (P/B 401)

HAP

25-21-71-840-801

Prepare to Remove the Lowered Ceiling Panels (P/B 401)

HAP

C. Location Zones

HAP

Zone

Area

HAP

220

Subzone - Passenger Compartment - Body Station 259.50 to 360.00

HAP

222

Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP

D. Prepare for Removal

HAP

SUBTASK 23-75-11-865-001

HAP

(1) Open this circuit breaker and install safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

Row

Col

Number

Name

HAP

B

1

C01641

SURVEILLANCE CAMERA

HAP

SUBTASK 23-75-11-010-001

HAP

(2) Get access to each camera control unit to be removed. These are the tasks:

HAP

Prepare to Remove the Lowered Ceiling Panels, TASK 25-21-71-840-801, and

HAP

Lowered Ceiling Removal, TASK 25-21-71-000-801.

HAP

Sidewall Lining Panel Removal (Forward Entry Doorway), TASK 25-21-31-420-801

HAP

E. Removal Procedure

HAP

SUBTASK 23-75-11-865-002

HAP

(1) Make sure that this circuit breaker is open and has safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

Row

Col

Number

Name

HAP

B

1

C01641

SURVEILLANCE CAMERA

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HAP

SUBTASK 23-75-11-869-001

HAP
HAP
HAP

CAUTION: DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE COMPONENTS.

HAP

(2) Before you touch the component, do this task:

HAP
HAP

ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

SUBTASK 23-75-11-030-001

HAP
HAP

(3) Disconnect the camera electrical connector from the camera control unit [1].

SUBTASK 23-75-11-030-002

HAP
HAP

(4) Disconnect connector D12491 from the camera control unit [1]

SUBTASK 23-75-11-020-001

HAP
HAP

(5) Remove the two pan head screws [2] and two washers [3], and then remove the camera control unit [1] from the panel.

HAP

(a) Put protective covers on the wire connectors, and CCU receptacles.

————— **END OF TASK** —————

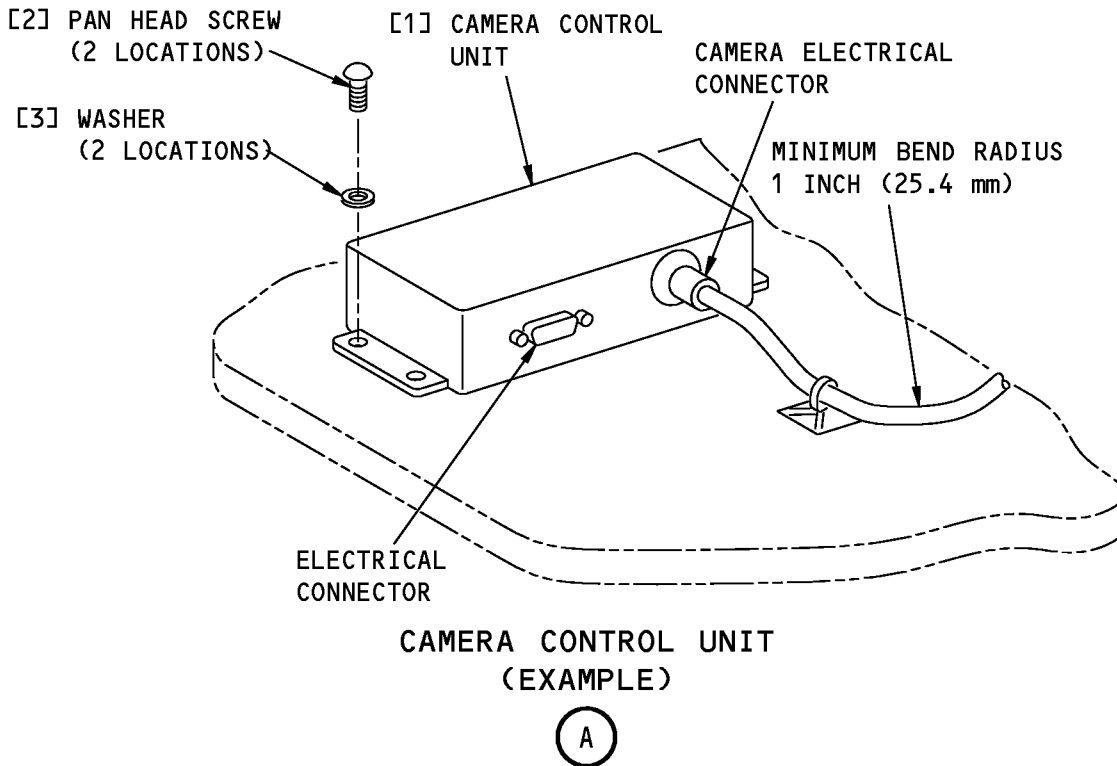
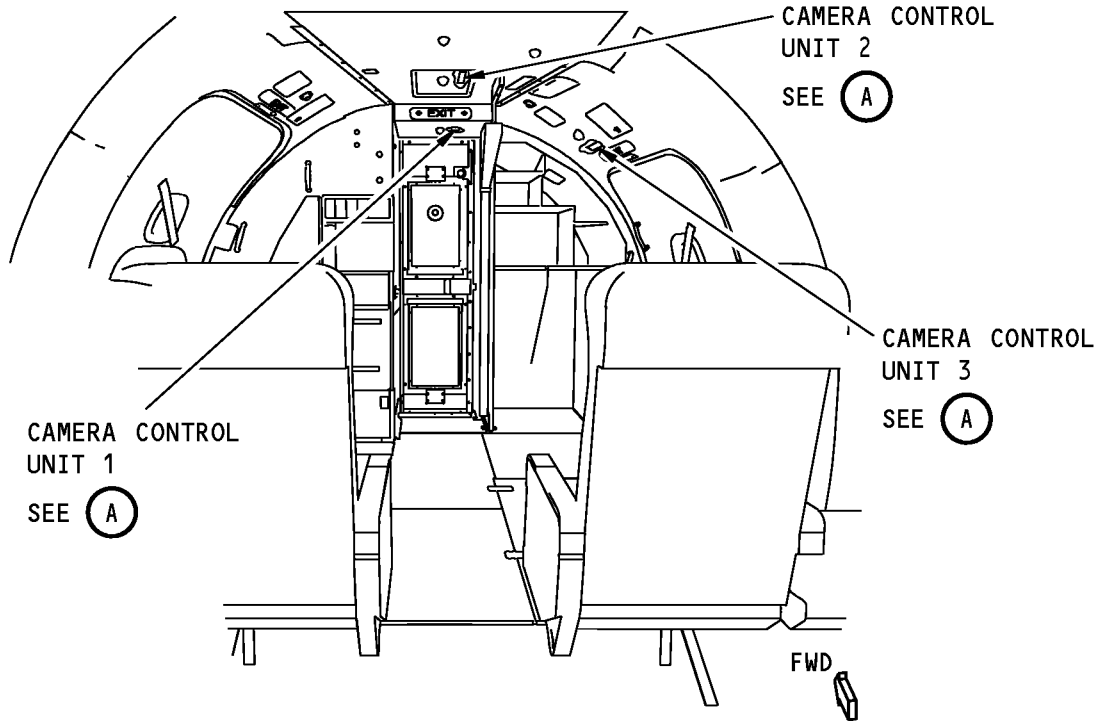
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Camera Control Unit Installation
Figure 401/23-75-11-990-801

