# CHAPTER



# LIGHTS

For Instructional Use Only



#### CHAPTER 33 LIGHTS

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Pag	e Date	COC
33-EFFECTIV	E PAGES		33-10-00			33-12-00	(cont)	
1 thru 6	AUG 01/2016		201	Feb 01/2016		5	Feb 01/2016	
33-CONTENT	S		202	Feb 01/2016		6	Feb 01/2016	
1	Feb 01/2016		203	Feb 01/2016		7	Feb 01/2016	
2	Feb 01/2016		204	Feb 01/2015		8	Feb 01/2015	
3	Feb 01/2016		205	Feb 01/2015		9	Feb 01/2015	
4	Feb 01/2016		206	Feb 01/2015		10	Feb 01/2016	
5	Feb 01/2016		207	Feb 01/2015		11	Feb 01/2015	
6	Feb 01/2016		208	Feb 01/2016		12	Feb 01/2015	
33-00-00			209	Feb 01/2015		13	Feb 01/2016	
1	Feb 01/2015		210	Feb 01/2016		14	Feb 01/2015	
2	BLANK		211	Feb 01/2015		15	Feb 01/2016	
33-00-00			212	BLANK		16	Feb 01/2015	
101	Feb 01/2015		33-11-00			17	Feb 01/2015	
102	BLANK		1	Feb 01/2015		18	Feb 01/2015	
33-00-00			2	BLANK		19	Feb 01/2015	
201	Feb 01/2015		33-11-01			20	Feb 01/2016	
202	Feb 01/2015		201	Feb 01/2015		21	Feb 01/2016	
203	Feb 01/2015		202	Feb 01/2015		22	Feb 01/2016	
204	Feb 01/2015		203	Feb 01/2015		23	Feb 01/2016	
33-10-00			204	Feb 01/2015		24	Feb 01/2016	
1	Feb 01/2015		33-11-02			25	Feb 01/2016	
2	Feb 01/2015		1	Feb 01/2015		26	Feb 01/2016	
3	Feb 01/2015		2	Feb 01/2015		33-12-00 C		
4	Feb 01/2016		33-11-02			201	Feb 01/2016	
5	Feb 01/2016		401	Feb 01/2016		201	BLANK	
6	Feb 01/2015		402	Feb 01/2016		33-12-00 C		
7	Feb 01/2015		403	Feb 01/2016			-	
8	Feb 01/2015		404	Feb 01/2015		201	Feb 01/2016	
9	Feb 01/2015		33-11-02			202	Feb 01/2016	
10	Feb 01/2015		601	Feb 01/2015		203	Feb 01/2016	
11	Feb 01/2016		602	BLANK		204	Feb 01/2016	
12	Feb 01/2016		33-12-00			33-12-01 C	-	
13	Feb 01/2016		1	Feb 01/2016		201	Feb 01/2016	
14	Feb 01/2016		2	Feb 01/2016		202	Feb 01/2016	
15	Feb 01/2016		3	Feb 01/2016		203	Feb 01/2016	
16	Feb 01/2016		4	Feb 01/2016		204	BLANK	

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33-12-01 Con	fig 2		33-21-00	(cont)		33-21-05		
201	Feb 01/2016		19	Feb 01/2016		501	Feb 01/2016	
202	Feb 01/2016		20	Feb 01/2016		502	BLANK	
203	Feb 01/2016		21	Feb 01/2016		33-21-06		
204	Feb 01/2016		22	Feb 01/2016		401	Feb 01/2015	
33-12-02			23	Feb 01/2016		402	BLANK	
201	Feb 01/2015		24	Feb 01/2016		33-22-00		
202	Feb 01/2015		25	Feb 01/2016		1	Feb 01/2016	
203	Feb 01/2015		26	Feb 01/2016		2	Feb 01/2016	
204	Feb 01/2015		27	Feb 01/2016		3	Feb 01/2016	
33-12-04			28	Feb 01/2016		4	Feb 01/2016	
201	Feb 01/2015		33-21-03			5	Feb 01/2016	
202	Feb 01/2015		201	Feb 01/2016		6	Feb 01/2016	
203	Feb 01/2015		202	Feb 01/2016		7	Feb 01/2016	
204	BLANK		203	Feb 01/2015		8	BLANK	
33-20-00			204	Feb 01/2016		33-22-01		
1	Feb 01/2015		205	Feb 01/2016		201	Feb 01/2015	
2	BLANK		206	Feb 01/2015		202	Feb 01/2016	
33-21-00			207	Feb 01/2015		202	Feb 01/2016	
1	Feb 01/2016		208	Feb 01/2016		203	Feb 01/2015	
2	Feb 01/2016		209	Feb 01/2015		204	Feb 01/2015	
3	Feb 01/2016		210	Feb 01/2015		205	Feb 01/2015	
4	Feb 01/2016		33-21-04			200	Feb 01/2015	
5	Feb 01/2016		401	Feb 01/2016		207	Feb 01/2015 Feb 01/2015	
6	Feb 01/2016		402	Feb 01/2016			Feb 01/2013	
7	Feb 01/2016		403	Feb 01/2016		33-22-02	E 04/0040	
8	Feb 01/2016		404	BLANK		201	Feb 01/2016	
9	Feb 01/2016		33-21-04			202	Feb 01/2016	
10	Feb 01/2016		501	Feb 01/2016		203	Feb 01/2016	
11	Feb 01/2016		502	BLANK		204	Feb 01/2015	
12	Feb 01/2016		33-21-05			33-22-03		
13	Feb 01/2016		401	Feb 01/2016		201	Feb 01/2015	
14	Feb 01/2016		402	Feb 01/2016		202	Feb 01/2015	
15	Feb 01/2016		403	Feb 01/2015		203	Feb 01/2015	
16	Feb 01/2016		404	Feb 01/2015		204	Feb 01/2015	
17	Feb 01/2016		405	Feb 01/2015		205	Feb 01/2015	
18	Feb 01/2016		406	Feb 01/2015		206	BLANK	

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Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	e Date	COC
33-23-00			33-23-02 Conf	ig 1 (cont)		33-30-00	(cont)	
1	Feb 01/2016		208	Feb 01/2016		5	Feb 01/2016	
2	Feb 01/2016		209	Feb 01/2016		6	Feb 01/2016	
3	Feb 01/2016		210	BLANK		33-30-00		
4	Feb 01/2016		33-23-02 Con	fig 2		201	Feb 01/2015	
5	Feb 01/2016		201	Feb 01/2016		202	Feb 01/2015	
6	Feb 01/2016		202	Feb 01/2016		203	Feb 01/2015	
7	Feb 01/2016		203	Feb 01/2016		204	Feb 01/2015	
8	Feb 01/2016		204	Feb 01/2016		205	Feb 01/2015	
9	Feb 01/2016		205	Feb 01/2016		206	Feb 01/2015	
10	Feb 01/2016		206	Feb 01/2016		207	Feb 01/2015	
11	Feb 01/2016		207	Feb 01/2016		208	Feb 01/2015	
12	Feb 01/2016		208	Feb 01/2016		33-30-00		
13	Feb 01/2016		209	Feb 01/2016		501	Feb 01/2015	
14	Feb 01/2016		210	Feb 01/2016		502	BLANK	
15	Feb 01/2016		33-23-02 Con	fig 3		33-40-00		
16	BLANK		201	Feb 01/2016		1	Feb 01/2016	
33-23-01			202	Feb 01/2016		2	Feb 01/2016	
401	Feb 01/2016		203	Feb 01/2016		3	Feb 01/2016	
402	Feb 01/2016		204	Feb 01/2016		4	Feb 01/2015	
403	Feb 01/2016		205	Feb 01/2016		5	Feb 01/2016	
404	Feb 01/2016		206	Feb 01/2016		6	Feb 01/2016	
405	Feb 01/2016		207	Feb 01/2016		7	Feb 01/2016	
406	Feb 01/2015		208	Feb 01/2016		8	Feb 01/2015	
407	Feb 01/2015		33-23-03			9	Feb 01/2015	
408	BLANK		401	Feb 01/2015		10	BLANK	
33-23-01			402	Feb 01/2015		33-41-00		
501	Feb 01/2016		403	Feb 01/2015		1	Feb 01/2015	
502	Feb 01/2016		404	Feb 01/2015		2	Feb 01/2015	
33-23-02 Con	ifig 1		33-23-03			3	Feb 01/2015	
201	Feb 01/2016		601	Feb 01/2016		4	BLANK	
202	Feb 01/2016		602	BLANK		33-41-01		
203	Feb 01/2016		33-30-00			401	Feb 01/2015	
204	Feb 01/2016		1	Feb 01/2016		402	Feb 01/2015	
205	Feb 01/2016		2	Feb 01/2016		403	Feb 01/2015	
206	Feb 01/2016		3	Feb 01/2016		404	Feb 01/2015	
207	Feb 01/2016		4	Feb 01/2016		405	Feb 01/2015	

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33-41-01 (	cont)		33-41-03	(cont)		33-43-01 Conf	ïg 1 (cont)	
406	Feb 01/2015		403	Feb 01/2015		210	Feb 01/2016	
407	Feb 01/2015		404	BLANK		211	Feb 01/2016	
408	Feb 01/2015		33-42-00			212	Feb 01/2016	
409	Feb 01/2015		1	Feb 01/2015		213	Feb 01/2016	
410	BLANK		2	BLANK		214	Feb 01/2016	
33-41-01 Co	onfig 1		33-42-01			215	Feb 01/2016	
401	Feb 01/2015		201	Feb 01/2015		216	Feb 01/2016	
402	BLANK		202	Feb 01/2015		217	Feb 01/2016	
33-41-01			203	Feb 01/2015		218	Feb 01/2016	
501	Feb 01/2015		204	Feb 01/2015		219	Feb 01/2016	
502	Feb 01/2015		205	Feb 01/2016		220	Feb 01/2016	
33-41-02			206	Feb 01/2015		33-43-01 Con	fig 3	
301	Feb 01/2015		207	Feb 01/2015		201	Feb 01/2015	С
302	Feb 01/2015		208	Feb 01/2015		202	Feb 01/2015	С
303	Feb 01/2015		209	Feb 01/2015		203	Feb 01/2015	С
304	BLANK		210	Feb 01/2015		204	Feb 01/2015	С
33-41-02			211	Feb 01/2015		205	Feb 01/2015	С
401	Feb 01/2015		212	BLANK		206	Feb 01/2015	С
402	Feb 01/2015		33-42-01			207	Feb 01/2015	С
403	Feb 01/2015		501	Feb 01/2015		208	Feb 01/2015	С
404	Feb 01/2015		502	BLANK		209	Feb 01/2015	С
405	Feb 01/2015		33-43-00			210	Feb 01/2015	С
406	BLANK		1	Feb 01/2015		211	Feb 01/2015	С
33-41-02			2	Feb 01/2015		212	Feb 01/2015	С
501	Feb 01/2015		3	Feb 01/2015		213	Feb 01/2015	С
502	Feb 01/2016		4	BLANK		214	Feb 01/2015	С
503	Feb 01/2016		33-43-01	Config 1		215	Feb 01/2015	С
504	Feb 01/2016		201	Feb 01/2016		216	Feb 01/2015	С
505	Feb 01/2015		202	Feb 01/2016		33-43-01		
506	BLANK		203	Feb 01/2016		501	Feb 01/2016	
33-41-02			204	Feb 01/2016		502	Feb 01/2016	
601	Feb 01/2015		205	Feb 01/2016		33-43-01		
602	Feb 01/2015		206	Feb 01/2016		601	Feb 01/2015	
33-41-03			207	Feb 01/2016		602	Feb 01/2016	
401	Feb 01/2015		208	Feb 01/2016		603	Feb 01/2015	
402	Feb 01/2015		209	Feb 01/2016		604	BLANK	

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33-43-01			33-44-00	(cont)		33-47-00 (	cont)	
801	Feb 01/2015		207	Feb 01/2015		214	BLANK	
802	Feb 01/2015		208	Feb 01/2015		33-50-00		
803	Feb 01/2015		209	Feb 01/2015		1	Feb 01/2016	
804	Feb 01/2015		210	Feb 01/2015		2	Feb 01/2016	
805	Feb 01/2015		33-45-00			3	Feb 01/2016	
806	Feb 01/2015		1	Feb 01/2015		4	Feb 01/2016	
807	Feb 01/2015		2	BLANK		5	Feb 01/2016	
808	Feb 01/2015		33-45-00			6	Feb 01/2016	
809	Feb 01/2015		401	Feb 01/2015		7	Feb 01/2016	
810	Feb 01/2015		402	Feb 01/2015		8	BLANK	
811	Feb 01/2015		33-45-00			33-51-00		
812	Feb 01/2015		501	Feb 01/2015		1	Feb 01/2015	
813	Feb 01/2016		502	BLANK		2	Feb 01/2015	
814	Feb 01/2016		33-46-00			33-51-00		
33-43-02			1	Feb 01/2015		501	Feb 01/2015	
201	Feb 01/2015		2	BLANK		502	Feb 01/2015	
202	Feb 01/2016		33-46-00			33-51-00 Co	onfig 1	
203	Feb 01/2015		201	Feb 01/2015		501	Feb 01/2015	
204	BLANK		202	Feb 01/2015		502	Feb 01/2015	
33-43-02			33-47-00			503	Feb 01/2016	
401	Feb 01/2015		1	Feb 01/2016		504	BLANK	
402	Feb 01/2015		2	BLANK		33-52-00		
403	Feb 01/2015		33-47-00			1	Feb 01/2015	
404	Feb 01/2015		201	Feb 01/2016		2	Feb 01/2015	
405	Feb 01/2015		202	Feb 01/2016		33-52-00		
406	Feb 01/2015		203	Feb 01/2016		501	Feb 01/2016	
33-44-00			204	Feb 01/2016		502	BLANK	
1	Feb 01/2015		205	Feb 01/2016		33-53-00		
2	BLANK		206	Feb 01/2016		1	Feb 01/2016	
33-44-00			207	Feb 01/2015		2	Feb 01/2015	
201	Feb 01/2015		208	Feb 01/2016		3	Feb 01/2015	
202	Feb 01/2015		209	Feb 01/2016		4	Feb 01/2016	
203	Feb 01/2015		210	Feb 01/2016		5	Feb 01/2016	
204	Feb 01/2015		211	Feb 01/2016		6	Feb 01/2015	
205	Feb 01/2015		212	Feb 01/2016		7	Feb 01/2016	
206	Feb 01/2015		213	Feb 01/2016		8	Feb 01/2016	

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Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
33-53-00			33-53-00 Conf	ig 1 (cont)				
401	Feb 01/2016		504	BLANK				
402	Feb 01/2016		33-53-00					
403	Feb 01/2015		601	Feb 01/2016				
404	Feb 01/2015		602	Feb 01/2016				
405	Feb 01/2015		33-53-01 Con	fig 1				
406	Feb 01/2015		1	Feb 01/2016				
407	Feb 01/2016		2	Feb 01/2016				
408	Feb 01/2016		3	Feb 01/2016				
409	Feb 01/2016		4	BLANK				
410	Feb 01/2016		33-53-01					
411	Feb 01/2016		401	Feb 01/2016				
412	Feb 01/2016		402	Feb 01/2016				
413	Feb 01/2016		403	Feb 01/2016				
414	Feb 01/2015		404	Feb 01/2016				
33-53-00 Con	fig 1		33-53-01 Con					
401	Feb 01/2015		501	Feb 01/2016				
402	BLANK		502	Feb 01/2016				
33-53-00			33-53-01 Con					
501	Feb 01/2016		501	Feb 01/2016				
502	Feb 01/2016		502	BLANK				
503	Feb 01/2016		502	DEAN				
504	Feb 01/2016							
505	Feb 01/2016							
506	Feb 01/2016							
507	Feb 01/2015							
508	Feb 01/2016							
509	Feb 01/2016							
510	Feb 01/2016							
511	Feb 01/2016							
512	Feb 01/2015							
513	Feb 01/2015							
514	BLANK							
33-53-00 Con	-							
501	Feb 01/2015							
502	Feb 01/2016							
503	Feb 01/2015							

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	CHAPTER SECTION			
<u>SUBJECT</u>	SUBJECT	CONF	PAGE	EFFECT
<b>GENERAL - DESCRIPTION AND OPERATION</b>	33-00-00		1	WJE ALL
GENERAL-TROUBLE SHOOTING	33-00-00		101	WJE ALL
<b>GENERAL - MAINTENANCE PRACTICES</b>	33-00-00		201	WJE ALL
FLIGHT COMPARTMENT - DESCRIPTION AND OPERATION	33-10-00		1	WJE ALL
FLIGHT COMPARTMENT LIGHTS - MAINTENANCE PRACTICES	33-10-00		201	WJE ALL
CONTROL PANEL LIGHTING - DESCRIPTION AND OPERATION	33-11-00		1	WJE ALL
LIGHTPLATES - MAINTENANCE PRACTICES	33-11-01		201	WJE ALL
LIGHTING CONTROL PANELS - DESCRIPTION AND OPERATION	33-11-02		1	WJE ALL
LIGHTING CONTROL PANELS - REMOVAL/INSTALLATION	33-11-02		401	WJE ALL
LIGHTING CONTROL PANELS - CHECK	33-11-02		601	WJE ALL
MASTER WARNING AND CAUTION SYSTEM - DESCRIPTION AND OPERATION	33-12-00		1	WJE ALL
MASTER WARNING AND CAUTION SYSTEM - MAINTENANCE PRACTICES	33-12-00	1	201	WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-876, 880, 881, 883, 884, 891-893
MASTER WARNING AND CAUTION SYSTEM - MAINTENANCE PRACTICES	33-12-00	2	201	WJE 401-404, 406, 410, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 877-879, 886, 887
MASTER WARNING AND CAUTION SYSTEM (MWACS) ANNUNCIATOR PANEL- MAINTENANCE PRACTICES	33-12-01	1	201	WJE 405, 407-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-876, 880, 881, 883, 884, 891-893
MASTER WARNING AND CAUTION SYSTEM (MWACS) ANNUNCIATOR PANEL-MAINTENANCE PRACTICES	33-12-01	2	201	WJE 401-404, 406, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887
MASTER WARNING AND CAUTION SYSTEM (MWACS) CONTROLLER - MAINTENANCE PRACTICES	33-12-02		201	WJE ALL

PRACTICES



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	CHAPTER SECTION			
SUBJECT	<u>SUBJECT</u>	<u>CONF</u>	PAGE	EFFECT
MASTER WARNING AND MASTER CAUTION LIGHT - MAINTENANCE PRACTICES	33-12-04		201	WJE ALL
PASSENGER COMPARTMENTS - DESCRIPTION AND OPERATION	33-20-00		1	WJE ALL
CABIN LIGHTS - DESCRIPTION AND OPERATION	33-21-00		1	WJE ALL
CABIN SIDEWALL LIGHTS - MAINTENANCE PRACTICES	33-21-03		201	WJE ALL
AISLE LIGHTS - REMOVAL/INSTALLATION	33-21-04		401	WJE ALL
AISLE LIGHTS - ADJUSTMENT/TEST	33-21-04		501	WJE ALL
DOOR AND ENTRANCE LIGHTS - REMOVAL/INSTALLATION	33-21-05		401	WJE ALL
DOOR AND ENTRANCE LIGHTS - ADJUSTMENT/TEST	33-21-05		501	WJE ALL
<b>READING LIGHTS - REMOVAL/INSTALLATION</b>	33-21-06		401	WJE ALL
UTILITY AND WORK LIGHTS - DESCRIPTION AND OPERATION	33-22-00		1	WJE ALL
UTILITY LIGHTS - MAINTENANCE PRACTICES	33-22-01		201	WJE ALL
WORK LIGHTS - MAINTENANCE PRACTICES	33-22-02		201	WJE ALL
UTILITY AND WORK LIGHTS CIRCUIT COMPONENTS - MAINTENANCE PRACTICES	33-22-03		201	WJE ALL
LIGHTED SIGNS, CABIN PANELS, AND CALL SYSTEMS - DESCRIPTION AND OPERATION	33-23-00		1	WJE ALL
LIGHTED SIGNS - REMOVAL/INSTALLATION	33-23-01		401	WJE ALL
LIGHTED SIGNS - ADJUSTMENT/TEST	33-23-01		501	WJE ALL
CABIN PANELS - MAINTENANCE PRACTICES	33-23-02	1	201	WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-879, 884, 891
CABIN PANELS - MAINTENANCE PRACTICES	33-23-02	2	201	WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893
CABIN PANELS - MAINTENANCE PRACTICES	33-23-02	3	201	WJE 886, 887
CALL SYSTEM COMPONENTS - REMOVAL/INSTALLATION	33-23-03		401	WJE ALL