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HAP TASK 23-75-11-400-801

HAP 3. Camera Control Unit - Installation

HAP Figure 401

HAP A. General

HAP (1) The three camera control units, M3005, M3007, and M3009, are components of the flight deck entry video surveillance system.

HAP B. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
23-75-00-730-804	Flight Deck Entry Video Surveillance System - System Test (P/B 501)
25-21-31-420-801	Sidewall Lining Panel Removal (Forward Entry Doorway) (P/B 401)
25-21-31-420-802	Sidewall Lining Panel Installation (Forward Entry Doorway) (P/B 401)
25-21-71-000-801	Lowered Ceiling Removal (P/B 401)
25-21-71-000-805	Close Out Panel Removal, Forward Lowered Ceiling (P/B 401)
25-21-71-400-801	Lowered Ceiling Installation (P/B 401)
25-21-71-400-805	Close Out Panel Installation, Forward Lowered Ceiling (P/B 401)

HAP C. Location Zones

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP D. Prepare for Installation

HAP SUBTASK 23-75-11-865-003

HAP (1) Open this circuit breaker:

HAP F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-11-010-002

HAP (2) Get access to the applicable camera control unit [1]. These are the tasks:

HAP Lowered Ceiling Removal, TASK 25-21-71-000-801,

HAP Close Out Panel Removal, Forward Lowered Ceiling, TASK 25-21-71-000-805,

HAP Sidewall Lining Panel Removal (Forward Entry Doorway), TASK 25-21-31-420-801.

HAP E. Installation Procedure

HAP SUBTASK 23-75-11-865-004

HAP (1) Make sure that this circuit breaker is open and has safety tag:

HAP F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

EFFECTIVITY
HAP 037-054, 101-999

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HAP SUBTASK 23-75-11-869-002

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the electrical components, do this task:
HAP ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP SUBTASK 23-75-11-420-001

HAP **CAUTION:** DO NOT PULL, TWIST, OR BEND THE CAMERA CABLE MORE THAN THE MINIMUM
HAP RADIUS OF 1 IN. (25 MM). IF YOU BEND, PULL, OR TWIST THE CABLE TOO MUCH,
HAP DAMAGE TO THE CABLE CAN OCCUR.

HAP (3) Install the illuminator. These are the steps:
HAP (a) Put the camera control unit [1] against the far-side of the applicable ceiling panel, or
HAP doorway liner, and align with the insert holes. Attach with two pan head screws [2] and two
HAP washers [3].

HAP SUBTASK 23-75-11-430-001

HAP (4) Connect the camera electrical camera to the camera control unit [1].

HAP SUBTASK 23-75-11-430-002

HAP (5) Connect the applicable electrical connector, D12491, D12493, or D12495, to the camera control
HAP unit [1].

HAP SUBTASK 23-75-11-865-005

HAP (6) Remove the safety tag and close this circuit breaker:

HAP F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-11-710-001

HAP (7) Make sure that all three camera control units operate correctly. Do this task: Flight Deck Entry
HAP Video Surveillance System - System Test, TASK 23-75-00-730-804.

HAP F. Put the Airplane Back to its Usual Condition

HAP SUBTASK 23-75-11-410-001

HAP (1) If access for additional tasks is not required, install the applicable ceiling and close-out panels,
HAP or door liners. These are the tasks:

HAP Lowered Ceiling Installation, TASK 25-21-71-400-801,

HAP Close Out Panel Installation, Forward Lowered Ceiling, TASK 25-21-71-400-805,

HAP Sidewall Lining Panel Installation (Forward Entry Doorway), TASK 25-21-31-420-802.

————— **END OF TASK** —————

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ILLUMINATOR - REMOVAL/INSTALLATION

HAP

1. General

HAP

HAP

A. This procedure has these tasks:

HAP

(1) Removal of the three infrared illuminators.

HAP

(2) Installation of the three infrared illuminators.

HAP

B. One illuminator is installed adjacent to each video camera. These are the locations:

HAP

(1) Illuminator 1, M3006, is above the ceiling panel at approximately STA 292, RBL 2, WL 285.

HAP

(2) Illuminator 2, M3008, is surface-mounted to the ceiling panel, at approximately STA 340, LBL2, WL 289.

HAP

(3) Illuminator 3, M3010, is surface-mounted to the door liner, at approximately STA 301, RBL 21, WL 286.

HAP

TASK 23-75-12-000-801

HAP

2. Illuminator - Removal

HAP

(Figure 401)

HAP

A. General

HAP

(1) The illuminators are components of the flight deck entry video surveillance system.

HAP

(2) To remove the illuminator from the support, you must cut the wires on the aircraft-side of the splice.

HAP

B. References

HAP

HAP

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
25-21-31-420-801	Sidewall Lining Panel Removal (Forward Entry Doorway) (P/B 401)
25-21-71-000-801	Lowered Ceiling Removal (P/B 401)
25-21-71-840-801	Prepare to Remove the Lowered Ceiling Panels (P/B 401)

HAP

HAP

HAP

HAP

HAP

C. Location Zones

HAP

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP

HAP

HAP

HAP

D. Prepare for Removal

HAP

SUBTASK 23-75-12-865-001

HAP

(1) Open this circuit breaker and install safety tag:

HAP

F/O Electrical System Panel, P6-12

HAP

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP

HAP

SUBTASK 23-75-12-010-001

HAP

(2) Make sure you have access to the applicable illuminator, support, and connector splice. These are the tasks:

HAP

Prepare to Remove the Lowered Ceiling Panels, TASK 25-21-71-840-801, and

HAP

Lowered Ceiling Removal, TASK 25-21-71-000-801, and

HAP

Sidewall Lining Panel Removal (Forward Entry Doorway), TASK 25-21-31-420-801.

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HAP E. Removal Procedure

HAP SUBTASK 23-75-12-865-002

HAP (1) Make sure that this circuit breaker is closed:

HAP F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-12-869-001

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the component, do this task:

HAP ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP SUBTASK 23-75-12-030-001

HAP (3) To remove the illuminator adjacent to camera 1, do the steps that follow:

HAP (a) From above the ceiling panel, remove two self-locking nuts [2] and two washers [3] that
HAP attach the illuminator to the support [6].

HAP (b) Cut the illuminator cable on each side of the splice connector.

HAP 1) Discard the splice connector.

HAP (c) From below the support, remove the illuminator with the attached wire.

HAP SUBTASK 23-75-12-030-002

HAP (4) To remove the illuminator adjacent to camera 2, do the steps that follow:

HAP (a) Remove two screws [8] that attach the support [9] to the panel.

HAP (b) Remove two self-locking nuts [2] and two washers [3] that attach the illuminator to the
HAP support [9].

HAP (c) Cut the illuminator cable on each side of the splice.

HAP 1) Discard the splice connector.

HAP (d) Remove the illuminator [1] and wire from the support [9].

HAP SUBTASK 23-75-12-030-003

HAP (5) To remove the illuminator adjacent to camera 3, do the steps that follow:

HAP (a) Remove two screws [8] that attach the support [10] to the panel.