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	CHAPTER SECTION			
<u>SUBJECT</u>	SUBJECT	CONF	PAGE	<b>EFFECT</b>
CALL SYSTEM COMPONENTS - CHECK	33-23-03		601	WJE ALL
CARGO AND SERVICE COMPARTMENT LIGHTS - DESCRIPTION AND OPERATION	33-30-00		1	WJE ALL
CARGO AND SERVICE COMPARTMENT LIGHTS - MAINTENANCE PRACTICES	33-30-00		201	WJE ALL
CARGO AND SERVICE COMPARTMENT LIGHTS - ADJUSTMENT/TEST	33-30-00		501	WJE ALL
Operational Check of the Main Wheel Well Lights Using the Cabin Floor Switch TASK 33-30-00-710-801			501	WJE ALL
EXTERIOR LIGHTS - DESCRIPTION AND OPERATION	33-40-00		1	WJE ALL
LANDING AND TAXI LIGHTS - DESCRIPTION AND OPERATION	33-41-00		1	WJE ALL
NOSEGEAR LANDING AND TAXI LIGHTS - REMOVAL/INSTALLATION	33-41-01		401	WJE ALL
NOSEGEAR LANDING AND TAXI LIGHTS - ADJUSTMENT/TEST	33-41-01		501	WJE ALL
NOSE GEAR LANDING/TAXI LIGHT SWITCH - REMOVAL/INSTALLATION	33-41-01	1	401	WJE ALL
Nose Gear Landing/Taxi Light Switch Replacement TASK 33-41-01-901-801		1	401	WJE ALL
WING LANDING LIGHTS SECTOR GEAR WORM <u>PINION - SERVICING</u>	33-41-02		301	WJE ALL
Lubrication of the Wing Landing Lights Sector Gear Worm Pinion TASK 33-41-02-640-801			301	WJE ALL
WING LANDING LIGHTS - REMOVAL/INSTALLATION	33-41-02		401	WJE ALL
WING LANDING LIGHTS - ADJUSTMENT/TEST	33-41-02		501	WJE ALL
WING LANDING LIGHTS - CHECK	33-41-02		601	WJE ALL
LANDING AND TAXI LIGHT SWITCHES - REMOVAL/INSTALLATION	33-41-03		401	WJE ALL



## CHAPTER 33 LIGHTS

	CHAPTER SECTION		
SUBJECT	SUBJECT	CONF PAGE	EFFECT
ANTICOLLISION LIGHTS - DESCRIPTION AND OPERATION	33-42-00	1	WJE ALL
ANTICOLLISION LIGHTS - MAINTENANCE PRACTICES	33-42-01	201	WJE ALL
ANTICOLLISION LIGHTS - ADJUSTMENT/TEST	33-42-01	501	WJE ALL
Operational Check of the Anti-Collision Lights TASK 33-42-01-710-801		501	WJE ALL
FORWARD AND AFT POSITION LIGHTS SYSTEM - DESCRIPTION AND OPERATION	33-43-00	1	WJE ALL
FORWARD AND AFT POSITION LIGHTS - MAINTENANCE PRACTICES	33-43-01	1 201	WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
FORWARD AND AFT POSITION LIGHTS - MAINTENANCE PRACTICES	33-43-01	3 201	WJE 412, 414
FORWARD AND AFT POSITION LIGHTS - ADJUSTMENT/TEST	33-43-01	501	WJE ALL
Operational Check of the Position Lights TASK 33-43-01-710-801		501	WJE ALL
Operational Check of the Wing Strobe Lights TASK 33-43-01-710-802		501	WJE ALL
FORWARD AND AFT POSITION LIGHTS - INSPECTION CHECK	33-43-01	601	WJE ALL
FORWARD AND AFT POSITION LIGHTS - APPROVED REPAIRS	33-43-01	801	WJE ALL
POSITION LIGHT TRANSFORMERS - MAINTENANCE PRACTICES	33-43-02	201	WJE ALL
FORWARD POSITION LIGHTS ASSEMBLY - REMOVAL/INSTALLATION	33-43-02	401	WJE ALL
GROUND FLOODLIGHTS - DESCRIPTION AND OPERATION	33-44-00	1	WJE ALL
GROUND FLOODLIGHTS - MAINTENANCE PRACTICES	33-44-00	201	WJE ALL
WING AND NACELLE FLOOD LIGHTS - DESCRIPTION AND OPERATION	33-45-00	1	WJE ALL



## CHAPTER 33 LIGHTS

	CHAPTER SECTION			
<u>SUBJECT</u>	SUBJECT	CONF	PAGE	<u>EFFECT</u>
WING AND NACELLE FLOOD LIGHTS - REMOVAL/INSTALLATION	33-45-00		401	WJE ALL
WING AND NACELLE FLOODLIGHTS - ADJUSTMENT/TEST	33-45-00		501	WJE ALL
PASSENGER FORWARD ENTRANCE DOOR STAIR LIGHTS - DESCRIPTION AND OPERATION	33-46-00		1	WJE ALL
PASSENGER FORWARD ENTRANCE DOOR STAIR LIGHTS - MAINTENANCE PRACTICES	33-46-00		201	WJE ALL
LOGO LIGHTS - DESCRIPTION AND OPERATION	33-47-00		1	WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891
LOGO LIGHTS - MAINTENANCE PRACTICES	33-47-00		201	WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891
EMERGENCY LIGHTING - DESCRIPTION AND OPERATION	33-50-00		1	WJE ALL
FLIGHT COMPARTMENT EMERGENCY FLOODLIGHTS - DESCRIPTION AND OPERATION	33-51-00		1	WJE ALL
FLIGHT COMPARTMENT EMERGENCY FLOODLIGHTS - ADJUSTMENT/TEST	33-51-00		501	WJE ALL
FLIGHT COMPARTMENT EMERGENCY FLOODLIGHTS - ADJUSTMENT/TEST	33-51-00	1	501	WJE ALL
Operational Check of the Cockpit Flood Light and Thunderstorm Lights TASK 33-51-00-710-801		1	501	WJE ALL
Operational Check of the Cockpit Floodlights by Pulling Emergency Bus Sensing Circuit Breaker TASK 33-51-00-710-802		1	502	WJE ALL
CABIN STANDBY LIGHTS - DESCRIPTION AND OPERATION	33-52-00		1	WJE ALL
CABIN STANDBY LIGHTS - ADJUSTMENT/TEST	33-52-00		501	WJE ALL
EMERGENCY LIGHTS - DESCRIPTION AND OPERATION	33-53-00		1	WJE ALL
EMERGENCY LIGHTS - REMOVAL/INSTALLATION	33-53-00		401	WJE ALL



## CHAPTER 33 LIGHTS

	CHAPTER SECTION			
<u>SUBJECT</u>	SUBJECT	<u>CONF</u>	PAGE	EFFECT
EMERGENCY LIGHTS - REMOVAL/INSTALLATION	33-53-00	1	401	WJE ALL
Restore the Emergency Light Battery Packs TASK 33-53-00-902-801		1	401	WJE ALL
EMERGENCY LIGHTS - ADJUSTMENT/TEST	33-53-00		501	WJE ALL
EMERGENCY LIGHTS - ADJUSTMENT/TEST	33-53-00	1	501	WJE ALL
Operational Check of the Emergency Lighting System Operated From the Flight Deck and Flight Attendant Position TASK 33-53-00-710-801		1	501	WJE ALL
EMERGENCY LIGHTS - CHECK	33-53-00		601	WJE ALL
EMERGENCY AISLE FLOOR LIGHTS AND EXIT IDENTIFIERS- DESCRIPTION AND OPERATION	33-53-01	1	1	WJE 401-404, 412, 414, 873-879, 892, 893
EMERGENCY AISLE FLOOR LIGHTS AND EXIT IDENTIFIERS - REMOVAL/INSTALLATION	33-53-01		401	WJE 401-404, 412, 414, 873-879, 892, 893
FLOOR TRACK EMERGENCY LIGHTING - ADJUSTMENT/TEST	33-53-01	1	501	WJE 401-404, 412, 414, 873-879, 892, 893
Operational Check of the Floor Track Emergency Lighting TASK 33-53-01-710-801		1	501	WJE 401-404, 412, 414, 873-879, 892, 893
EXIT IDENTIFIERS - ADJUSTMENT/TEST	33-53-01	2	501	WJE 401-404, 412, 414, 873-879, 892, 893
Functional Check of Self Illuminating Exit Signs TASK 33-53-01-720-801		2	501	WJE 401-404, 412, 414, 873-879, 892, 893



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#### **GENERAL - DESCRIPTION AND OPERATION**

#### 1. Description

- A. This chapter on lights presents the circuits and related components for all lights on the aircraft. It is intended for use in conjunction with wiring diagrams and electrical schematics to correlate data required to maintain the light systems in the best operating condition. The text is supported by illustrations to provide additional assistance to the mechanic during maintenance; general details of most of the interior and exterior lights are also shown.
- B. The major light circuits are: the flight compartment lights, passenger compartment lights, cargo and service compartment lights, exterior lights, and emergency lighting systems.
- C. The flight compartment circuits include the various lights for general lighting, crew utility lights, and the master warning and caution system. The primary lighting in the flight compartment consists of white incandescent and fluorescent-type lights. Secondary lighting consists of variable-intensity white floodlights.
- D. The passenger compartment lighting provides general lighting for the cabin areas and entrances. Direct and indirect lighting is used as well as utility and work lights, lighted signs for passenger instructions, and the passenger call system.
- E. The cargo and service compartment lights are installed in the compartment and accessory areas to facilitate loading, area inspection, and servicing operations.
- F. The exterior lights provide a high-intensity light pattern for landing, area lighting for ground service, flight scanning lights for inspecting icing conditions, lights for indicating aircraft position, flashing anticollision recognition lights, and passenger door stair lights for facilitating passenger loading.
- G. The emergency lighting system ensures limited lighting through-out the aircraft during electrical power failure. A 28-volt standby system operates on the aircraft batteries if the normal dc bus becomes deenergized. A 2 1/2-volt emergency system powers separate lights from self-contained battery packs to light the emergency exit areas if total loss of power occurs.
- H. The light circuits require minor maintenance such as replacement of lamps or switches. Most light assemblies, and components are readily accessible and can be maintained without using special tools.
- I. The general maintenance practices section in this chapter contains standard instructions for removal and installation of components for which detailed procedures are not provided. If a relatively simple component is installed with the standard attachments, the removal is considered obvious; therefore, individual coverage is not included. Procedures are identical for most switches, relays, transformers, and such equipment.
- J. The light circuits use some electrical connectors, but most of the light assemblies have terminal and screw connections. When environmental conditions permit, wiring is run in open bundles for easy access. Conduit is used in areas required by environment or where maintenance requirement is minimal.
- K. When defective lamps, light assemblies, and components are replaced, equipment with identical part numbers should be installed unless other substitutes have been authorized. After replacing equipment, functional tests should be performed to verify proper circuit operation.
- L. Trouble shooting procedures are provided only in the general maintenance section because most light circuits require the same steps to locate trouble. In most cases, inoperative lights, open circuit breakers, blown fuses, and such troubles are obvious.
- M. The safety precautions that must be observed when accomplishing work on the light circuits are outlined in the general maintenance practices.

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# **GENERAL-TROUBLE SHOOTING**

#### 1. General

A. The following trouble shooting steps are provided to augment specific circuit information found in the wiring diagrams, and to serve as a basis for developing the more detailed procedures required to locate cause of infrequent light system troubles.

## 2. Trouble Shooting

- A. When possible, investigate report of trouble at source to ascertain conditions leading to, and under which, trouble occurred, and whether failure of other light circuits or electrical systems occurred simultaneously. Careful analysis of such information is often indicative of nature, and most likely location of trouble.
- B. Study circuit wiring diagrams covering affected light system and its related power supply. A thorough understanding of the function is necessary before a trouble shooting procedure can be effectively planned and executed. By combining a knowledge of applicable circuits with information gained from trouble report, an investigation usually indicates circuit, or section of circuit, in which trouble is located.
- C. Visually inspect circuit for open circuit breakers, blown fuses, broken wiring, loose wire connections, loose electrical connectors, and evidence of shorting. Observe particularly, security of connections and presence of foreign matter.
- D. Perform continuity check. A blown fuse, burned wires, or other evidence of shorting indicates that a power-on check would create a hazardous condition. With power off, isolate defective circuit and check one section at a time until shorted or open circuit section is found.
- E. Perform power-on check only when it has been determined that such a check cannot create a hazardous condition. With power on, perform operational tests to confirm report of trouble and to determine, if possible, whether cause of trouble is in light circuit or in power supply system. A voltmeter or test light may also be used for a power check at various breakpoints in circuit, such as terminal strips and equipment input terminals, to determine if power is available at these points.
- F. Replace any light assembly or component that remains inoperative after making certain that power is available at unit and that ground connections are secure at unit.

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# **GENERAL - MAINTENANCE PRACTICES**

#### 1. General

- A. General maintenance practices include standard removal and installation procedures, instructions to safety circuit breakers, and a guide for the inspection check of the light circuit components.
- B. When a fluorescent lamp ballast is replaced due to failure, the lamp should also be replaced. A faulty lamp can function similar to a rectifier which saturates the ballast core and causes the ballast to overheat and fail.

## 2. Equipment and Materials

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

Table 2	01
---------	----

Name and Number	Manufacturer
Clamp (HPV-5N) or (P4-5WS)	Burndy Nylon Molding Corporation

## 3. Removal/Installation Light Circuit Components

A. Remove Component (Figure 201)

**WARNING:** TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Open and tag applicable circuit breaker(s).
  - (a) Install clamp HPV-5N (Burndy) or P4-5Ws (Nylon Molding Corporation) around circuit breaker(s) button.
  - (b) Tag circuit breaker(s) with following warning sign:

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

- (2) Gain access to component.
- (3) Disengage and/or remove attaching hardware.
- (4) Disconnect electrical connector and/or wiring terminals from component.
- (5) Install dust cover on connector and receptacle.
- (6) Remove component.
  - <u>NOTE</u>: If component is not to be replaced immediately, bare wire terminals should be insulated and stowed to prevent shorting if power is applied to the electrical system.
- B. Install Component (Figure 201)

## WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

- (1) Make certain applicable circuit breaker is open and tagged.
- (2) Connect electrical connector and/or wiring terminals to component.
- (3) Position component on mounting and install attaching hardware.
- (4) Install or secure parts removed for access to component.
- (5) Remove tag(s) and close circuit breaker(s) as applicable.
- (6) Perform functional test by operating appropriate switch to check proper operation of circuit.

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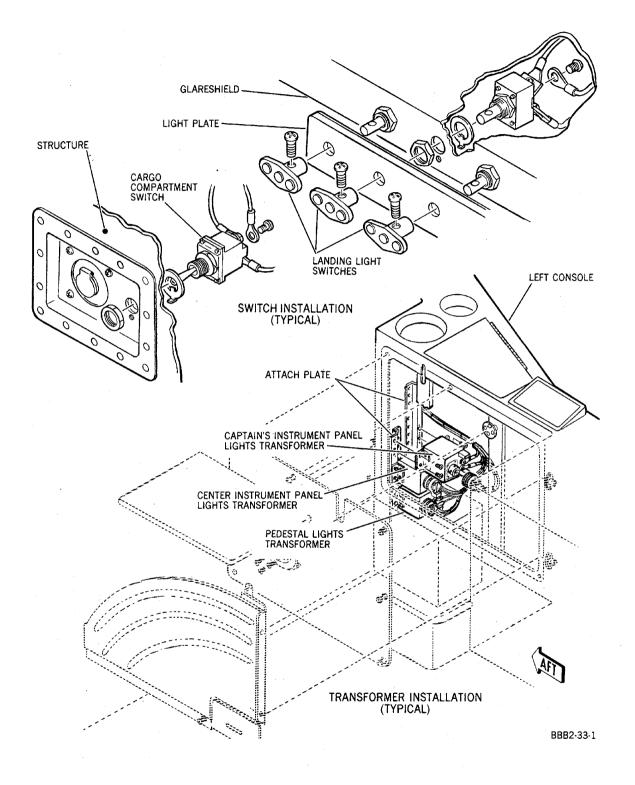
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Miscellaneous Equipment -- Removal/Installation Figure 201/33-00-00-990-801 (Sheet 1 of 2)

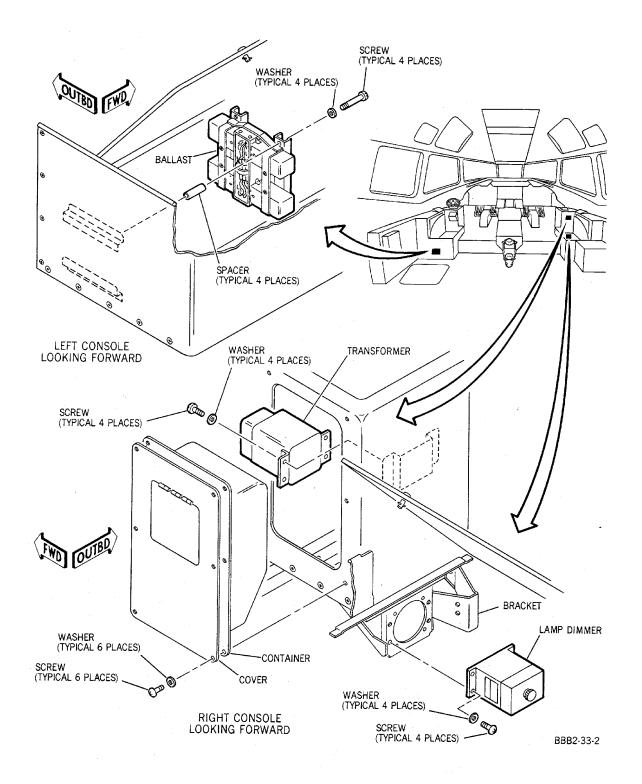
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#### Miscellaneous Equipment -- Removal/Installation Figure 201/33-00-00-990-801 (Sheet 2 of 2)

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#### 4. Check Light Circuit Components

- A. Check Component
  - (1) Check component for proper installation, security of mounting, physical damage, and evidence of overheating.
  - (2) Check that terminal connections are secure and are free of foreign matter or metallic objects.
  - (3) Check bonding connections for good electrical contact and for security.
  - (4) Check wiring for physical damage such as chafing, fraying, or cut insulation.
  - (5) Repair or replace equipment as required.

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#### FLIGHT COMPARTMENT - DESCRIPTION AND OPERATION

#### 1. General

- A. The flight compartment lights (Figures 1, 2, and 3) provide general and local white lighting for the area, control panels, instruments, and controls. Separate control panels are installed to permit individual selection of intensity and area to be lighted.
- B. The white floodlight intensity is controlled by floodlight dimming controls. A thunderstorm switch is provided to bypass certain floodlight dimming switches and assure adequate lighting during flight in thunderstorm conditions.
- C. The cockpit floodlight switch controls a separate white floodlight circuit. The switch is used in the on position by ground personnel; when placed in the alternate thunderstorm lever-lock detent position, it turns on additional high intensity lights which are not required during normal conditions.
- D. Most instruments are integrally lighted and the instrument and panel lights are dimmed by switches located on the light control panels. The utility and work lights have individual control switches. The emergency light operates on a separate circuit, (Ref. Emergency Lighting Systems).
- E. The control panels are lighted by incandescent lamps soldered to integral etched circuit lamp boards.
- F. The master warning and caution system provides visual signals of an operating condition.