HAP (b) Remove two self-locking nuts [2] and two washers [3] that attach the illuminator to the
HAP support [10].

HAP (c) Cut the illuminator cable on each side of the splice.

HAP 1) Discard the splice connector.

HAP (d) Remove the illuminator [1] and wire from the support [10].

————— **END OF TASK** —————

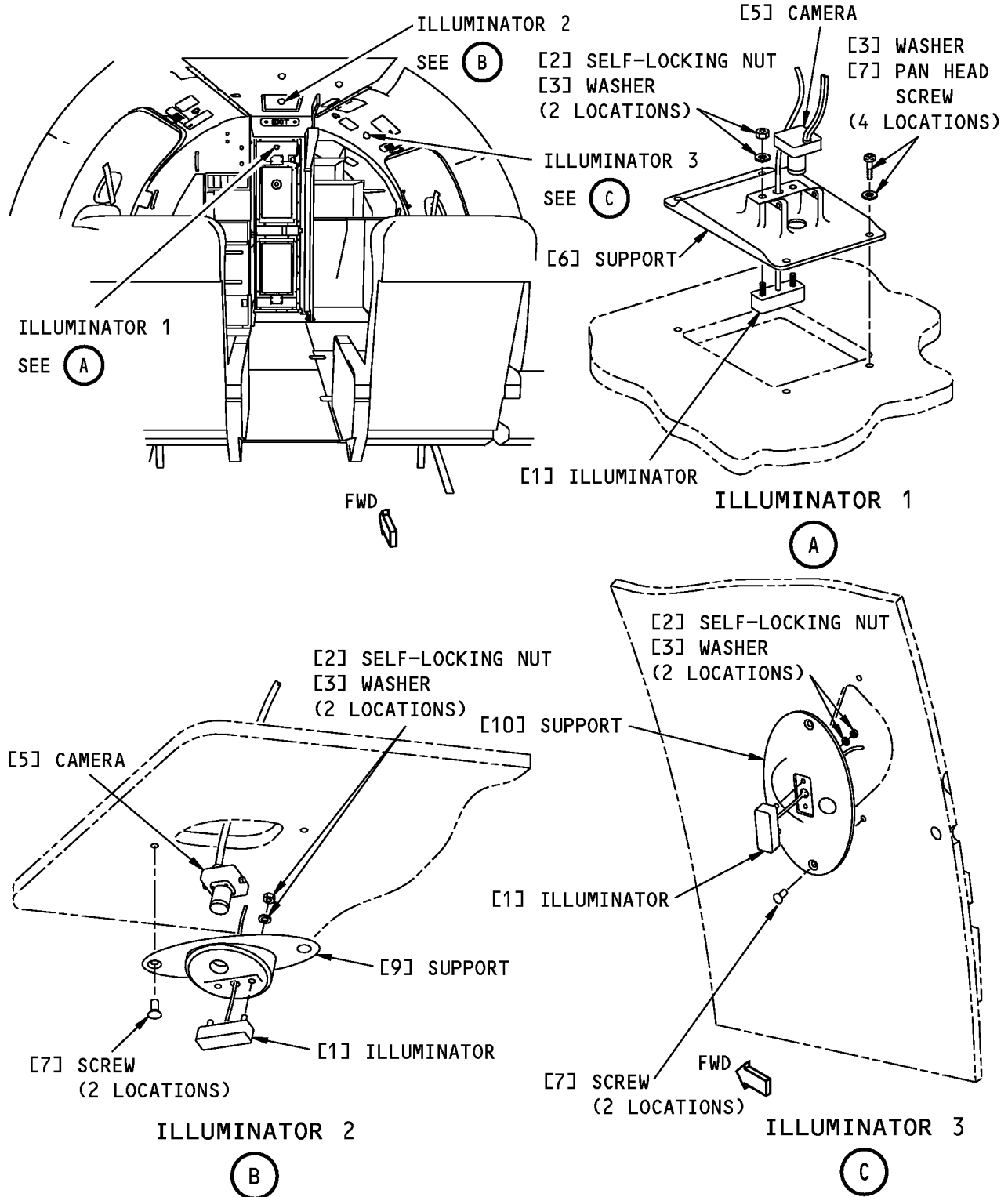
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Illuminator Installation
Figure 401/23-75-12-990-801

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HAP TASK 23-75-12-400-801

HAP 3. Illuminator - Installation

HAP (Figure 401)

HAP A. General

HAP (1) The three illuminators, M3006, M3008, and M3010, are components of the flight deck entry video surveillance system.

HAP (2) You must install a new electrical splice on the illuminator after the cable is fed through the support.