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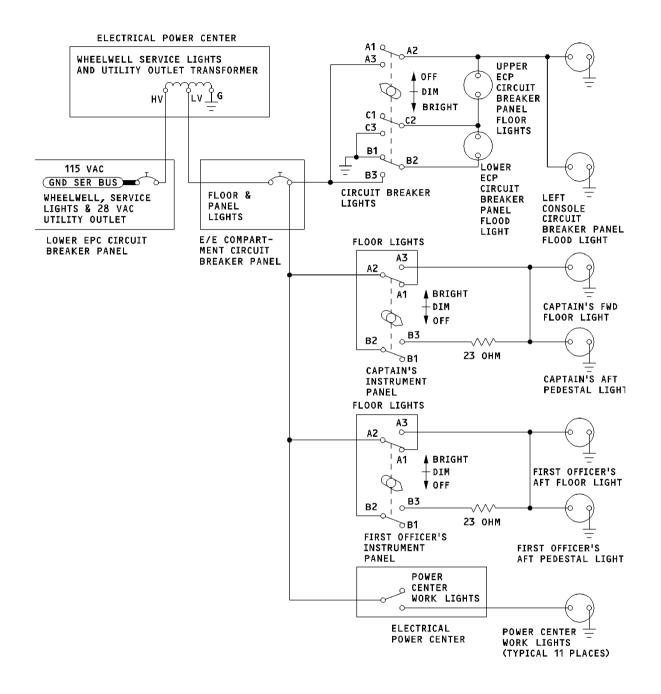
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#### Floor, EPC Work Lights, and Circuit Breaker Panel Lights -- Schematic Figure 1/33-10-00-990-812

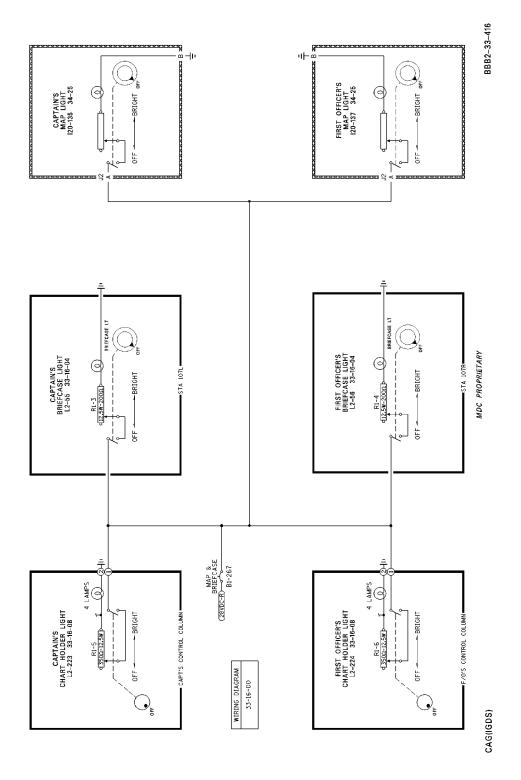
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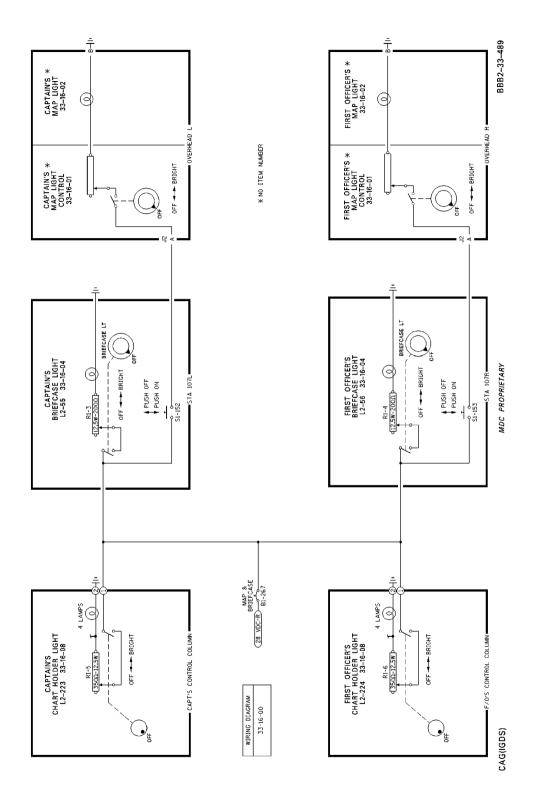
Map, Briefcase and Chart Holder Lights -- Schematic Figure 2/33-10-00-990-813

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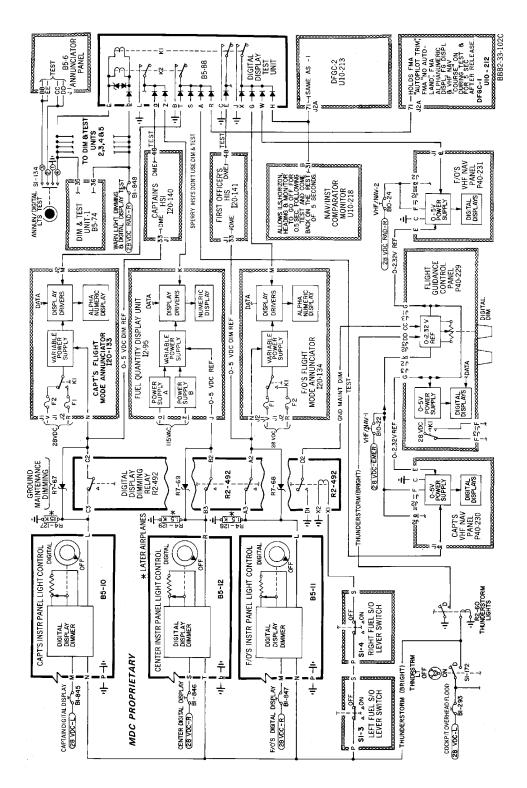
Map, Briefcase and Chart Holder Lights -- Schematic Figure 3/33-10-00-990-814

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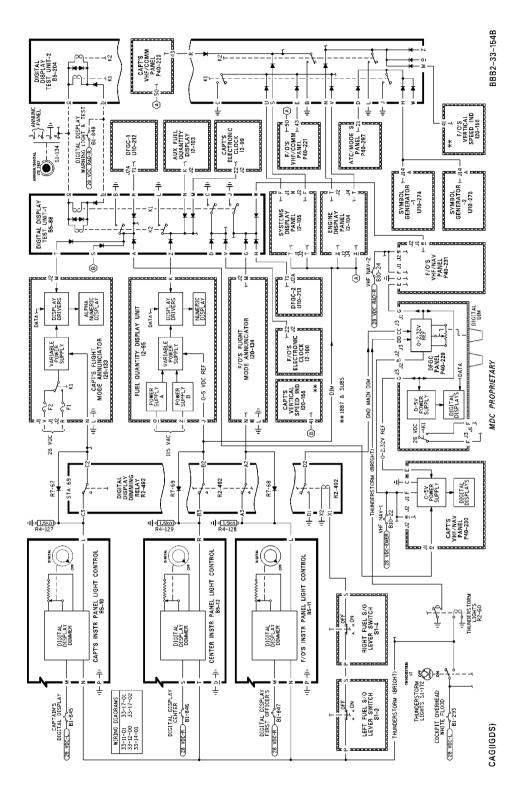
WJE 405, 409, 410, 873, 874, 881, 883, 884, 892, 893

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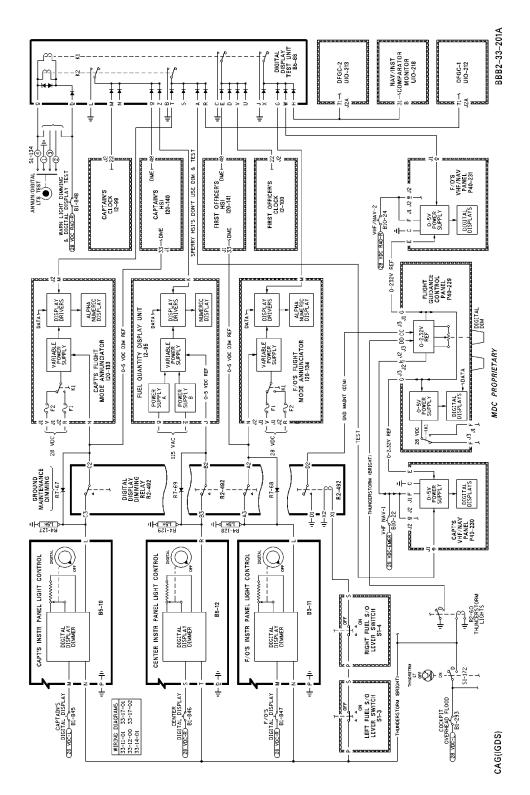
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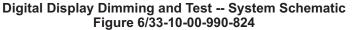
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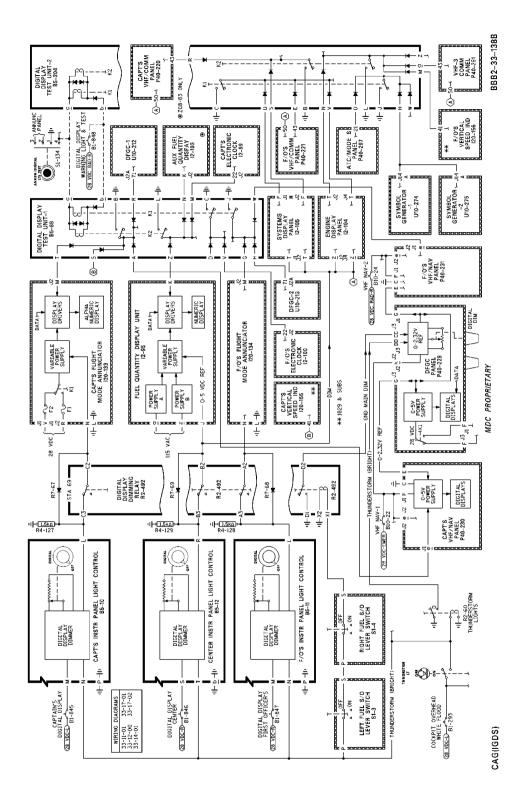


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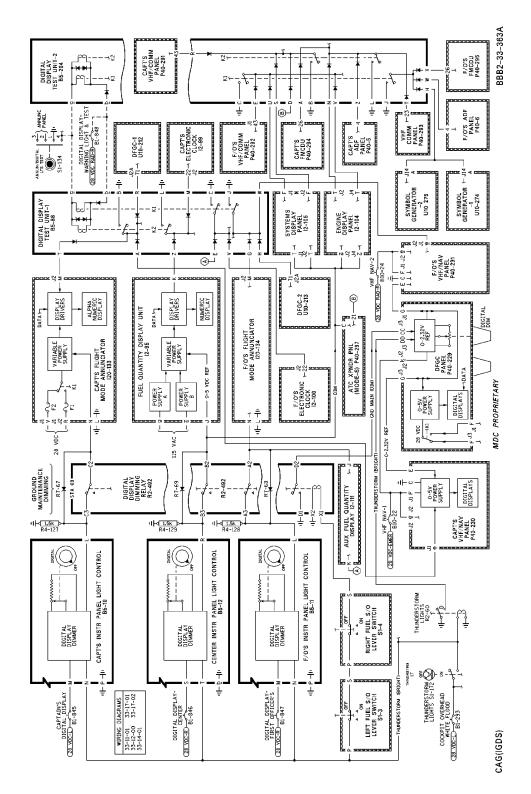


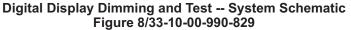
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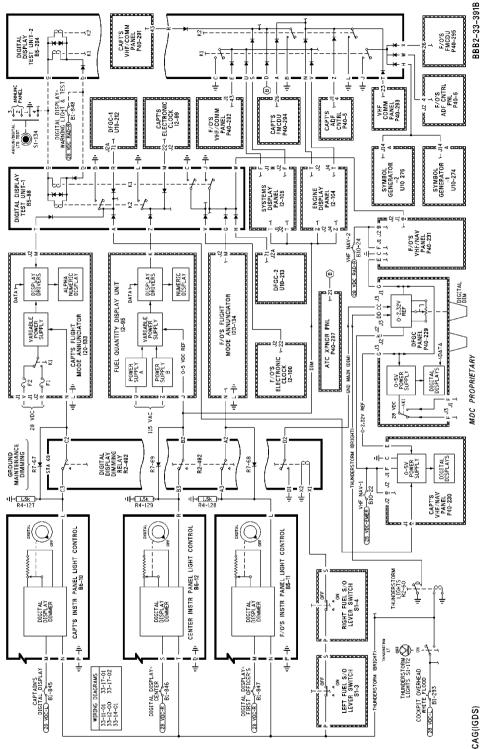




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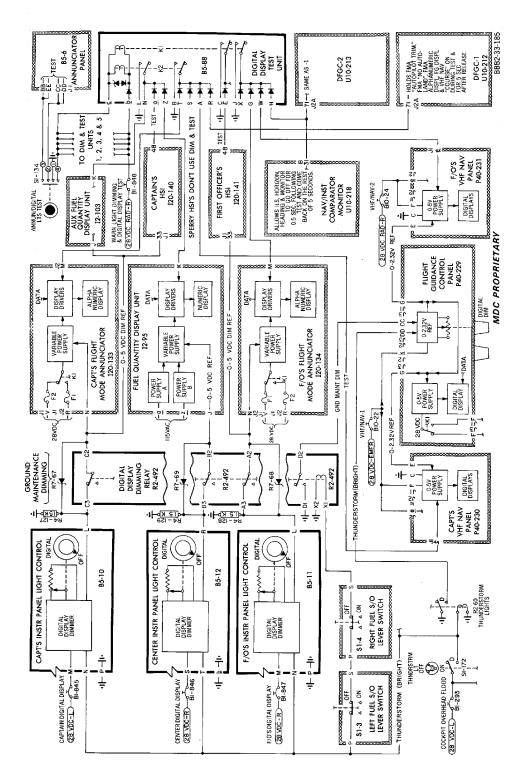
**Digital Display Dimming and Test -- System Schematic** Figure 9/33-10-00-990-830

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

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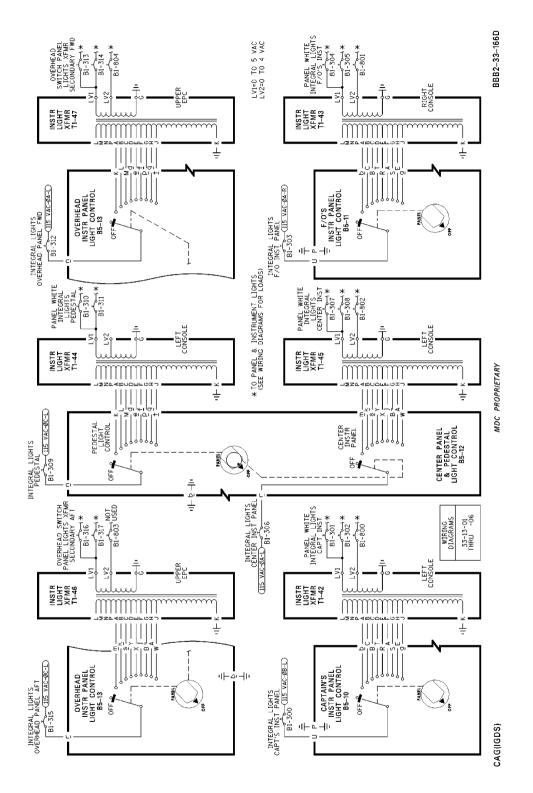
EFFECTIVITY WJE 407, 408, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 880, 891

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Instrument and Panel Lighting -- System Schematic Figure 11/33-10-00-990-846

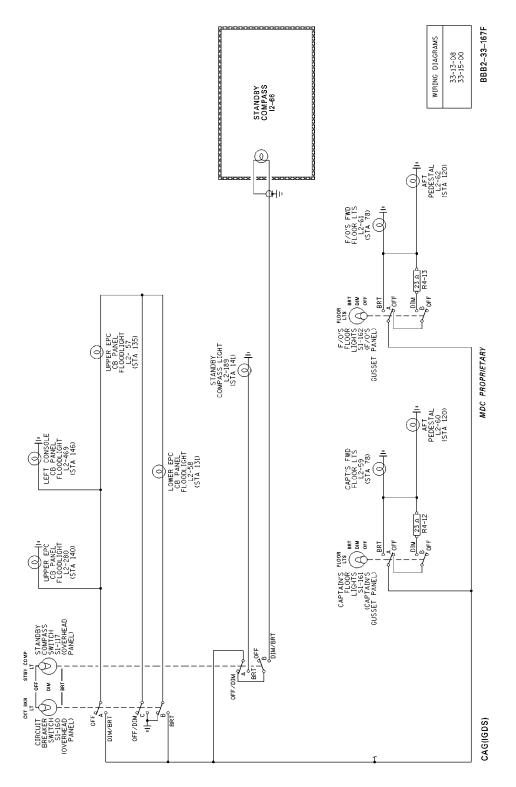
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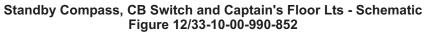
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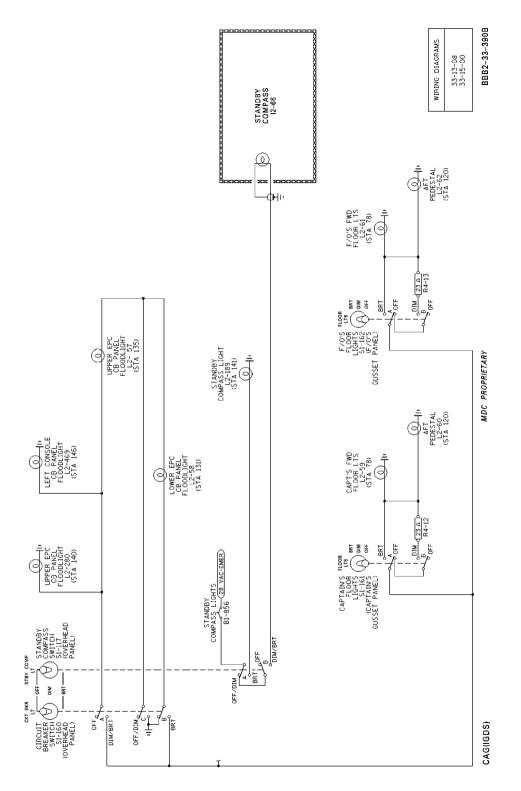
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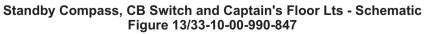
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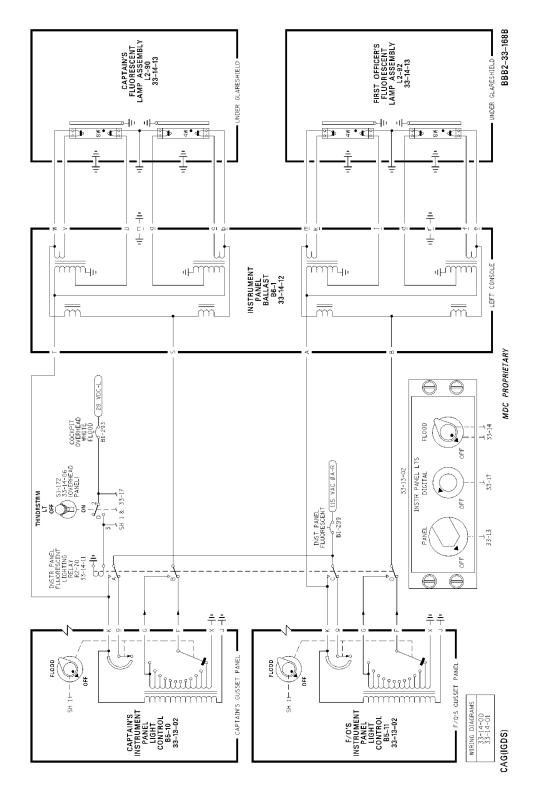
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Instrument & Panel Lighting -- Schematic Figure 14/33-10-00-990-849

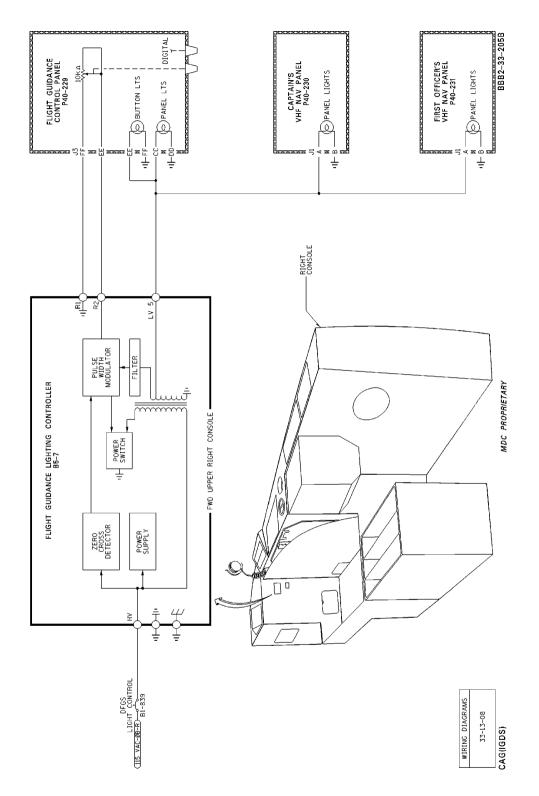
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Flight Guidance Control Panel Lights -- Schematic Figure 15/33-10-00-990-850

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#### FLIGHT COMPARTMENT LIGHTS - MAINTENANCE PRACTICES

#### 1. General

Various types of lamps and lamp fixtures are used for illumination of the flight compartment. It is not Α. necessary to remove the fixture in order to relamp. Lamp replacement can be accomplished by opening the fixture or removing the lens cover. New lamps should be checked by placing the appropriate switch in the on position, to verify proper lamp operation.