HAP B. References

Reference	Title
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)
23-75-00-730-804	Flight Deck Entry Video Surveillance System - System Test (P/B 501)
25-21-31-420-801	Sidewall Lining Panel Removal (Forward Entry Doorway) (P/B 401)
25-21-31-420-802	Sidewall Lining Panel Installation (Forward Entry Doorway) (P/B 401)
25-21-71-000-805	Close Out Panel Removal, Forward Lowered Ceiling (P/B 401)
25-21-71-400-801	Lowered Ceiling Installation (P/B 401)
25-21-71-400-805	Close Out Panel Installation, Forward Lowered Ceiling (P/B 401)
25-21-71-840-801	Prepare to Remove the Lowered Ceiling Panels (P/B 401)
SWPM 20-30-12	Assembly of Splices

HAP C. Location Zones

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00
222	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Right

HAP D. Prepare for Installation

HAP SUBTASK 23-75-12-865-004

HAP (1) Open this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-12-010-002

HAP (2) Make sure you have access to the illuminator splice connector, behind the applicable ceiling panel or door liner, for each illuminator to be installed. These are the tasks:

- HAP Prepare to Remove the Lowered Ceiling Panels, TASK 25-21-71-840-801,
- HAP Close Out Panel Removal, Forward Lowered Ceiling, TASK 25-21-71-000-805,
- HAP Sidewall Lining Panel Removal (Forward Entry Doorway), TASK 25-21-31-420-801.

HAP E. Installation Procedure

HAP SUBTASK 23-75-12-865-003

HAP (1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
B	1	C01641	SURVEILLANCE CAMERA

EFFECTIVITY
HAP 037-054, 101-999

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HAP SUBTASK 23-75-12-869-002

HAP **CAUTION:** DO NOT TOUCH THE CONNECTOR PINS, OR OTHER CONDUCTORS. IF YOU TOUCH
HAP THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE
HAP COMPONENTS.

HAP (2) Before you touch the component, do this task:
HAP ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802.

HAP SUBTASK 23-75-12-420-001

HAP **CAUTION:** DO NOT PULL, TWIST, OR BEND THE CAMERA CABLE MORE THAN THE MINIMUM
HAP RADIUS OF 1 IN. (25 MM). IF YOU BEND, PULL, OR TWIST THE CABLE TOO MUCH,
HAP DAMAGE TO THE CABLE CAN OCCUR.

- HAP (3) Install the illuminator. These are the steps:
- HAP (a) From the appearance-side of the support, insert the illuminator cable through center hole,
HAP and seat the illuminator [1] completely against the support, with the two mounting studs
HAP inserted through the attachment holes.
 - HAP (b) From the far-side of the support, attach the illuminator [1] to the support with two
HAP washers [3] and self-locking nuts [2].
 - HAP (c) Connect the illuminator wires to the aircraft wiring with two splices [4], (SWPM 20-30-12).

HAP **NOTE:** 24V dc (volts direct current) from the VS goes to RED.

- HAP (d) If applicable, install the support to the ceiling panel.

HAP SUBTASK 23-75-12-865-005

- HAP (4) Remove the safety tag and close this circuit breaker:

HAP F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01641	SURVEILLANCE CAMERA

HAP SUBTASK 23-75-12-710-001

- HAP (5) Make sure that all three illuminators operate correctly. Do this task: Flight Deck Entry Video
HAP Surveillance System - System Test, TASK 23-75-00-730-804.

F. Put the Airplane Back to its Usual Condition

HAP SUBTASK 23-75-12-410-001

- HAP (1) If access for additional tasks is not required, install the applicable ceiling and close-out panels,
HAP or door liners. These are the tasks:
HAP Lowered Ceiling Installation, TASK 25-21-71-400-801,
HAP Close Out Panel Installation, Forward Lowered Ceiling, TASK 25-21-71-400-805,
HAP Sidewall Lining Panel Installation (Forward Entry Doorway), TASK 25-21-31-420-802.

————— **END OF TASK** —————

EFFECTIVITY
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FLIGHT COMPARTMENT PC POWER SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure contains an operational test for the Flight Compartment PC Power System. Do this test when you replace a PC Power System component.

TASK 23-82-00-710-801

2. Flight Compartment PC Power System - Operational Test

A. References

<u>Reference</u>	<u>Title</u>
24-22-00-860-811	Supply Electrical Power (P/B 201)

B. Location Zones

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 23-82-00-861-001

(1) Supply Electrical Power, TASK 24-22-00-860-811

SUBTASK 23-82-00-865-001

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01643	FD PC POWER

SUBTASK 23-82-00-200-002

(3) Do the steps that follow:

- (a) Lift up the Outlet unit LED cover.
- (b) Examine the outlet unit LEDs on the P6 and P18 panels.
- (c) Make sure that the outlet unit status LEDs are on and green in color. This shows that there were no faults during the BITE test.

END OF TASK

EFFECTIVITY

HAP 038, 042-046, 051-053

23-82-00

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OUTLET UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of an outlet unit.
- (2) The installation of an outlet unit.