#### 2. **Removal/Installation Flight Compartment Lights**

**Remove Lights** Α.

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

Open and tag following circuit breakers applicable to light being removed: (1)

Open these circuit breakers and install safety tags:

## LEFT CONSOLE. GROUND SERVICE BUS

Row	Col	Number	Name		
<u></u>	<u></u>	B1-319			
		Broto			
LOWEF	R EPC,	DC AIR CO	NDITIONING & MISCELLANEOUS		
Row	<u>Col</u>	<u>Number</u>	Name		
W	28	B1-378	ALTERNATE THUNDER STORM		
W	29	B1-267	MAP & BRIEFCASE		
		DC TRANS			
Row		<u>Number</u>	Name		
Z	39	B1-292	COCKPIT WHITE FLOOD LIGHTS		
	P FPC	LIGHTS . I	EFT DC BUS		
Row	Col		Name		
M	33		COCKPIT OVERHEAD WHITE FLOOD		
IVI	00	D1-200			
OVERH	OVERHEAD EMERGENCY DC BUS				
Row	<u>Col</u>	<u>Number</u>	Name		
WJE 40 <sup>2</sup> 891-893	1-409, 4	11, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,		
А	15	B1-479	CAPT & F/O WHITE FLOOD LIGHTS		
WJE 410	)				
А	16	B1-479	CAPT & F/O WHITE FLOOD LIGHTS		
WJEALL					
UPPER EPC, LIGHTS - RIGHT AC BUS					
Row	Col	Number	Name		
1101	001	Tumber			

#### F

L. 18 B1-299 INST PANEL FLUORESCENT

- (2) Gain access to lamp and attaching screws.
- Remove lamp. (3)

(4) Remove screws which attach fixture to aircraft.

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- (5) Disconnect and tag electrical wiring.
- (6) Remove light fixture from aircraft.
- B. Install Lights

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

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

	LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name			
	<u></u>		WHEELWELL SERV LTS & 28 VAC UTILITY OUTLET	
LOWE	R EPC,	DC AIR CO	NDITIONING & MISCELLANEOUS	
Row	<u>Col</u>	<u>Number</u>	Name	
W	28	B1-378	ALTERNATE THUNDER STORM	
W	29	B1-267	MAP & BRIEFCASE	
LOWE	R EPC,	DC TRANS	FER BUS	
Row	<u>Col</u>	<u>Number</u>	Name	
Z	39	B1-292	COCKPIT WHITE FLOOD LIGHTS	
LOWE	R EPC,	LIGHTS - L	EFT DC BUS	
Row	Col	<u>Number</u>	Name	
М	33	B1-293	COCKPIT OVERHEAD WHITE FLOOD	
OVERH	IEAD E	EMERGENC	Y DC BUS	
Row	<u>Col</u>	<u>Number</u>	Name	
WJE 40 891-893		411, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,	
А	15	B1-479	CAPT & F/O WHITE FLOOD LIGHTS	
WJE 41	0			
А	16	B1-479	CAPT & F/O WHITE FLOOD LIGHTS	
WJE AL	.L			
UPPER	EPC,	LIGHTS - R	IGHT AC BUS	
Row	<u>Col</u>	<u>Number</u>	Name	
L	18	B1-299	INST PANEL FLUORESCENT	
Connec	ct electi	rical wiring to	o fixture.	

- (3) Position fixture on aircraft and install attaching screws.
- (4) Install lamp.
- (5) Remove the safety tags and close these circuit breakers:

# LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-319 WHEELWELL SERV LTS & 28 VAC UTILITY OUTLET

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(2)

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#### LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
W	28	B1-378	ALTERNATE THUNDER STORM
W	29	B1-267	MAP & BRIEFCASE

#### LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	Name
Z	39	B1-292	COCKPIT WHITE FLOOD LIGHTS

## LOWER EPC, LIGHTS - LEFT DC BUS

Row Col Number Name

M 33 B1-293 COCKPIT OVERHEAD WHITE FLOOD

#### OVERHEAD EMERGENCY DC BUS

<u>Row Col Number Name</u>

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

 A
 15
 B1-479
 CAPT & F/O WHITE FLOOD LIGHTS

 WJE 410
 A
 16
 B1-479
 CAPT & F/O WHITE FLOOD LIGHTS

WJE ALL

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

<u>Row Col Number Name</u>

L 18 B1-299 INST PANEL FLUORESCENT

- (6) Place applicable switch in ON position to verify proper operation of lights.
- (7) Place applicable switch to OFF position.

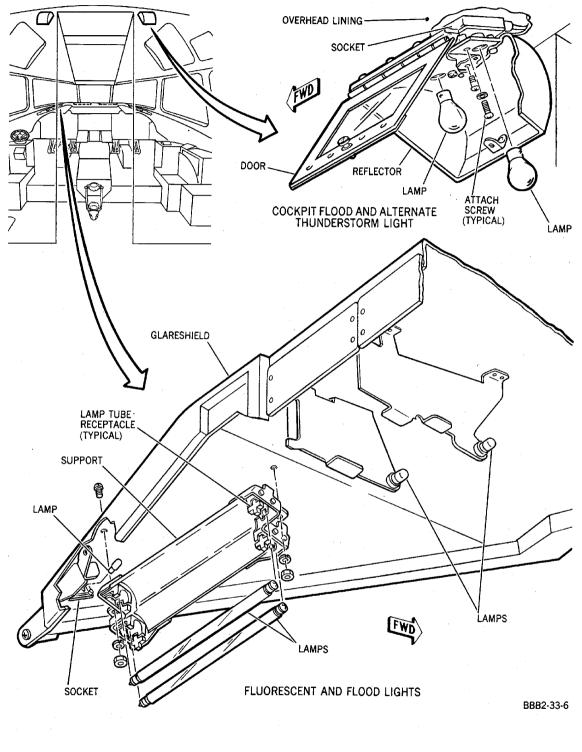
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Fluorescent and Floodlights -- Removal/Installation Figure 201/33-10-00-990-801

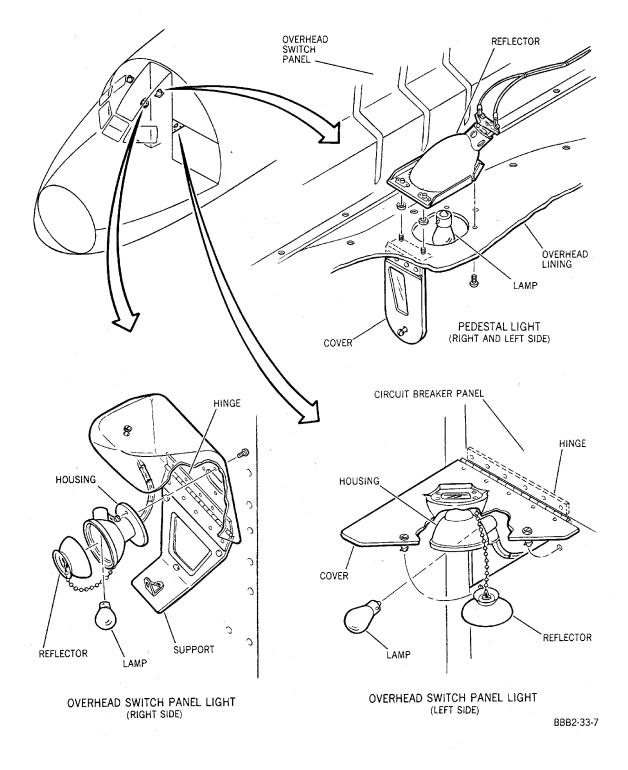
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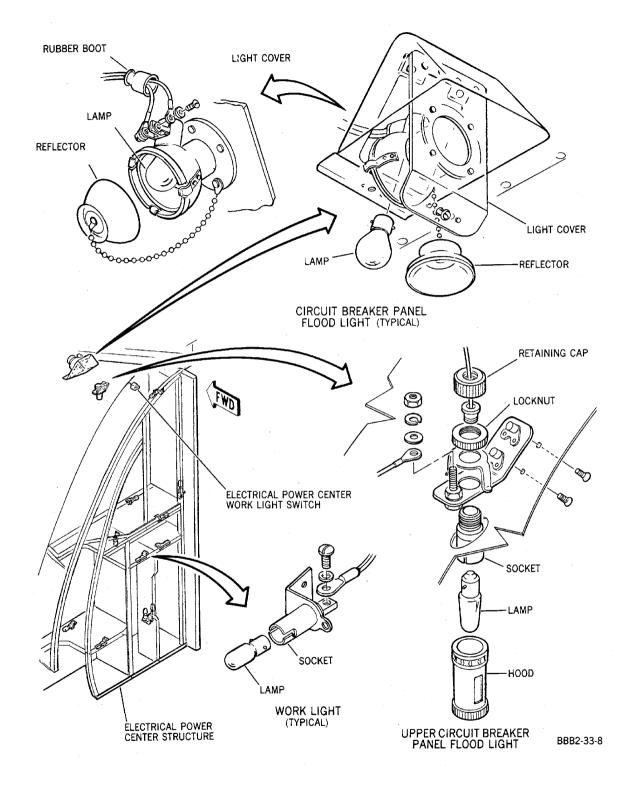
#### Floodlights -- Removal/Installation Figure 202/33-10-00-990-802

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Circuit Breaker Panel Floodlights and Work Lights -- Removal/Installation Figure 203/33-10-00-990-803

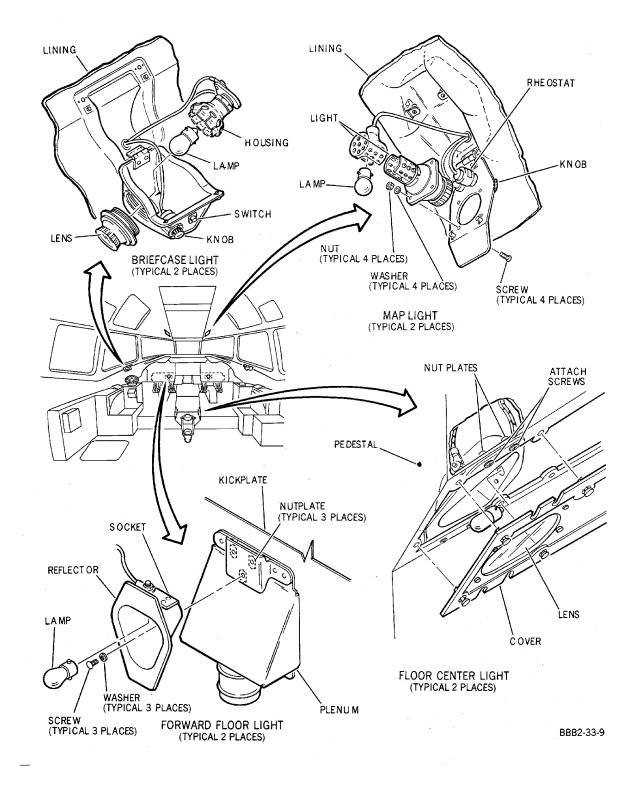
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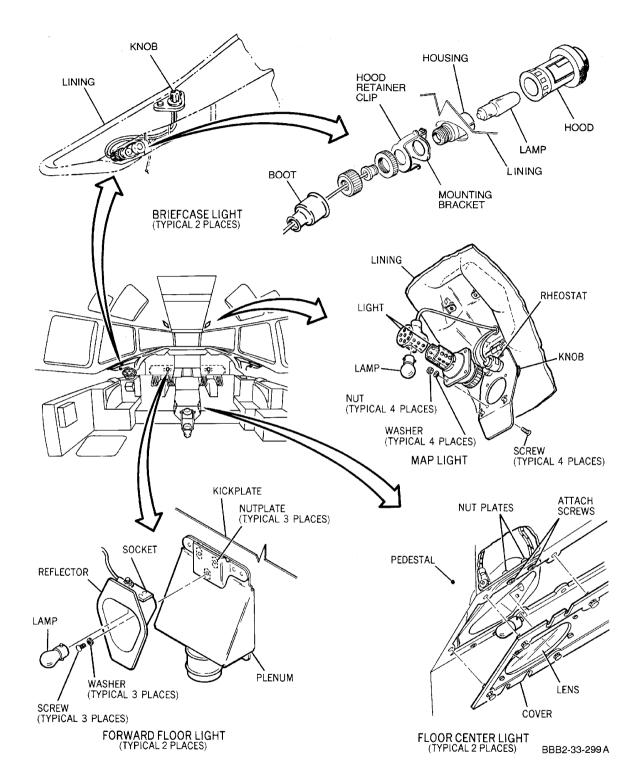
#### Utility Lights -- Removal/Installation Figure 204/33-10-00-990-804

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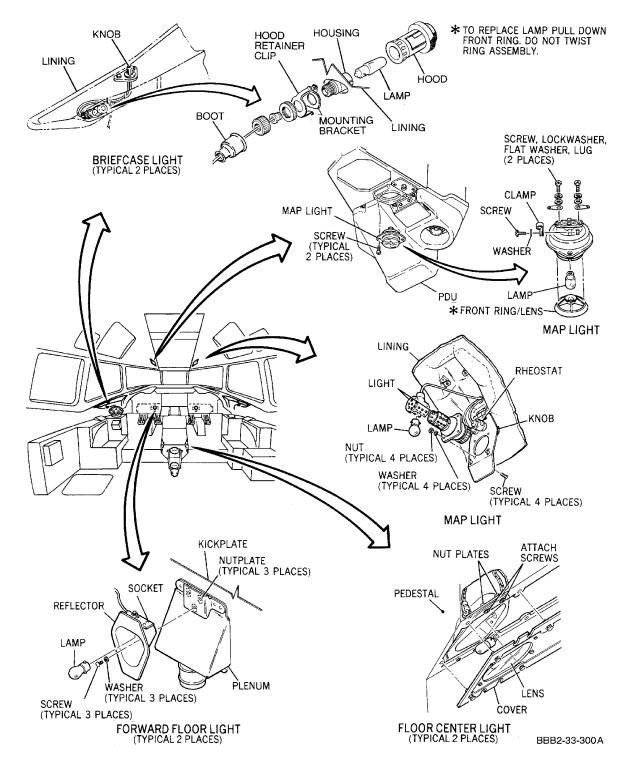
#### Utility Lights -- Removal/Installation Figure 205/33-10-00-990-853

# 33-10-00

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#### Utility Lights -- Removal/Installation Figure 206/33-10-00-990-854

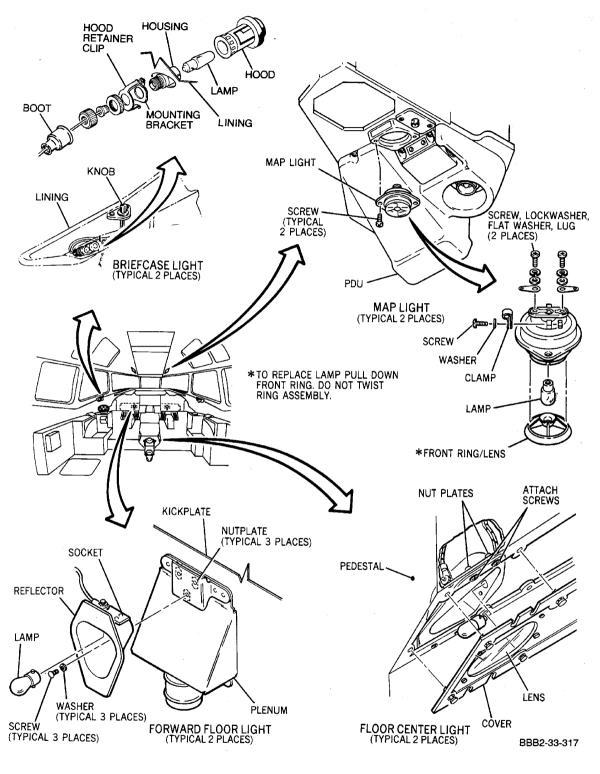
WJE 405-411, 880, 881, 883, 884

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Utility Lights -- Removal/Installation Figure 207/33-10-00-990-855

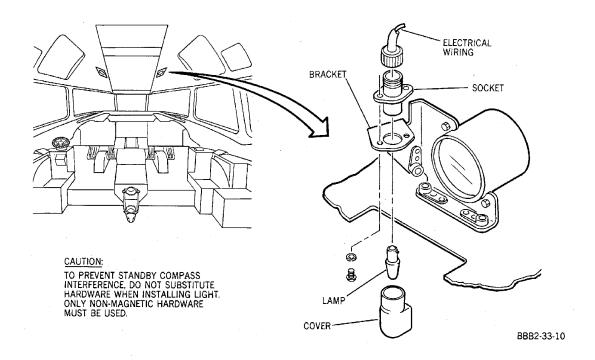
WJE 886, 887

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Standby Compass Light -- Removal/Installation Figure 208/33-10-00-990-810

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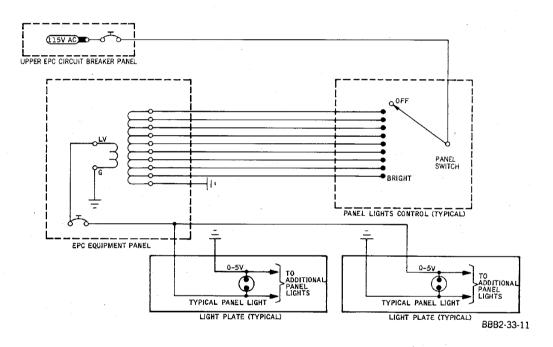
Page 211 Feb 01/2015

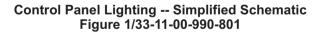


## **CONTROL PANEL LIGHTING - DESCRIPTION AND OPERATION**

## 1. General

- A. The control panel lighting is provided by lightplates, consisting of a plastic panel and a circuit board. White lettering on a black background is used on the panel faces. Miniature 0- to 5-volt lamps, soldered to the circuit board, fit in recesses in the plastic panel. The lamps are located to distribute light evenly throughout the plastic panel so the white lettering on the panel face may be read easily.
- B. Circuit connection to a power source is made through a terminal pin and ground sleeve installed on the circuit board. The mating connector is attached to the applicable panel support plate.
- C. Sealing tape, applied to periphery of lightplate and around the edges of large cutouts, minimizes entry of moisture or particles which may damage or short the circuit.
- D. Lamps may be replaced by separating the lamp circuit board and light panel.
- E. Lighting for lightplates on flight guidance control panel and navigation control panels on the glareshield is covered in AUTO FLIGHT, CHAPTER 22.





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# LIGHTPLATES - MAINTENANCE PRACTICES

# 1. General

A. The following procedures are given for removal and installation of the lightplates on the various control panels and instruments in the flight compartment.

## 2. Equipment and Materials

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

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

## Table 201

Name and Number	Manufacturer
Sealing tape, 3/8 inch (9.525mm) MIL-L-15126 Type ACT	

## 3. <u>Removal/Installation Lightplates</u>

A. Remove Lightplate

WARNING: TAG AND SAFETY CIRCUIT BREAKER.

(1) Open and tag these circuit breakers for applicable panel lightplate that is being removed:

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

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

Κ	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

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

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

L 17 B1-303 INTEGRAL LIGHTS F/O INST PANEL

<u>NOTE</u>: The listing under the Panel column refers to all lightplates located on that panel.