B. The outlet units are installed on the P6 and P18 panels, behind the captain and first officer seats.

TASK 23-82-01-000-801

2. Outlet Unit Removal

Figure 401

A. Location Zones

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

B. Removal Procedure

SUBTASK 23-82-01-865-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01643	FD PC POWER

SUBTASK 23-82-01-020-001

(2) Do these steps to remove the outlet unit (OU) [1] from the P6 or P18 panel:

- (a) Remove the cover plate from the panel:
 - 1) Remove the fasteners that attach the cover plate to the panel.
 - 2) Pull the cover plate out of the panel surface.

NOTE: Do not pull out too hard, the wires are still attached to the back of the outlet.

- (b) Disconnect the electrical connectors.
- (c) Put protective covers on the electrical connectors.
- (d) Lift the outlet unit LED cover flap.
- (e) Loosen the screws [2] on the front panel of the OU [1].
- (f) Remove the OU [1] from the cover plate .

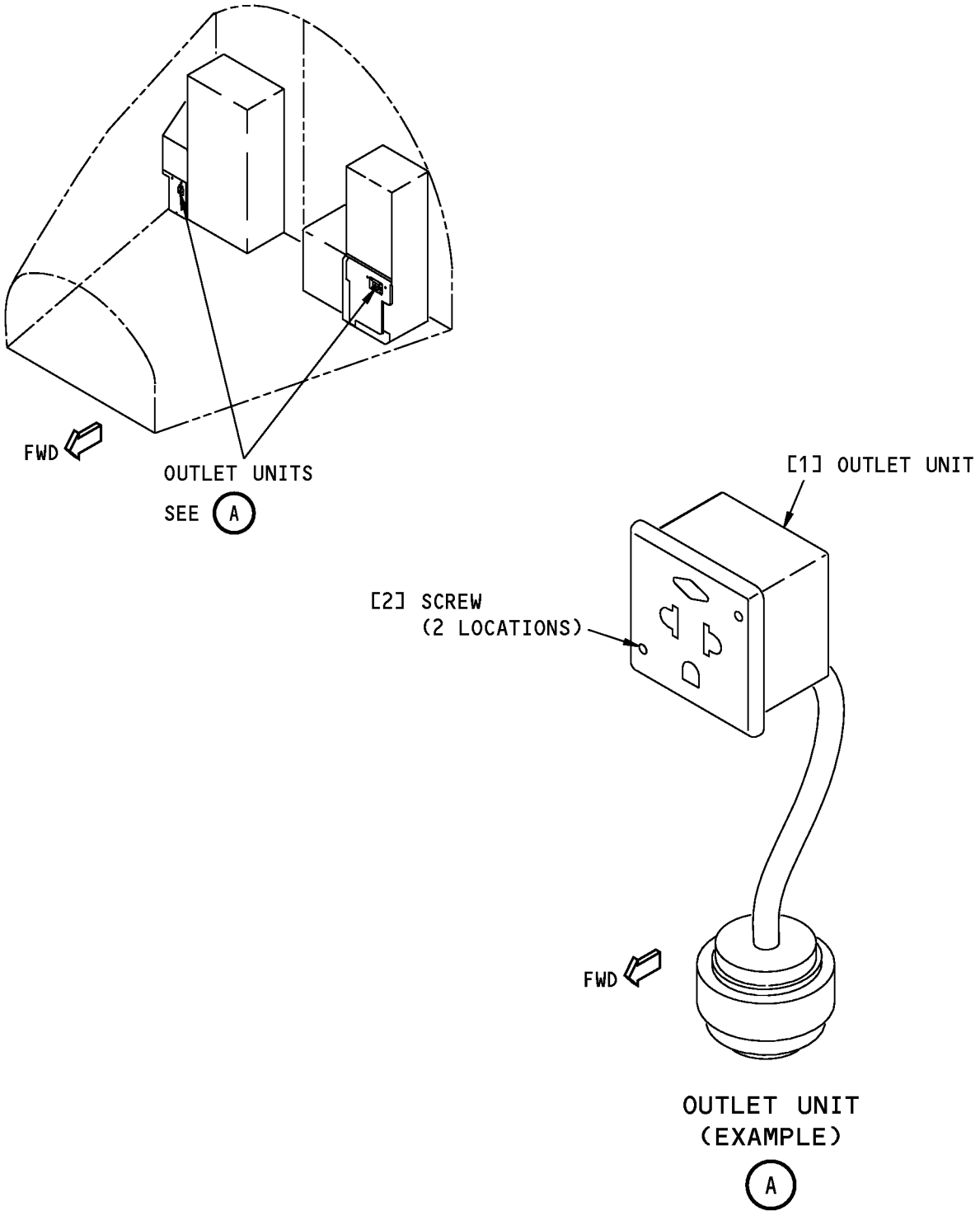
END OF TASK

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**Outlet Unit Installation
Figure 401/23-82-01-990-801**

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TASK 23-82-01-400-801

3. Outlet Unit Installation

Figure 401

A. References

Reference	Title
23-82-00-710-801	Flight Compartment PC Power System - Operational Test (P/B 501)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Installation Procedure

SUBTASK 23-82-01-865-002

- (1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
A	3	C01643	FD PC POWER

SUBTASK 23-82-01-400-001

- (2) Do the steps that follow to install the outlet unit (OU) [1]:
 - (a) Attach the OU [1] to the cover plate:
 - 1) Lift the outlet unit LED cover flap.
 - 2) Put the OU [1] into the cutout in the cover plate.
 - 3) Tighten the screws [2] on the front panel of the OU [1] to 5 ± 1 in-lb (1 ± 1 N·m).

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (b) Remove the electrical connector covers.
- (c) Connect the electrical connectors to the OU [1].
- (d) Install the cover plate to the panel.
 - 1) Install the fasteners.

SUBTASK 23-82-01-865-003

- (3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
A	3	C01643	FD PC POWER

D. Installation Test

SUBTASK 23-82-01-710-001

- (1) Do an operational test of the PC power system:

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- (a) Do this task: Flight Compartment PC Power System - Operational Test, TASK 23-82-00-710-801.

————— **END OF TASK** —————

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IN-SEAT POWER SUPPLY - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

- (1) The removal of an In-Seat Power Supply (ISPS).
- (2) The installation of an In-Seat Power Supply (ISPS).

B. The ISPS is installed in the EE bay.

TASK 23-82-02-000-801

2. In-Seat Power Supply Removal

Figure 401

A. Location Zones

<u>Zone</u>	<u>Area</u>
118	Electrical and Electronics Compartment - Right

B. Removal Procedure

SUBTASK 23-82-02-865-001

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01643	FD PC POWER

SUBTASK 23-82-02-010-001

(2) Remove the floor panel in the EE compartment to get access to the ISPS [1]:

- (a) Remove the fasteners.
- (b) Remove the floor panel.

SUBTASK 23-82-02-020-001

(3) Do the steps that follow to remove the ISPS [1]:

CAUTION: DO NOT TOUCH THE ELECTRICAL CONNECTOR CONTACT PINS. STATIC ELECTRICAL CHARGES THAT COLLECT ON THE SKIN CAN CAUSE DAMAGE TO THE ELECTROSTATIC SENSITIVE COMPONENTS INSTALLED IN THIS DEVICE.

- (a) Disconnect the electrical connectors [6] from the ISPS [1].
- (b) Disconnect the bonding jumper [5] from the ISPS [1]:
 - 1) Remove the nut [4] and washer [3] that attach the bonding jumper [5] to the ISPS [1].
 - 2) Keep the nut [4] and washer [3] for ISPS installation.
- (c) While you hold the ISPS [1], pull the quick release fasteners [2].
- (d) Remove the ISPS [1] from the mounting bracket .
- (e) If termination plugs are installed, remove and keep the termination plugs.
- (f) Put protective covers on the electrical connectors [6].