- (2) Remove switch knobs and handles that interfere with light-plate removal.
- (3) Remove screws that attach lightplate to support plate.
- (4) Remove lightplate by lifting carefully, applying pressure adjacent to small plus sign (+) to disconnect electrical connector.
- (5) Separate panel from circuit board by removing connecting screws and sealing tape.
- (6) Remove burned out lamps with soldering iron.
- B. Install Lightplate

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WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

(1) Make certain applicable following circuit breakers are open and tagged:

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

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

Κ	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL
К	19	B1-309	INTEGRAL LIGHTS PEDESTAL

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

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

- (2) Install new lamps as required.
- (3) Raise lamps off circuit board so lamps will be in contact with top of lamp recess after assembly.
- (4) Position circuit board on lightplate assembly securing it with screws.

NOTE: Screws must be straight on entry and tightened to snug fit only.

(5) Apply 3/8-inch (9.525 mm) width sealing tape, the color of the lightplate, to outer periphery of lightplate and around edges of large cutouts (Figure 202).

NOTE: Tape is not used on curved pedestal lightplates.

- (6) Perform functional test by applying 5-volt current at electrical connector and observe, through circuit board, that all lamps are on.
- (7) Install lightplate on support plate by applying pressure over electrical connector and securing it with attaching screws.
  - <u>NOTE</u>: Make certain that 0.015 inch (0.38 mm) clearance exists between each throttle lever and the lightplate substrate (the brown phenolic below black lightplate enclosure). Trim lightplate substrate as required to obtain clearance.
- (8) Remove the safety tags and close these circuit breakers:

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
K	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
Κ	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD

Κ	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL
Κ	19	B1-309	INTEGRAL LIGHTS PEDESTAL

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

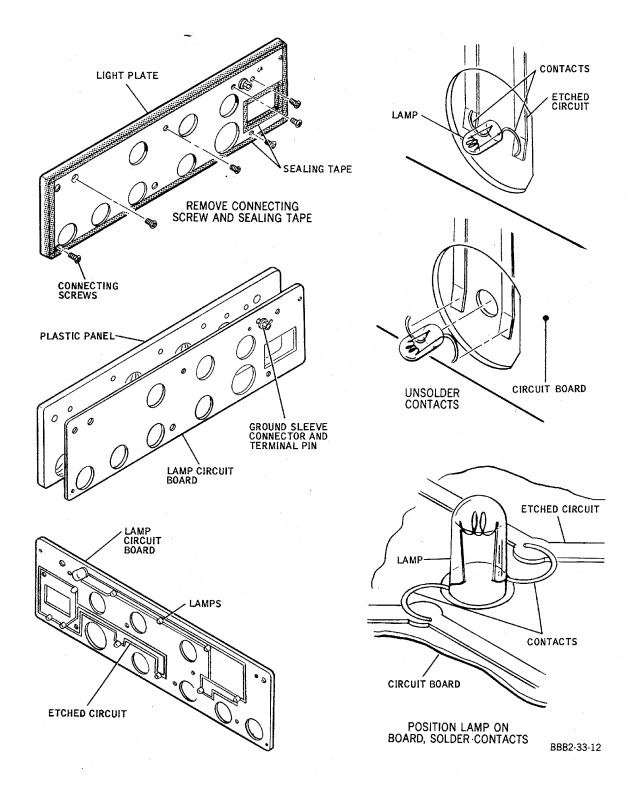
Row	<u>Col</u>	<u>Number</u>	Name
L	17	B1-303	INTEGRAL LIGHTS F/O INST PANEL

(9) Place appropriate switch in the on position to check proper operation of lights.

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## Lightplate Panel Assembly Figure 201/33-11-01-990-801

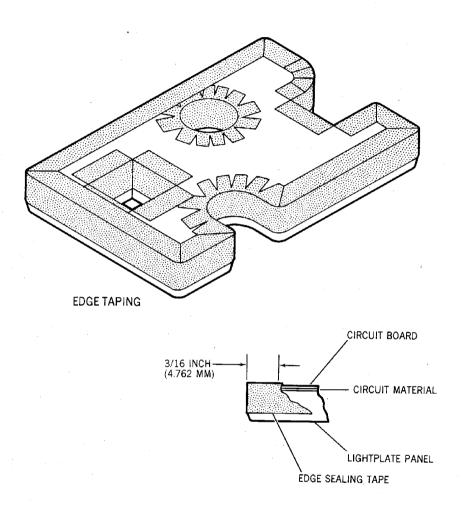
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# Sealing Tape Installation Figure 202/33-11-01-990-802

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# LIGHTING CONTROL PANELS - DESCRIPTION AND OPERATION

## 1. General

A. The lighting control panels consist of the captain's instrument panel lights control, the first officer's instrument panel lights control, the center instrument panel and pedestal lights control, and the overhead console lights control. Each panel controls the white flood, and integral instrument, and panel lights in a particular area of the flight compartment as follows:

Table 1			
Control Panel	Location	Lighting Controlled	
Captain's instrument panel lights	Outboard side of Captain's instrument panel	Captain's instru ment panel and left console	
First officer's instrument panel lights	Outboard side of first officer's instrument panel	First officer's instrument panel and right console	
Center instrument panel and pedestal lights	Forward pedestal	Center instrument panel, upper main instrument panel, glareshield, and control pedestal	
Overhead console lights	Forward overhead switch panel	Forward overhead switch panel, aft overhead switch panel, and map lights lightplates.	

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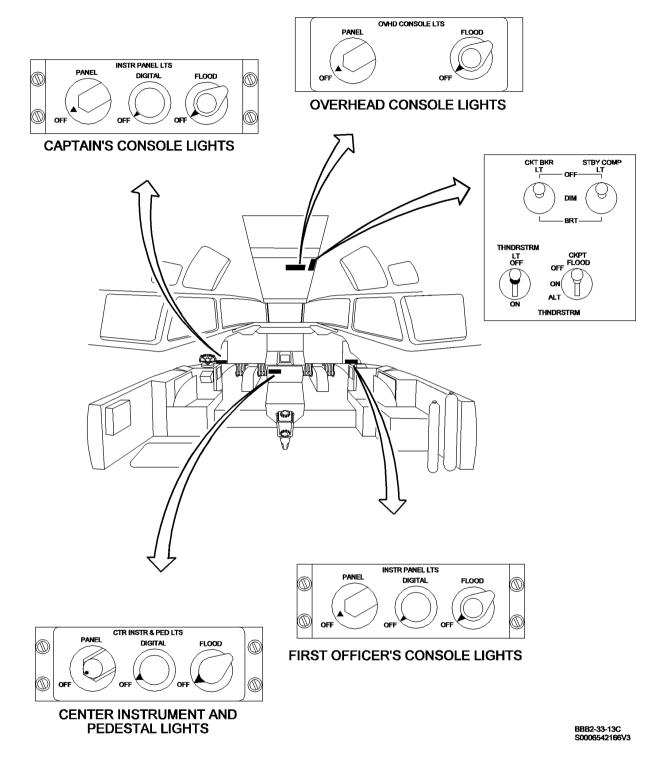
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Lighting Control Panels Figure 1/33-11-02-990-801

EFFECTIVITY

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## LIGHTING CONTROL PANELS - REMOVAL/INSTALLATION

## 1. General

A. The following procedures are given for removal and installation of the lighting control panels. It is not necessary to remove a lighting control panel to replace a lightplate. Replacement can be accomplished by removing the control knobs and the lightplate attaching screw from the face of the panel. When lightplate replacement is accomplished, rotate the panel lights control knob clockwise to verify proper operation of the lightplate.

## 2. Removal/Installation Lighting Control Panels

A. Remove Lighting Control Panel

## WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

(1) Open and tag following circuit breakers applicable to lighting control panel being removed:

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
7	20		

# Z 39 B1-292 COCKPIT WHITE FLOOD LIGHTS

## LOWER EPC, LIGHTS - LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
М	32	B1-845	CAPTAIN'S DIGITAL DISPLAY
М	33	B1-293	COCKPIT OVERHEAD WHITE FLOOD

## LOWER EPC, LIGHTS - R DC BUS

<u>Row Col Number Name</u>

N 33 B1-847 DIGITAL DISPLAY FIRST OFFICER'S

## **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

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

A 15 B1-479 CAPT & F/O WHITE FLOOD LIGHTS

WJE 410

A 16 B1-479 CAPT & F/O WHITE FLOOD LIGHTS **WJE ALL** 

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

Row	<u>Col</u>	<u>Number</u>	Name
K	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

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

Row	<u>Col</u>	<u>Number</u>	Name
L	17	B1-303	INTEGRAL LIGHTS F/O INST PANEL
L	18	B1-299	INST PANEL FLUORESCENT

(2) Loosen fasteners on face of control panel to gain access to electrical connector.

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**CAUTION:** MAKE CERTAIN WIRE HARNESS IS TAGGED TO PREVENT CROSS CONNECTION AND DAMAGE TO EQUIPMENT.

- (3) Tag wire harness and disconnect and cap electrical connector. Remove control panel.
- B. Install Lighting Control Panel

#### WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

(1) Make certain applicable following circuit breakers are open and tagged:

LOWER EPC, DC TRANSFER BUS				
<u>Row</u>	Col	<u>Number</u>	Name	
Z	39	B1-292	COCKPIT WHITE FLOOD LIGHTS	

# LOWER EPC, LIGHTS - LEFT DC BUS

Row	Col	Number	Name

М	32	B1-845	CAPTAIN'S DIGITAL DISPLAY
М	33	B1-293	COCKPIT OVERHEAD WHITE FLOOD

### LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ν	33	B1-847	DIGITAL DISPLAY FIRST OFFICER'S

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

Row Col Number Name

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

A 15 B1-479 CAPT & F/O WHITE FLOOD LIGHTS

WJE 410

A 16 B1-479 CAPT & F/O WHITE FLOOD LIGHTS

WJE ALL

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

## Row Col Number Name

K	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
K	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

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

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

17 B1-303 INTEGRAL LIGHTS F/O INST PANEL

18 B1-299 INST PANEL FLUORESCENT

- (2) Remove cap and tag from wire harness and connect electrical connector to control panel.
- (3) Position control panel on mount and secure fasteners.

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

# LOWER EPC, DC TRANSFER BUS

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

Z 39 B1-292 COCKPIT WHITE FLOOD LIGHTS

## LOWER EPC, LIGHTS - LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
Μ	32	B1-845	CAPTAIN'S DIGITAL DISPLAY
Μ	33	B1-293	COCKPIT OVERHEAD WHITE FLOOD

#### LOWER EPC, LIGHTS - R DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ν	33	B1-847	DIGITAL DISPLAY FIRST OFFICER'S

## OVERHEAD EMERGENCY DC BUS

<u>Row Col Number Name</u>

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 A 15 B1-479 CAPT & F/O WHITE FLOOD LIGHTS

WJE 410

A 16 B1-479 CAPT & F/O WHITE FLOOD LIGHTS **WJE ALL** 

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

Row Col Number Name

K	15	B1-300	INTEGRAL LIGHTS CAPTAIN'S INST PANEL
Κ	16	B1-312	INTEGRAL LIGHTS OVERHEAD PANEL FWD
K	17	B1-315	INTEGRAL LIGHTS OVERHEAD PANEL AFT
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL
K	19	B1-309	INTEGRAL LIGHTS PEDESTAL

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

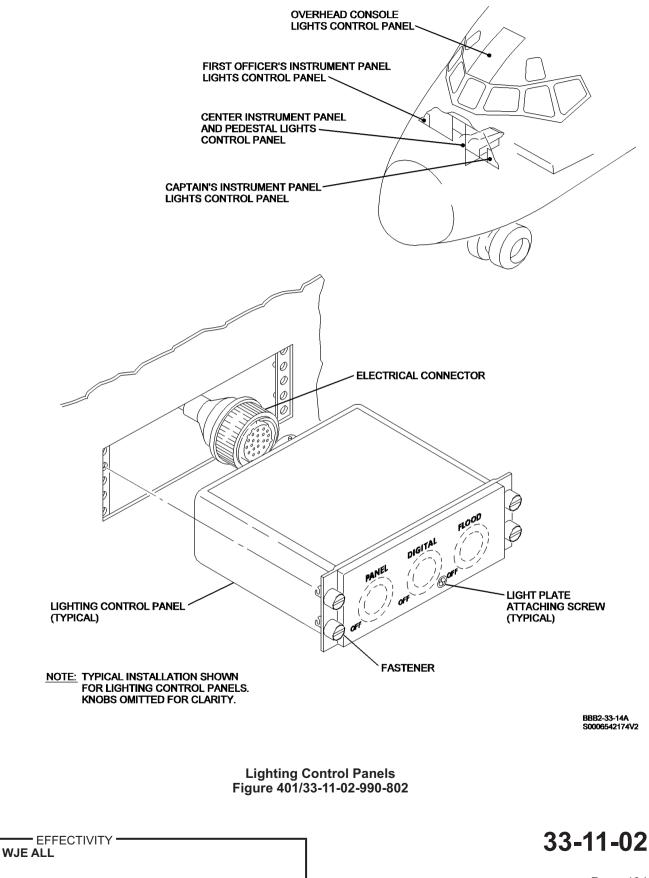
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
L	17	B1-303	INTEGRAL LIGHTS F/O INST PANEL
L	18	B1-299	INST PANEL FLUORESCENT

(5) Perform inspection/check to check proper operation of circuit.

WJE ALL

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# LIGHTING CONTROL PANELS - CHECK

## 1. General

A. The following procedures provide a functional check of the lighting control panels. While performing each check, slowly rotate the control knob to the full clockwise position and the corresponding lights should gradually increase in intensity. The lights should not flicker at any position of the control knob. When each check is completed, return the control knob to the off position.

# 2. Check Lighting Control Panels

- A. Check Lighting Control Panels
  - (1) Rotate following control knobs clockwise and verify that corresponding lights come on:

Panel	Control Knob	Lights
Captain's INSTR PANEL LTS	PANEL	Integral panel and instrument lights on captain's instrument panel and left console.
	DIGITAL	Integral panel on digital display indicators on captain's instrument panel.
	FLOOD (small tandem knob)	Incandescent flood lights on underside of glareshield (left side).
	FLOOD (large tandem knob)	Fluorescent lights on underside of glare shield (left side).
First officer's instrument panel lights	PANEL	Integral panel and instrument lights on first officer's instrument panel and right console.
	DIGITAL	Integral panel on digital display indicators on first officer's instrument panel.
	FLOOD (small tandem knob)	Incandescent flood lights on underside of glareshield (right side).
	FLOOD (large tandem knob)	Fluorescent lights on underside of glare shield (right side).
Center instrument panel and pedestal lights	PANEL (small tandem knob)	Integral panel and instrument lights on center instrument panel, glareshield, and upper main instrument panel.
	PANEL (large tandem knob)	Integral panel and instrument lights on control pedestal.
	DIGITAL	Integral panel on digital display indicators on center instrument and pedestal panels.
	FLOOD	Floodlights under center of glare shield and two flood lights in ceiling.
Overhead console lights	PANEL	Integral panel and instrument lights on forward and aft over head switch panels and map lights lightplates.
	FLOOD	Floodlights on flight compartment bulkhead.

Table 601

WJE ALL

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33-11-02



## MASTER WARNING AND CAUTION SYSTEM - DESCRIPTION AND OPERATION

#### 1. General

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

- A. The master warning and caution system consists of master warning and caution lights on the glareshield, an annunciator panel for visual indication of fault signals, and a controller which controls switching of the warning and caution circuits.
- B. There are two sets of master warning and caution lights installed on the glareshield: one set in front of the captain and one set in front of the first officer. The caps are keyed mechanically to the light assembly to prevent interchanging light caps. The master warning lights on the glareshield are connected in the system to come on when any warning light on the annunciator panel comes on. Only certain caution lights on the annunciator panel are connected to the master caution light circuit. The master warning and caution lights can be turned off by depressing the light cap.
- C. The annunciator panel, located on the overhead switch panel, contains a series of warning and caution lights which operate in conjunction with the master warning and caution lights installed on the glareshield. The panel also includes all components which provide dimming of the lights and testing of all annunciator circuits. The annunciator lights operate when the circuits are closed to ground. The circuitry has transistors, silicon-controlled rectifiers, relays, and various switches to accomplish ground switching.
- D. The warning and caution lights on the annunciator panel are arranged according to airplane system. Each annunciator has a legend which describes the appropriate system malfunction. Red lights indicate a warning malfunction, requiring immediate corrective action. Amber lights indicate a caution malfunction and require attention, but not necessarily immediate action. Blue advisory lights are also installed on the panel but are not connected to the master warning and caution system. Although the master warning and caution lights can be turned off by depressing the lens, the annunciator lights remain on until the system malfunction is corrected. The master caution lights will automatically reset when the failures are no longer present.

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

- E. The master warning and caution system consists of master warning and caution lights on the glareshield, an EOAP (Electronic Overhead Annunciator Panel) for visual indication of fault signals, and a controller which controls switching of the warning and caution circuits.
- F. There are two sets of master warning and caution lights installed on the glareshield: one set in front of the captain and one set in front of the first officer. The caps are keyed mechanically to the light assembly to prevent interchanging light caps. The master warning lights on the glareshield are connected in the system to come on when any warning light on the EOAP comes on. Only certain caution LED displays on the annunciator panel are connected to the master caution light circuit. The master warning and caution lights can be turned off by depressing the light cap.
- G. The Electronic Overhead Annunciator Panel (EOAP) is located in the overhead switch panel. It contains a series of warning lights and caution displays which operate in conjunction with the master warning and caution lights installed on the glareshield. The overhead panel contains ANNUN/ DIGITAL LTS TEST switch for testing annunciator and LED illumination. The overhead panel also contains the PULL TO DIM knob for adjusting the brightness of all annunciators/displays except the DOOR annunciators/messages.
  - NOTE: The EOAP will "Time Out" (both screens, cue switches and scroll arrows blank) when 3 of the 4 combinable messages (R&L OIL PRESS LOW, R&L GEN OFF, R&L HYD PRESS LOW, R&L CSD OIL PRESS LOW) are present for approximately 30 minutes. The EOAP will resume normal operation if any of the following events occur:
    - The ANNUN/DIGITAL LTS TEST switch is activated.

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

- Any cue switch is activated.
- A new message is received.
- An old message is removed.
- Η. The warning lights and caution LED displays on the annunciator panel are arranged according to aircraft system. Each annunciator has a legend which describes the appropriate system malfunction. Red lights indicate a warning malfunction, requiring immediate corrective action, Amber LED displays indicate a caution malfunction and require attention, but not necessarily immediate action. Blue advisory lights are also installed on the panel but are not connected to the master warning and caution system. The warning and advisory lights are located on the right side of the panel and the caution displays are shown on two LED screens on the opposite side. The LED screens have the capability of annunciating twelve caution displays, six displays per screen. To facilitate remaining annunciations, two amber lighted scroll (arrow) switches are provided to display any annunciations off screen. Eight amber lighted cue switches below the screen are also provided which enable system cautions to be annunciated when both screens are full. Seven cue switches are for various aircraft systems. The MON cue switch monitors the EOAP for internal faults. Whenever a caution input is received, the associated system cue light flashes four times and then goes out. These cue switches are only steadily illuminated if a message associated with that particular system is stored off screen. This enables system cautions to be displayed even if the screens are full. Pressing the illuminated cue switch displays any caution messages associated with that particular system on the LED screen. Although the master warning and caution lights can be turned off by depressing the lens, the annunciator lights and displays remain on until the system malfunction is corrected. The master caution lights will automatically reset when the failures are no longer present.

#### WJE ALL

I. The controller is a ground switching unit which controls electrical power to the master warning and caution lights and to the lights on the annunciator panel. It is located in the electrical/electronic compartment.

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

J. A pushbutton-type test switch is located on the overhead switch panel, adjacent to the annunciator panel to verify lamp filament integrity and master light logic actuation. A pull-to-dim switch, located on the panel with the test switch, operates in conjunction with a resistor dimming box to dim the annunciator panel lights. The door caution lights on the annunciator panel and the master warning and caution lights on the glareshield cannot be dimmed.