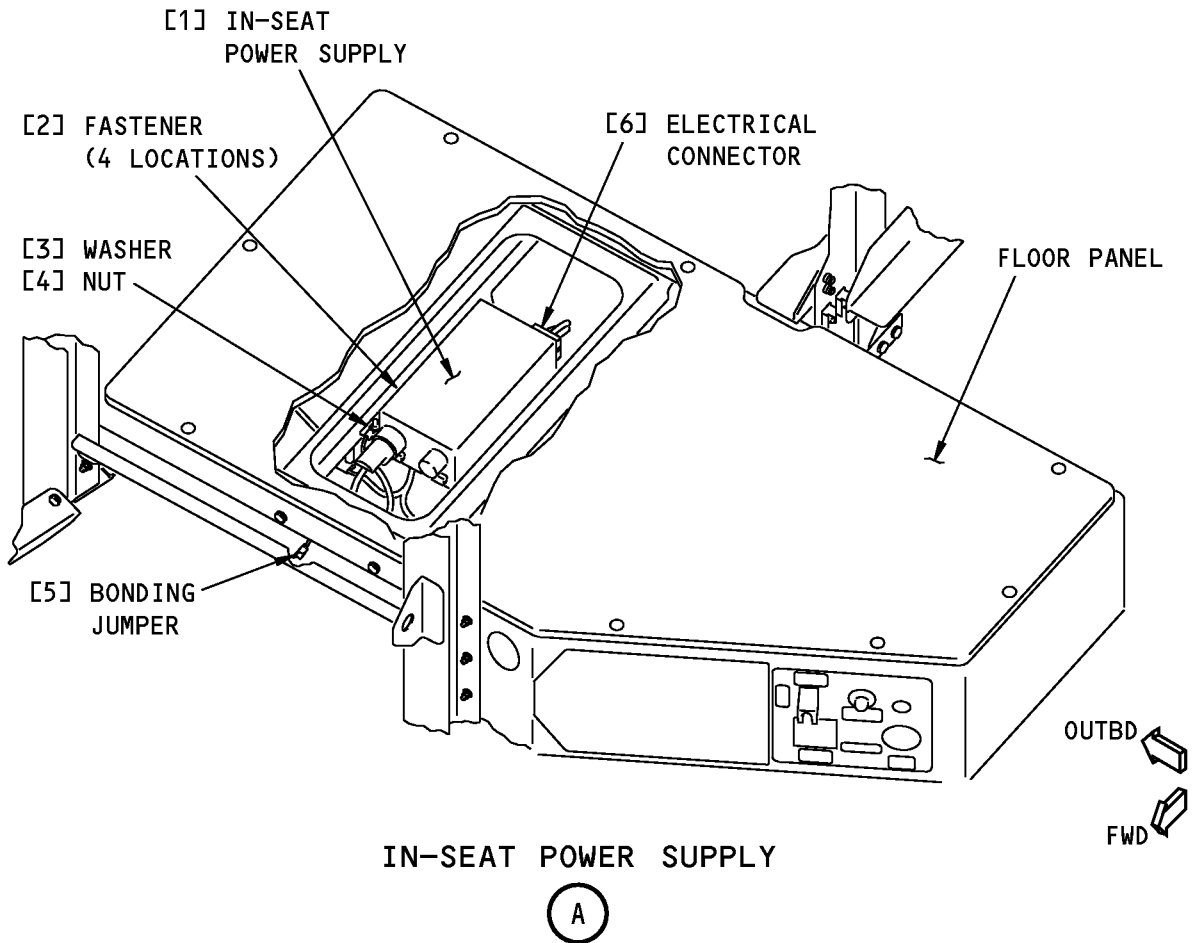
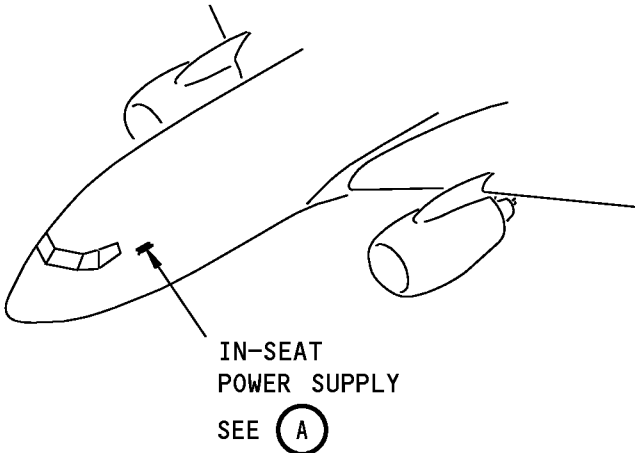
————— **END OF TASK** —————

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**In-Seat Power Supply Installation
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TASK 23-82-02-400-801

3. In-Seat Power Supply Installation

Figure 401

A. References

Reference	Title
23-82-00-710-801	Flight Compartment PC Power System - Operational Test (P/B 501)
SWPM 20-20-00	Standard Wiring Practices Manual

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Meter - Bonding (Approved Explosion Proof & Intrinsically Safe) (Part #: C15292 (MODEL T477W), Supplier: 01014, A/P Effectivity: 737-ALL) (Part #: M1, Supplier: 3AD17, A/P Effectivity: 737-ALL) (Part #: M1B, Supplier: 3AD17, A/P Effectivity: 737-ALL)

C. Location Zones

Zone	Area
118	Electrical and Electronics Compartment - Right

D. Installation Procedure

SUBTASK 23-82-02-865-002

(1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
A	3	C01643	FD PC POWER

SUBTASK 23-82-02-420-001

(2) Do the steps that follow to install the ISPS [1]:

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (a) Remove the electrical connector covers.
- (b) Examine the electrical connectors [6] for bent or broken pins, dirt, and damage.
- (c) Put the ISPS [1] in the correct position and lock the quick release fasteners [2].
- (d) Connect the electrical connectors [6] to the ISPS [1].
- (e) Connect the bonding jumper [5] to the ISPS [1]:
 - 1) Install the washer [3] and nut [4].
 - 2) Use a bonding meter, COM-1550 to measure the resistance between the ISPS [1] and the airplane structure (SWPM 20-20-00).
 - a) Make sure that the resistance is not more than 0.0025 ohms.

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SUBTASK 23-82-02-865-003

- (3) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01643	FD PC POWER

E. Installation Test

SUBTASK 23-82-02-710-001

- (1) Do the Operational Test for the Flight Compartment PC Power system.
- (a) Do this task: Flight Compartment PC Power System - Operational Test, TASK 23-82-00-710-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 23-82-02-410-001

- (1) Install the floor panel that you removed for access:
- (a) Install the fasteners.

————— **END OF TASK** —————

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