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

- K. The ANNUN/DIGITAL LTS TEST switch is located on the overhead switch panel, adjacent to the annunciator panel. Depressing this switch tests all annunciator lights, scroll switch lights, Master Warning lights, Master Caution lights, and performs the LED display test. During the display test, the EOAP screens display scanning lighted vertical bars beginning at left and stepping, one position at a time, to the right. The ANNUN/DIGITAL LTS TEST switch also 'Grounds' two caution inputs, i.e. L OIL STRAINER CLOG and R OIL STRAINER CLOG. Consequently on application of the display test input one or both of these cautions may appear momentarily on the LED panels. On release of the switch the ENG system cue light can enter a flashing sequence. A pull-to-dim switch, located on the overhead panel, with the test switch, operates in conjunction with a resistor dimming box to dim the annunciator panel lights and displays. The DOOR cue switch light on the annunciator panel and the master warning and caution lights on the glareshield cannot be dimmed.
  - NOTE: If the ANNUN/DIGITAL LTS TEST switch is depressed for longer than 1 minute, the EOAP will automatically revert to normal operation. At this time the L&R OIL STRAINER CLOG messages will be displayed on the LED screen. The ANNUN/DIGITAL LTS TEST switch will have to be released to remove these messages. The Warning/Advisory Annunciators are not processor controlled and therefore will not time out. To re-activate display test the switch must be released for at least 2 seconds and then re-selected. If the ANNUN/DIGITAL LTS TEST switch is released and reactivated within 2 seconds then a condition can occur where the left screen will enter display test and the right screen will blank and the SCROLL and CUE lights will flash. On release of the switch, the panel will resume normal operation.

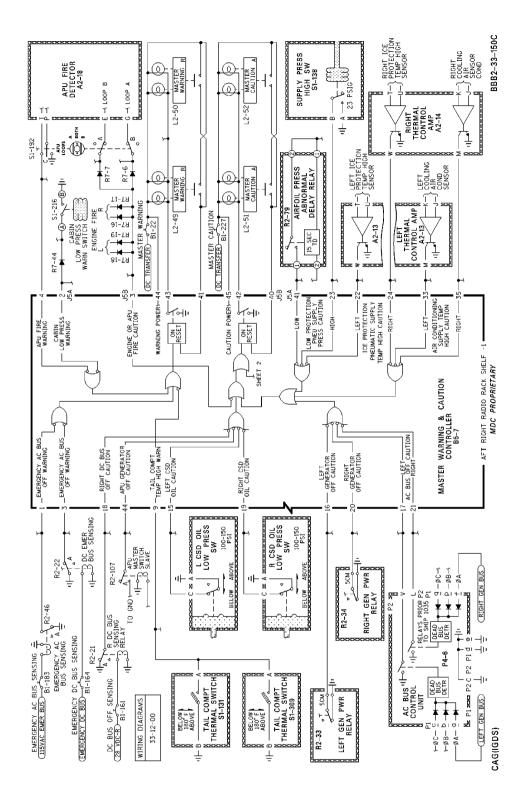
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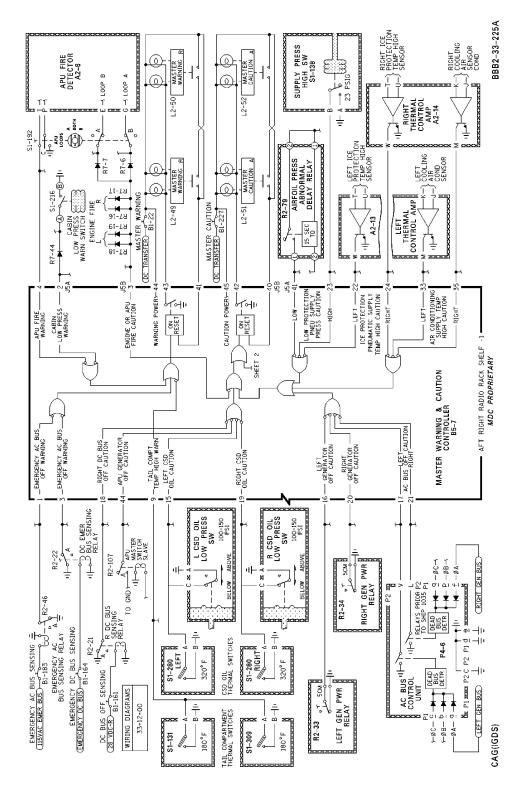
Master Warning and Caution -- System Schematic Figure 1/33-12-00-990-801 (Sheet 1 of 6)

EFFECTIVITY WJE 401-404, 406, 409, 410, 412, 414, 422, 425, 427, 873, 874, 881, 883, 884, 886, 887, 892, 893 33-12-00

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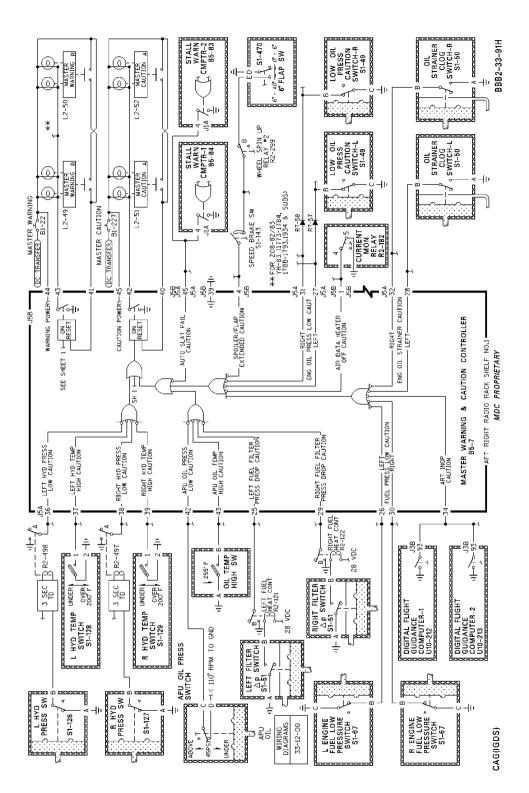


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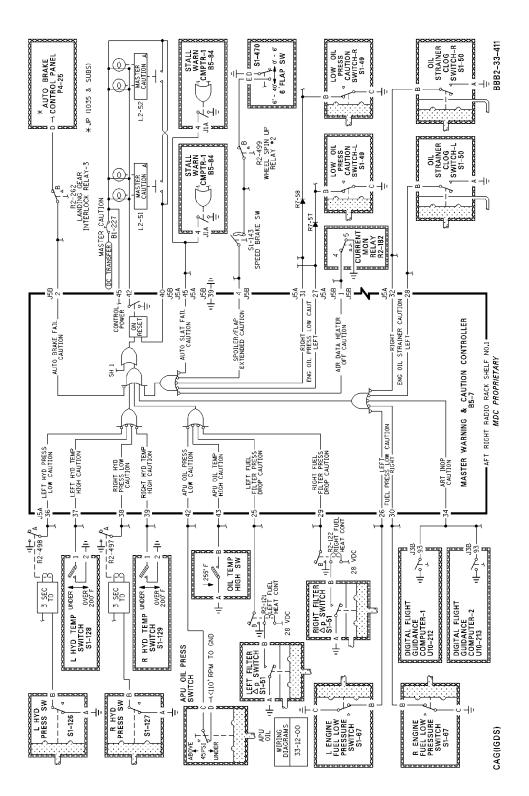
Master Warning and Caution -- System Schematic Figure 1/33-12-00-990-801 (Sheet 3 of 6)

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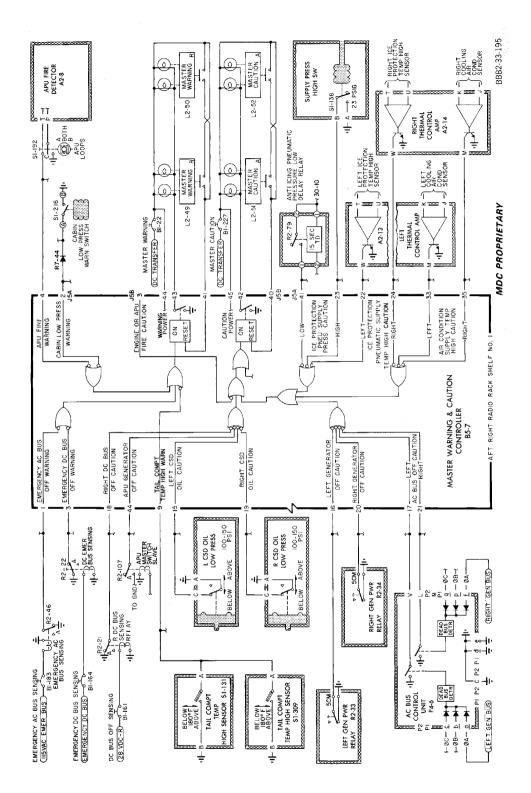
Master Warning and Caution -- System Schematic Figure 1/33-12-00-990-801 (Sheet 4 of 6)

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

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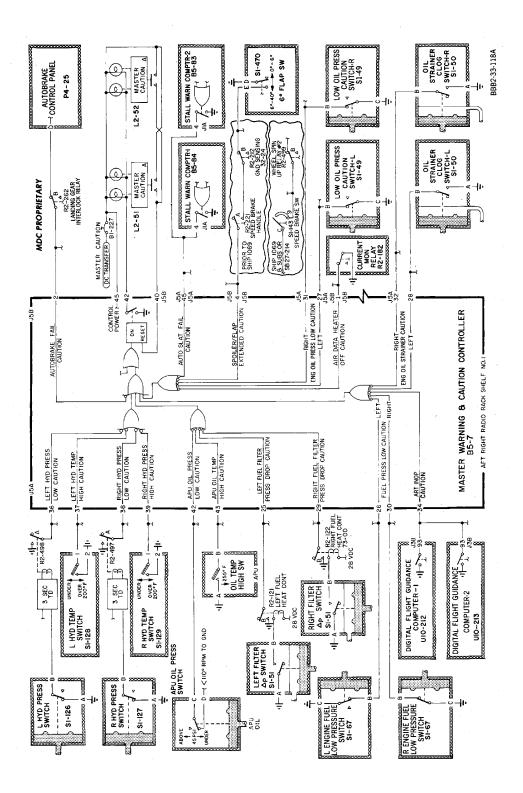
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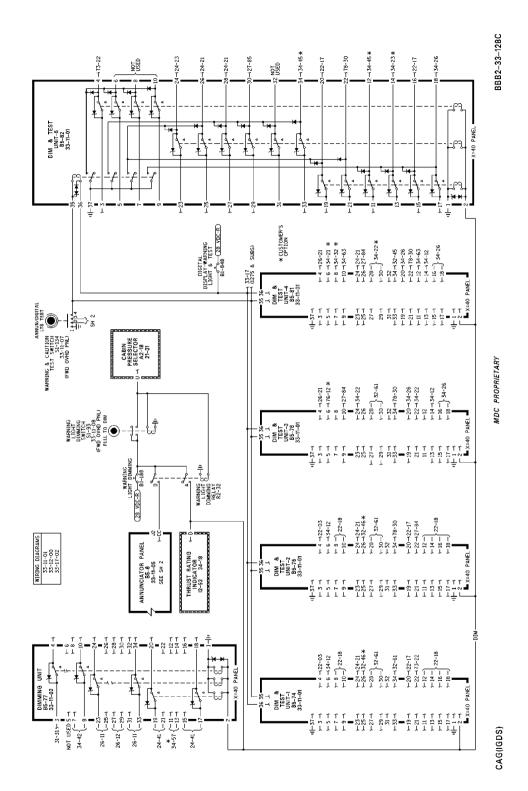
Master Warning and Caution -- System Schematic Figure 1/33-12-00-990-801 (Sheet 6 of 6)

EFFECTIVITY WJE 401-404, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872 33-12-00

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Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 1 of 10)

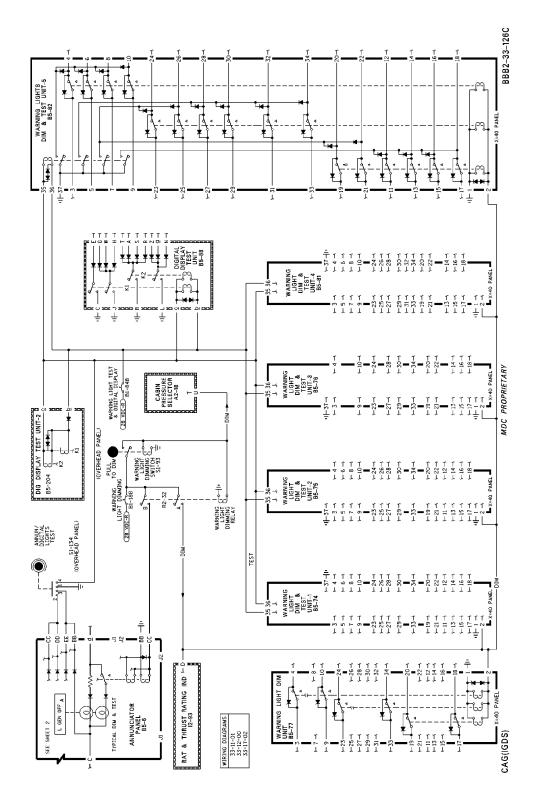
WJE 405-411, 880, 881, 883, 884

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Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 2 of 10)

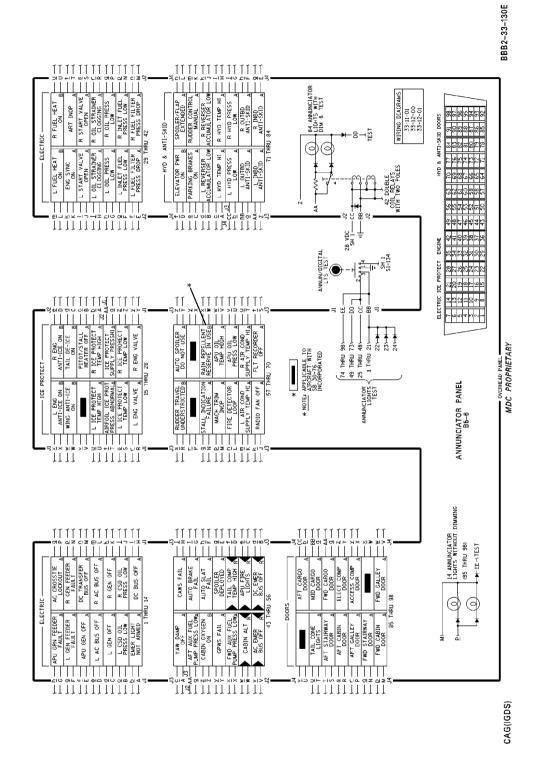
WJE 873, 874, 892, 893

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Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 3 of 10)

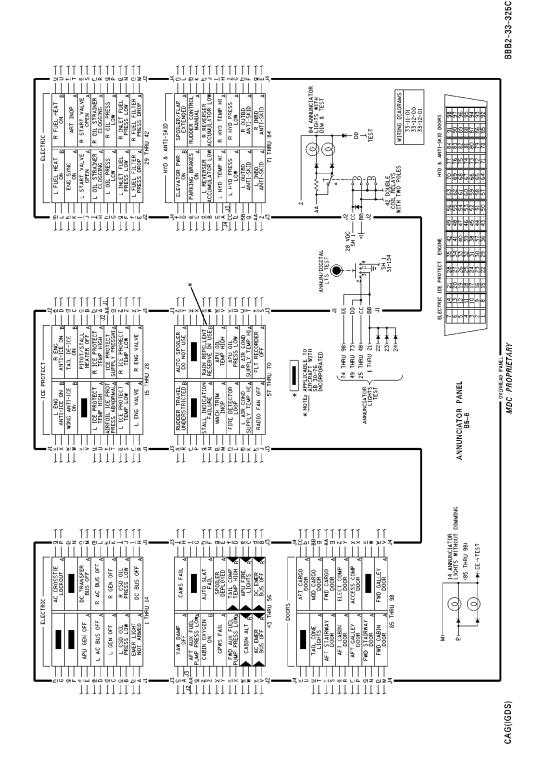
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Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 4 of 10)

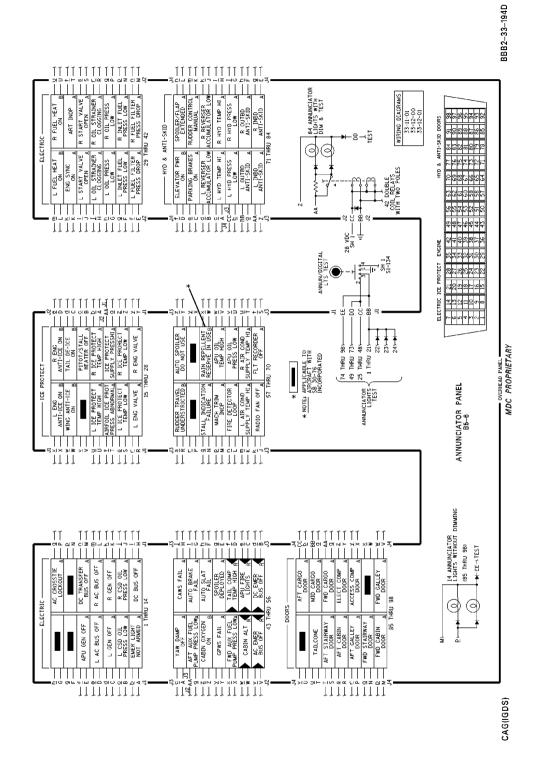
WJE 409, 410, 881, 883, 884

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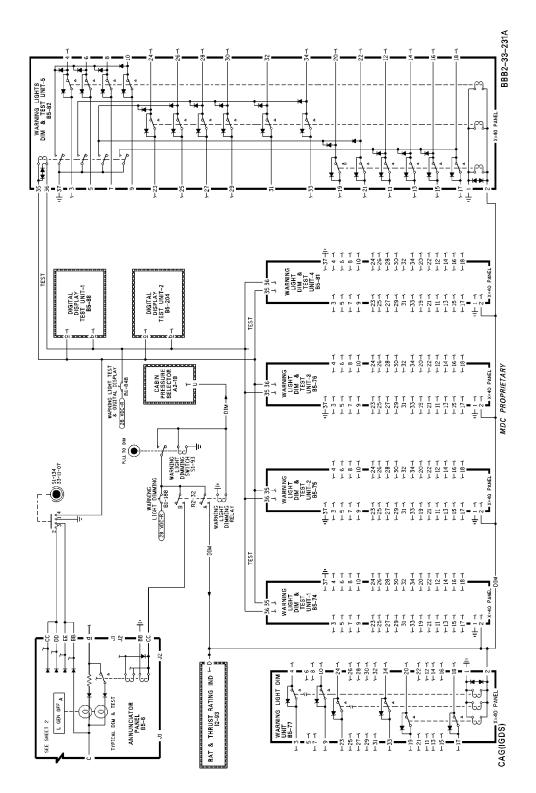
Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 5 of 10)

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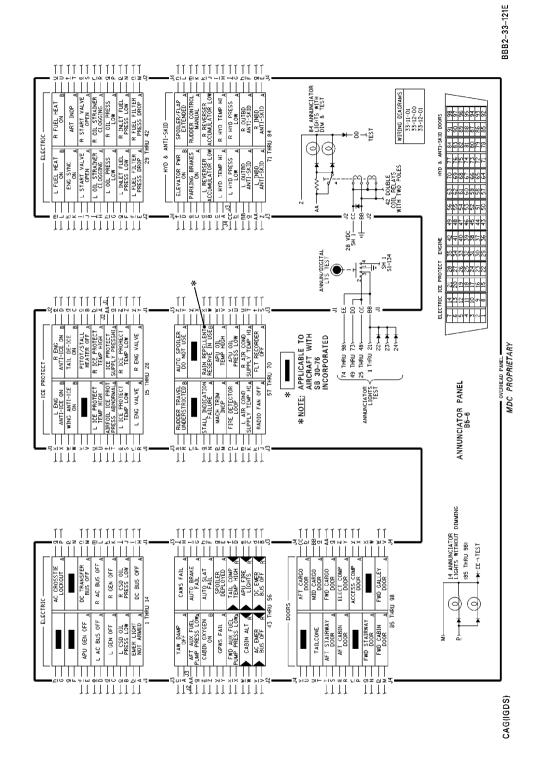
Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 6 of 10)

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Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 7 of 10)

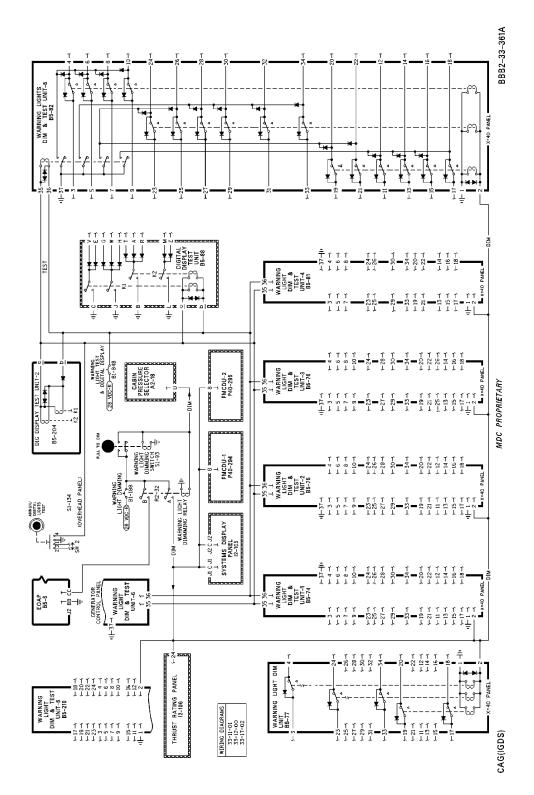
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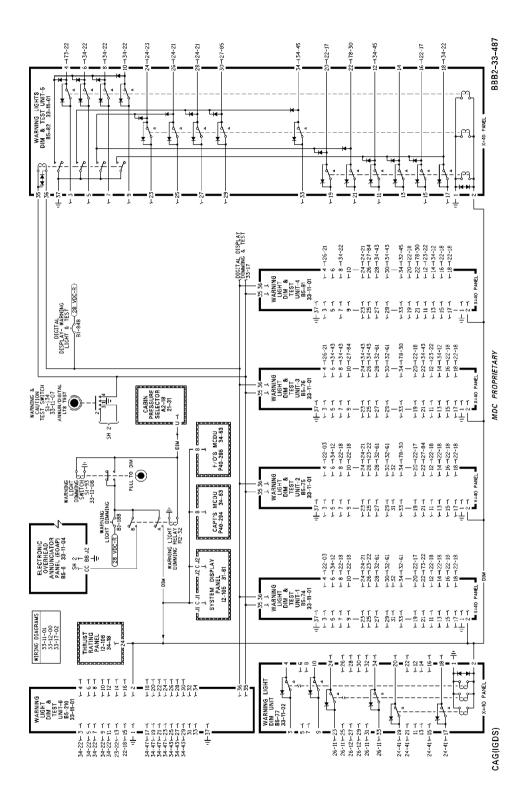


Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 8 of 10)

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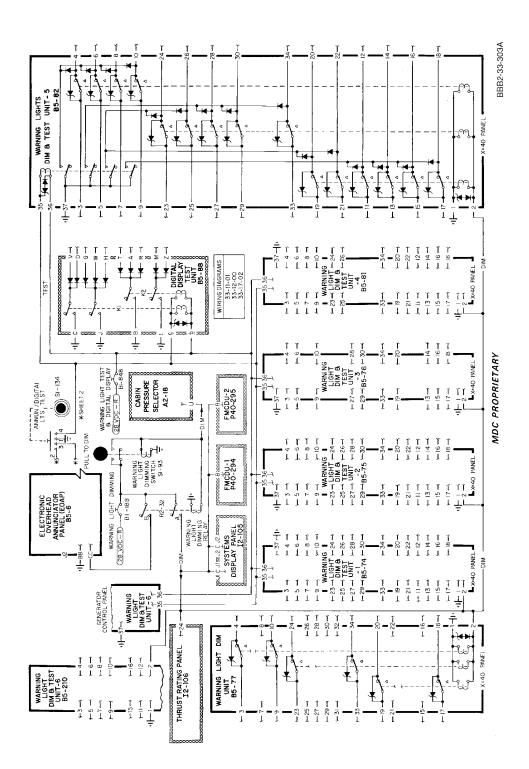
Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 9 of 10)

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Annunciator Panel Dim and Test -- Schematic Figure 2/33-12-00-990-802 (Sheet 10 of 10)

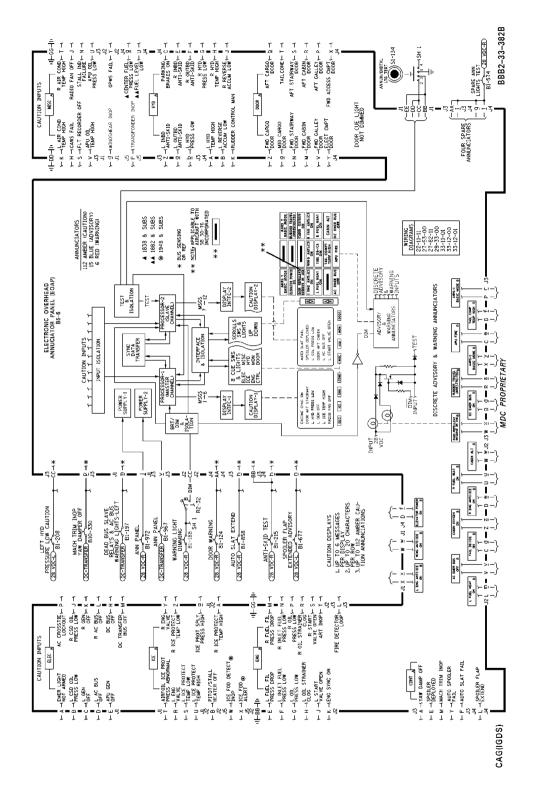
WJE 415, 417-419, 421, 423, 863-866, 869, 871, 872

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Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 1 of 7)

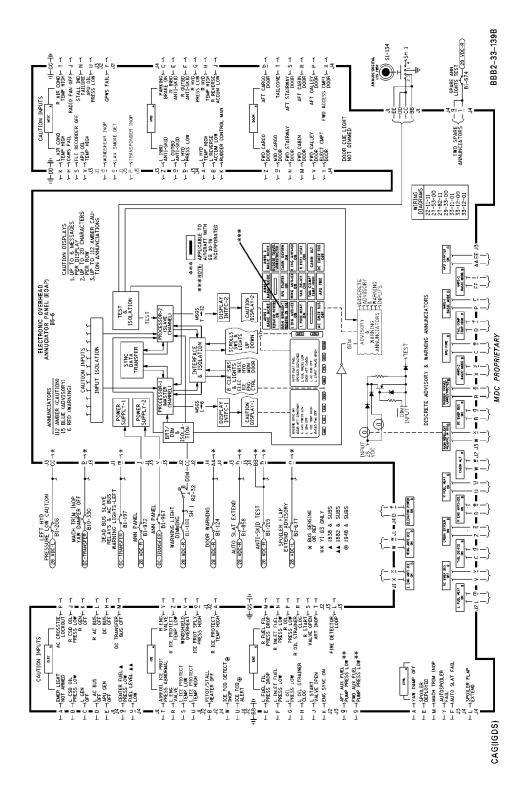
WJE 886, 887

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Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 2 of 7)

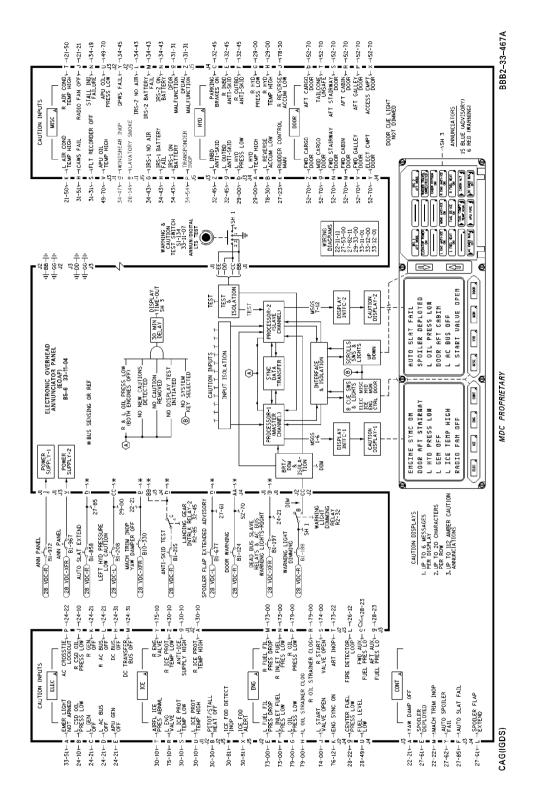
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Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 3 of 7)

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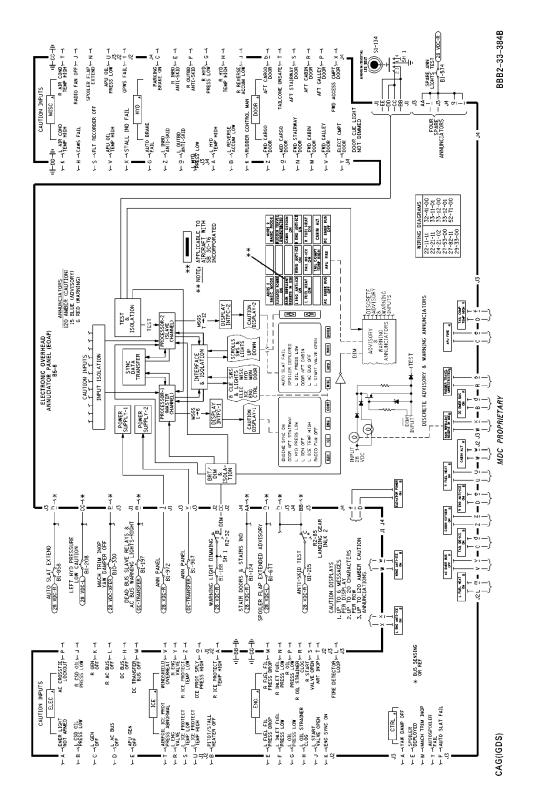
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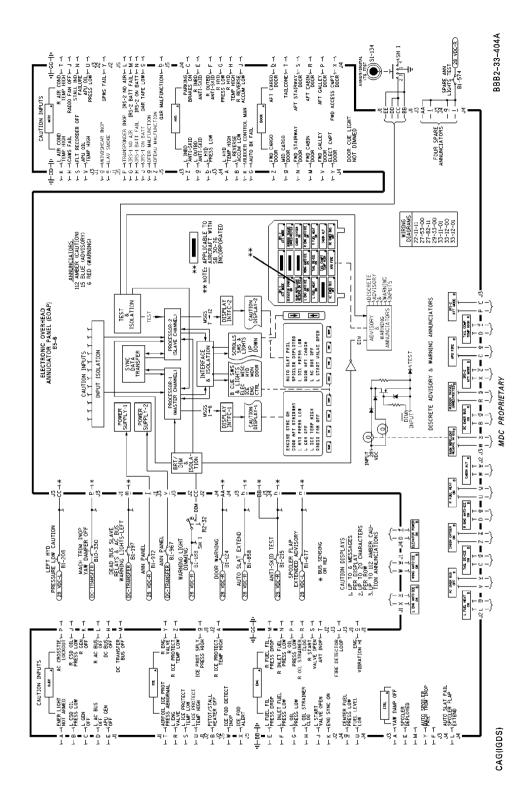
Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 4 of 7)

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Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 5 of 7)

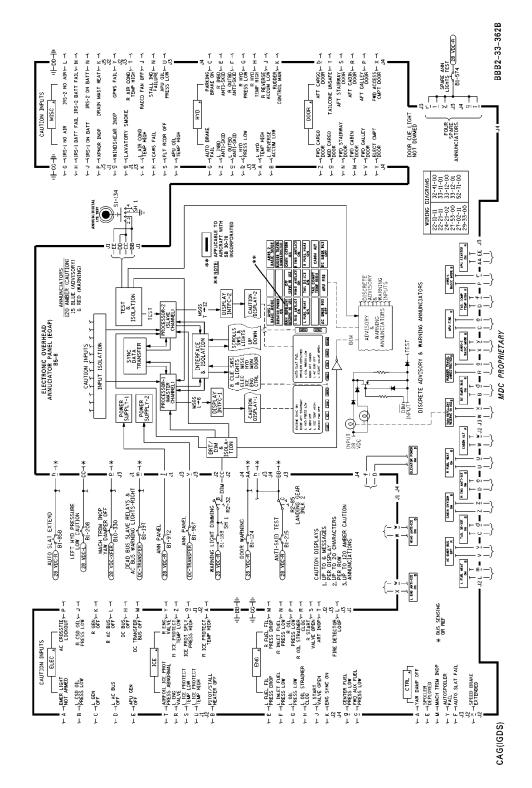
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Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 6 of 7)

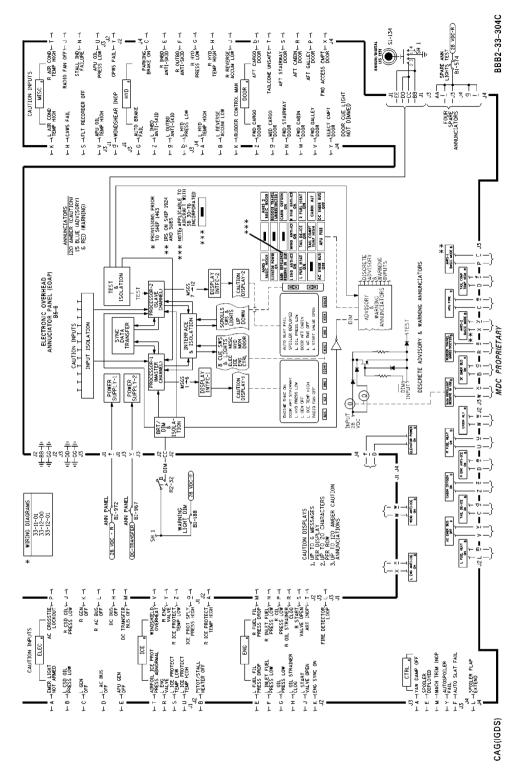
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Electronic Overhead Annunciator Panel -- Schematic Figure 3/33-12-00-990-815 (Sheet 7 of 7)

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#### **MASTER WARNING AND CAUTION SYSTEM - MAINTENANCE PRACTICES**

#### 1. General

A. This maintenance practice provides test procedures to verify correct operation of the Master Warning and Caution System (MWACS). The check is presented in sequence and identified by component functions.

#### 2. Test Master Warning and Caution System

- A. The following is a functional test of the annunciator panel, master warning, and master caution lights.
  - (1) Make sure that these circuit breakers are closed:

```
LOWER EPC, DC TRANSFER BUS
              Number
                         Name
 Row
        Col
WJE 875, 876
  U
              B1-967
                         ANN PANEL
         35
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-876, 880, 881,
883, 884, 891-893
  Ζ
         41
              B1-22
                         MASTER WARNING
  Ζ
         42
              B1-227
                         MASTER CAUTION
LOWER EPC, ENGINE - RIGHT DC BUS
              Number
                         Name
 Row
        Col
WJE 875. 876
  Т
         24
              B1-972
                         ANN PANEL
LOWER EPC, LIGHTS - R DC BUS
 Row
        Col Number
                         Name
WJE 405, 407-409, 411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-876, 880, 881,
883, 884, 891-893
  Ν
         34
              B1-848
                         DIGITAL DISPLAY WARNING LIGHT & TEST
  Ν
         35
              B1-574
                         SPARE ANN LIGHTS TEST
LOWER EPC, MISCELLANEOUS RIGHT DC BUS
        Col Number
 Row
                         Name
  R
         25
              B1-188
                         WARNING LIGHT DIMMING
NOTE: Any flags and failure messages during the test may be disregarded provided the
       indicator is otherwise operating normally.
Press ANNUN/DIGITAL LIGHTS TEST switch on forward overhead switch panel. All
annunciator lights come on and master warning and master caution lights come on.
Pull DIM switch on forward overhead switch panel. Some lights on annunciator panel dim.
Master warning and master caution lights remain bright.
```

- (4) Release ANNUN/DIGITAL LIGHTS TEST switch and press DIM switch to the BRIGHT position. Annunciator lights and master warning and master caution lights go off.
- (5) Return aircraft to required configuration.

(2)

(3)



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#### **MASTER WARNING AND CAUTION SYSTEM - MAINTENANCE PRACTICES**

#### 1. General

A. This maintenance practice provides adjustment/test procedures to verify correct operation of the Master Warning and Caution System (MWACS). The check is presented in sequence and identified by component functions.

# 2. Adjustment/Test Master Warning and Caution System

- A. Test Master Warning and Caution System.
- B. The following is a functional test of the EOAP, master warning and caution lights.
  - (1) Make sure that these circuit breakers are closed:

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	35	B1-967	ANN PANEL
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

# LOWER EPC, ENGINE - RIGHT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ŧ	04	D1 070	

T 24 B1-972 ANN PANEL

# LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

# LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
R	25	B1-188	WARNING LIGHT DIMMING

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- (2) Press and hold ANNUN/DIGITAL LTS TEST switch on forward overhead switch panel. All annunciator lights, cue switch lights, scroll switch lights and master warning and master caution lights come on. EOAP screens display scanning lighted vertical bars beginning at left and stepping, one position at a time to right. Intermittently, a random number of LED columns will illuminate near the center area of the right screen when the scanning light bars reach the right edge of the left screen. In addition, the panel may intermittently go dark for several seconds except for a lighted bar segment on the right screen, if the test switch is released before the lighted bar has completed its entire scan of the left and right screens. These anomalies are normal and should not be considered as failures. Applying a Display Test I/P to the indicator also 'Grounds' two caution I/Ps, i.e. L OIL STRAINER CLOG and R OIL STRAINER CLOG. Consequently on application of the Display Test I/P one or both of these cautions may appear momentarily on the LED panels. On release of the Display Test I/P the ENG system cue light can enter a flashing sequence. These anomalies should not be considered as failures.
  - <u>NOTE</u>: On applicable aircraft equipped with super EOAP, all LED's on both screens will illuminate simultaneously in lieu of scanning lighted vertical bars.
  - <u>NOTE</u>: If the ANNUN/DIGITAL LTS TEST switch is depressed for longer than 1 minute, the EOAP will automatically revert to normal operation. At this time the L&R OIL STRAINER CLOG messages will be displayed on the LED screen. The ANNUN/DIGITAL LTS TEST switch will have to be released to remove these messages. The Warning/Advisory Annunciators are not processor controlled and therefore will not time out. To re-activate display test the switch must be released for at least 2 seconds and then re-selected. If the ANNUN/DIGITAL LTS TEST switch is released and reactivated within 2 seconds then a condition can occur where the left screen will enter display test and the right screen will blank and the SCROLL and CUE lights will flash. On release of the switch, the panel will resume normal operation.
  - NOTE: The EOAP will "Time Out" (both screens, cue switches and scroll arrows blank) when 3 of the 4 combinable messages (R&L OIL PRESS LOW, R&L GEN OFF, R&L HYD PRESS LOW, R&L CSD OIL PRESS LOW) are present for approximately 30 minutes. The EOAP will resume normal operation if any of the following events occur:
    - The ANNUN/DIGITAL LTS TEST switch is activated.
    - Any cue switch is activated.
    - A new message is received.
    - An old message is removed.
- (3) Pull DIM switch on forward overhead switch panel. All lights and display on annunciator panel dim with exception of DOORS cue switch light. Master warning and master caution lights remain bright.
- (4) Release ANNUN/DIGITAL LTS TEST switch and press DIM switch to BRIGHT position. Annunciator lights and displays and master warning and master caution lights go off.
- (5) Return aircraft to required configuration.
- C. The following is a maintenance BIT test of the EOAP.
  - (1) Make sure that these circuit breakers are closed:

#### LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	Name
U	35	B1-967	ANN PANEL
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION



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#### LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Т	24	B1-972	ANN PANEL

#### LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

R 25 B1-188 WARNING LIGHT DIMMING

- (2) Beginning from left, press each system cue switch. Ensure that only messages associated with that particular system, and were previously displayed, remain on the screen.
  - <u>NOTE</u>: If the screen is full, the scroll switches may need to be used to check all subsystem messages.
  - <u>NOTE</u>: If there are no messages associated with a particular system cue switch present, then a NO "system name" FAULTS (i.e., "NO ELECTRICAL FAULTS") message appears on the screen.
  - <u>NOTE</u>: If there are any messages other than "NO MONITOR FAULTS" present when the "MON" switch is pressed, the EOAP should be replaced and LRU recheck performed.
- (3) Simultaneously press and hold both scroll (arrow) switches and MON (monitor) cue switch (second cue switch from right). Check that no fault codes appear (i.e., ROM, RAM, etc.) on EOAP screens and that only following displays should come on:

P/N	Left Screen	Right Screen		
101ADP*-1	PROGRAM LS FDS 0126 LEGENDS LS FDS 0121	PROGRAM LS FDS 0126 LEGENDS LS FDS 0121		
101ADP2-2	PROGRAM LS FDS 0126 LEGENDS LS FDS 0151	PROGRAM LS FDS 0126 LEGENDS LS FDS 0151		
102ADP*-1	PROGRAM LS FDS 0201 LEGENDS LS FDS 0202	PROGRAM LS FDS 0201 LEGENDS LS FDS 0202		
102ADP*-2	PROGRAM LS FDS 0201 LEGENDS LS FDS 0400	PROGRAM LS FDS 0201 LEGENDS LS FDS 0400		
102ADP3-4	PROGRAM LS FDS 0201 LEGENDS LS CC31860	PROGRAM LS FDS 0201 LEGENDS LS CC31860		
NOTE: The asterisk (*	) represents the numeral which follows "ADP" in th	e part number.		
NOTE: Should any fault codes appear, EOAP should be replaced.				

# Table 201

- (4) Release switches. Displays should go off momentarily.
- (5) Return aircraft to required configuration.
- D. EOAP Manual BITE Test



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- (1) Simultaneously depress both scroll keys, in conjunction with MON key; EOAP will enter BITE mode for approximately 3 seconds.
- (2) If FAULT is present, further maintenance is required.
- (3) If FAULT is no longer present, system is serviceable for dispatch.



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#### MASTER WARNING AND CAUTION SYSTEM (MWACS) ANNUNCIATOR PANEL- MAINTENANCE PRACTICES

#### 1. General

A. Procedures are given for removing the annunciator panel from the aircraft, replacing a lamp or legend, and installing the annunciator panel. However, it is not necessary to remove the annunciator panel from the aircraft to replace only a lamp or a legend. To relamp, release spring latch, swing desired sections of legends open, remove lamp, and install new lamp. Close and latch legend door. Test lamp by pressing test lights switch on overhead switch panel.

#### 2. Removal/Installation Annunciator Panel

#### A. Remove Panel

(Master Warning and Caution System -- Removal/Installation/Figure 201)

- WARNING: GET SUFFICIENT AID FROM PERSONS AND EQUIPMENT TO HOLD THE COMPONENT DURING REMOVAL AND INSTALLATION. THIS COMPONENT WEIGHS APPROXIMATELY 60 LBS (27.2 KG). THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.
- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Open these circuit breakers and install safety tags:

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ζ	41	B1-22	MASTER WARNING
Ζ	42	B1-227	MASTER CAUTION

# LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

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

- R 25 B1-188 WARNING LIGHT DIMMING
- (2) Release quick-action fasteners and safety latch and swing the forward overhead switch panel down out of way.
- (3) Disconnect electrical connectors from annunciator panel.
- (4) Remove attaching screws and remove annunciator panel.
- (5) Release spring latch clips and swing desired section of legends open.
- (6) Remove lamps.
- (7) Remove, in order: wire clip, lamp carrier, spacers, filter, and legend.
- B. Install Panel (Master Warning and Caution System -- Removal/Installation/Figure 201)



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- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Make sure that these circuit breakers are open and have safety tags:

#### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

#### LOWER EPC, LIGHTS - R DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

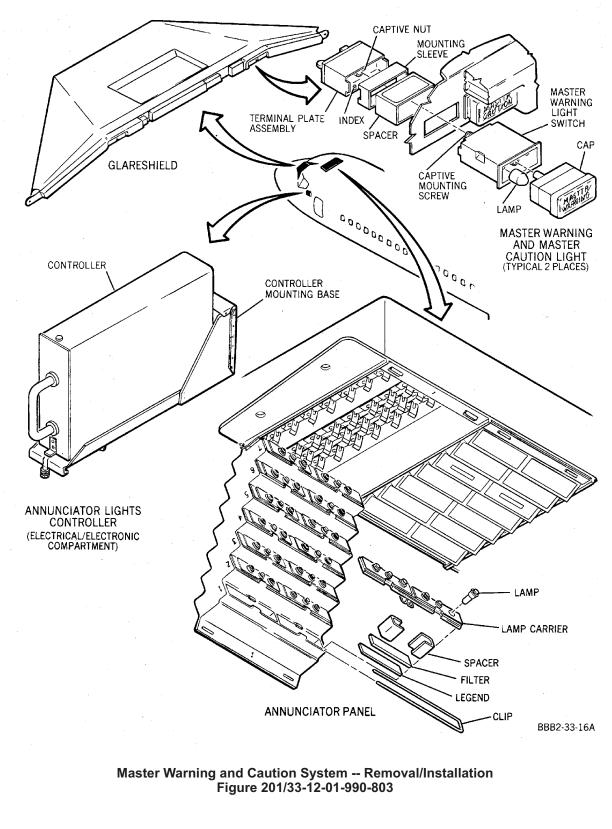
Row Col Number Name R 25 B1-188 WARNING LIGHT DIMMING

- (2) Install in order: legend, filter, spacer, lamp carrier, and wire clip.
- (3) Install lamps.
- (4) Close section of legends and secure with spring latch clips.
- (5) Position annunciator panel in aircraft and install attaching screws.
- (6) Connect electrical connectors to annunciator panel.
- (7) Close forward overhead switch panel and secure quick-action fasteners.
- (8) Remove tags and close following circuit breakers:
- (9) Perform system test (MASTER WARNING AND CAUTION SYSTEM, SUBJECT 33-12-00, Page 201)

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EFFECTIVITY WJE 405, 407-411, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-876, 880, 881, 883, 884, 891-893 33-12-01

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#### MASTER WARNING AND CAUTION SYSTEM (MWACS) ANNUNCIATOR PANEL-MAINTENANCE PRACTICES

#### 1. General

A. Procedures are given for removing the EOAP (Electronic Overhead Annunciator Panel) from the aircraft, replacing a lamp and installing the EOAP. However, it is not necessary to remove the EOAP from the aircraft to replace only a lamp. Replacing the EOAP lamps include warning and advisory lamps, system cue switch lamps and scroll (arrow) switch lamps. Test lamp by pressing test lights switch on overhead switch panel.

#### 2. <u>Removal/Installation Master Warning and Caution System Annunciator Panel</u>

A. Remove Annunciator Panel

(Figure 201)

- WARNING: GET SUFFICIENT AID FROM PERSONS AND EQUIPMENT TO HOLD THE COMPONENT DURING REMOVAL AND INSTALLATION. THIS COMPONENT WEIGHS APPROXIMATELY 60 LBS (27.2 KG). THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.
- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Open these circuit breakers and install safety tags:

#### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	35	B1-967	ANN PANEL
Ζ	41	B1-22	MASTER WARNING
Ζ	42	B1-227	MASTER CAUTION

#### LOWER EPC, ENGINE - RIGHT DC BUS

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

T 24 B1-972 ANN PANEL

#### LOWER EPC, LIGHTS - R DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

#### Row Col Number Name

- R 25 B1-188 WARNING LIGHT DIMMING
- (2) Release quick-action fasteners and safety latch and swing the forward overhead switch panel down out of way.
- (3) Disconnect electrical connectors from EOAP.
- (4) Remove attaching screws and remove annunciator panel.
- (5) Remove warning/advisory lamp as follows:
  - (a) Release spring latch clips and swing legend panel open.
  - (b) Remove lamp.



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- (6) Remove scroll (arrow) switch lamp as follows:
  - (a) Loosen captive screws and remove switch housing.
  - (b) Remove lamp.
- (7) Remove system cue switch lamp as follows:
  - (a) Loosen captive screws and remove switch housing.
  - (b) Remove lamp.
- B. Install Annunciator Panel

(Figure 201)

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

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

#### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	35	B1-967	ANN PANEL
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

#### LOWER EPC, ENGINE - RIGHT DC BUS

<u>Row</u>	Col	<u>Number</u>	<u>Name</u>
Т	24	B1-972	ANN PANEL

#### LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

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

- R 25 B1-188 WARNING LIGHT DIMMING
- (2) Install system cue switch lamp as follows:
  - (a) Install lamp.
  - (b) Position switch housing on panel and tighten captive screws.
- (3) Install scroll (arrow) switch lamp as follows:
  - (a) Install lamp.
  - (b) Position switch housing on panel and tighten captive screws.
- (4) Install warning/advisory lamp as follows:
  - (a) Install lamp.
  - (b) Close legend panel and secure with spring latch clips.
- (5) Position annunciator panel in aircraft and install attaching screws.
- (6) Connect electrical connectors to annunciator panel.
- (7) Close forward overhead switch panel and secure quick-action fasteners.

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



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

# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
U	35	B1-967	ANN PANEL
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

#### LOWER EPC, ENGINE - RIGHT DC BUS

- Row Col Number Name
- T 24 B1-972 ANN PANEL

#### LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT &
Ν	35	B1-574	SPARE ANN LIGHTS TEST

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
R	25	B1-188	WARNING LIGHT DIMMING

(9) Perform system test (MASTER WARNING AND CAUTION SYSTEM, SUBJECT 33-12-00, Page 201).

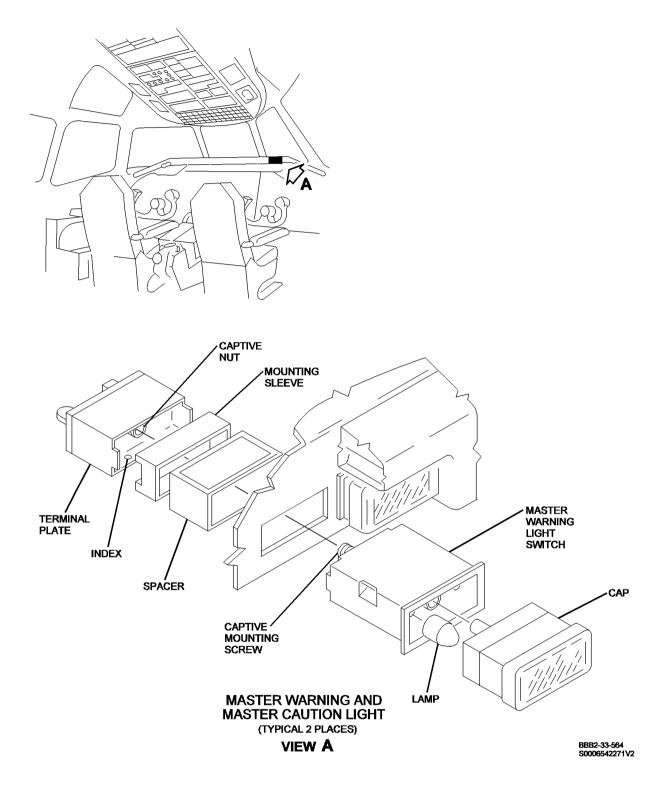
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Master Warning and Caution System -- Removal/Installation Figure 201/33-12-01-990-801

EFFECTIVITY WJE 401-404, 406, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 875-879, 886, 887 33-12-01

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#### MASTER WARNING AND CAUTION SYSTEM (MWACS) CONTROLLER - MAINTENANCE PRACTICES

#### 1. General

A. This maintenance practice provides removal/installation of the Master Warning and Caution System (MWACS) Controller.

#### 2. Removal/Installation MWACS Controller

A. Remove Controller Figure 201 or Figure 202

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION

# LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

# LOWER EPC, MISCELLANEOUS RIGHT DC BUS

<u>Row Col Number Name</u>

R 25 B1-188 WARNING LIGHT DIMMING

- (2) Loosen hold-down nuts at lower front end of controller.
- (3) Swing hold-down nuts down to clear controller.
- (4) Carefully pull controller straight out of mount.
- (5) If controller is being replaced, carefully package defective unit into container that originally contained the new unit and identify as being defective.
- B. Install Controller Figure 201 or Figure 202

# WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>				
Z	41	B1-22	MASTER WARNING				
Z	42	B1-227	MASTER CAUTION				

# LOWER EPC, LIGHTS - R DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	34	B1-848	DIGITAL DISPLAY WARNING LIGHT & TEST
Ν	35	B1-574	SPARE ANN LIGHTS TEST

# LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row Col Number Name

# R 25 B1-188 WARNING LIGHT DIMMING

(2) Visually check controller connectors for damage and foreign objects.

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- (3) Place controller on mount and carefully slide to the rear of the mount.
- (4) Raise hold-down nuts, mate with controller hold-down lugs, and tighten securely.
- (5) Remove the safety tags and close these circuit breakers:

# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	41	B1-22	MASTER WARNING
Z	42	B1-227	MASTER CAUTION
		LIGHTS - F	

# RowColNumberNameN34B1-848DIGITAL DISPLAY WARNING LIGHT & TEST

N 35 B1-574 SPARE ANN LIGHTS TEST

# LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row Col Number Name

R 25 B1-188 WARNING LIGHT DIMMING

(6) Perform system test (MASTER WARNING AND CAUTION SYSTEM, SUBJECT 33-12-00, Page 201).

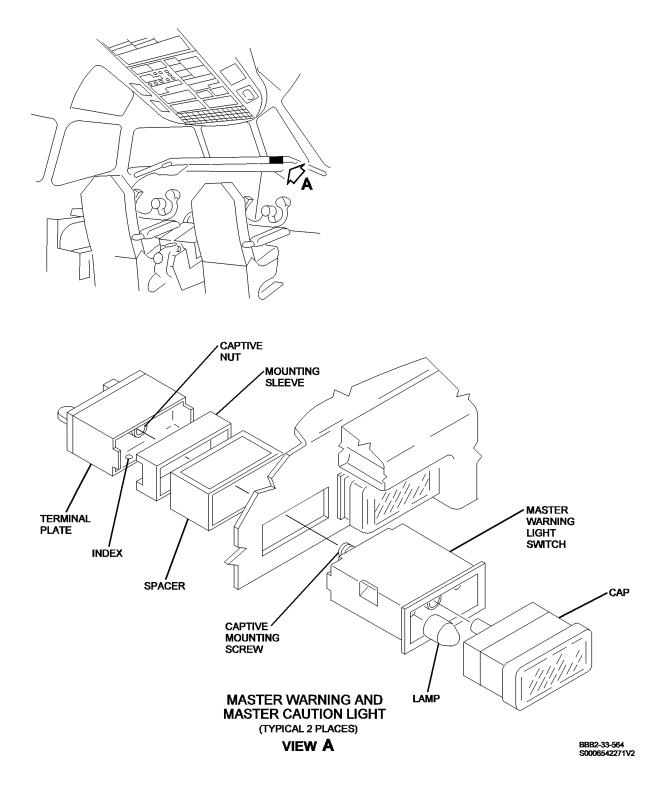
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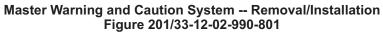
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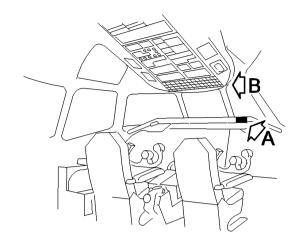
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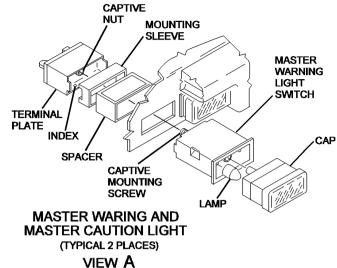
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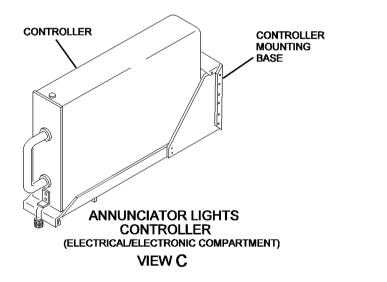
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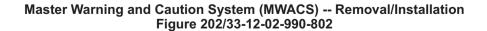
	AC CROSSTIE LOCKOUT	LENG ANTHOLE ON	R ENG ANTHCE ON	I FUFI HFAT ON	REUELHEAT ON	YAW DAMP OFF	CAWS FALL	RUDDER TRAVEL UNRESTRICTED	AUTO SPOLLER DO NOT USE		SPOILER/FLAP EXTENDED	RICE FOD ALERT	AFT CARGO DOOR
		WING ANTI-ICE ON	TAIL DE-ICE ON	ENG SYNC ON	ART INOP		AUTO BRAKE FNL	TRANSPONDER INOP	WINDSHEAR INOP	PARKING BRAKES ON	RUDDER CONTROL MANUEL	TAILCONE	NID CARGO DOOR
APU GEN OFF	DC TRANSFER BUS OFF	LICE FOD ALERT	PITOT/STALL HEATER OFF	L START VALVE OPEN	R START VALVE OPEN	GABIN OXYGEN ON	ALITO SLAT FAIL	STALL INDICATION FAILURE	LICE FOD SYS INOP	L REVERSER ACCUMULATOR LOW	RREVERSER ACCUMULATOR LOW	AFT STAIRWAY DOOR	FWD CARGO DOOR
LAC BUS OFF	R AC BUS OFF	LICE PROTECT TEMP HIGH	R ICE PROTECT TEMP HIGH	L OIL STRAINER GLOGGING	R OIL STRAINER CLOGGING	GPWIS FAIL	SPOILER DEPLOYED	NACH TRIN INOP	APU OIL TEMP HIGH	L HYD TEMP HI	R HYD TEMP HI	AFT CABIN DOOR	ELECT CONP DOOR
L GEN OFF	R GEN OFF	AIRFOLICE PROT PRESS ABNORMAL	ICE PROTECT SUPPLY PRESS HI	LOIL PRESS LOW	R OIL PRESS LOW		TAL COMPT TEMP HIGH	FIRE DETECTOR	APU OIL PRESS LOW	L HYD PRESS LOW	R HYD PRESS LOW	AFT GALLEY DOOR	ACCESS COMP DOOR
L CSD OIL PRESS LOW	R CSD OIL PRESS LOW	LICE PROTECT TEMP LOW	R ICE PROTECT TEMP LOW	L INLET FUEL PRESS LOW	R INLET FUEL PRESS LOW	CABIN ALT		L AIR COND SUPPLY TEMP HI	R AIR COND SUPPLY TEMP HI	l quitbid Anti-Sikid	r Outed Anti-Skid	FWID STAIRMAY DOOR	RICE FOD SYS
EMER LIGHT NOT ARNED	DC BUS OFF	LENG VALVE	R ENG VALVE	L FUEL FILTER PRESS DROP	R FUEL FILTER PRESS DROP	AC ENER BUS OFF	DC ENER BUS OFF	RADIO FAN OFF	FLT RECORDER OFF	LINED ANTI-SKID	R INBD ANTI-SKID	FWD CABIN DOOR	FWD GALLEY DOOR





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#### **MASTER WARNING AND MASTER CAUTION LIGHT - MAINTENANCE PRACTICES**

#### 1. General

A. This maintenance practice provides removal/installation procedures to verify correct operation of the Master Warning and Master Caution light. The check is presented in sequence and identified by component functions.

#### 2. Removal/Installation Master Warning and Caution System Light Switch

A. Remove Light Switch Unit (Figure 201)

NOTE: Removal of the Master Warning and Master Caution light switch units are identical.

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

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

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 41 B1-22 MASTER WARNING

- Z 42 B1-227 MASTER CAUTION
- (2) Remove cap by simultaneously squeezing cap and pulling cap away from light switch.
- (3) Remove lamps.
- (4) Gain access to electrical wires at rear of light switch.
- (5) Disconnect electrical wires from light switch.
- (6) Completely loosen captive mounting screw (located in body of light switch), while holding spacer, mounting sleeve, and terminal plate.
- (7) Slide spacer, mounting sleeve, and terminal plate off of body of the light switch.
- (8) Remove light switch from glareshield.
- B. Install Light Switch Unit Figure 201

NOTE: Installation of the Master Warning and Master Caution light switch units are identical.

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

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

# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>				
Z	41	B1-22	MASTER WARNING				
Z	42	B1-227	MASTER CAUTION				

- (2) Slide light switch into glareshield.
- (3) Slide spacer, mounting sleeve, and terminal plate onto body of light switch, making certain that index protrusion in terminal plate assembly aligns with slot in light switch.
- (4) Tighten captive screw located in body of light switch.
- (5) Connect electrical wires to light switch.
- (6) Insert lamps into light switch.
- (7) Press cap onto light switch.

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

Row	<u>Row Col Number</u>		<u>Name</u>				
Z	41	B1-22	MASTER WARNING				
Z	42	B1-227	MASTER CAUTION				

(9) Perform system test (MASTER WARNING AND CAUTION SYSTEM, SUBJECT 33-12-00, Page 201).

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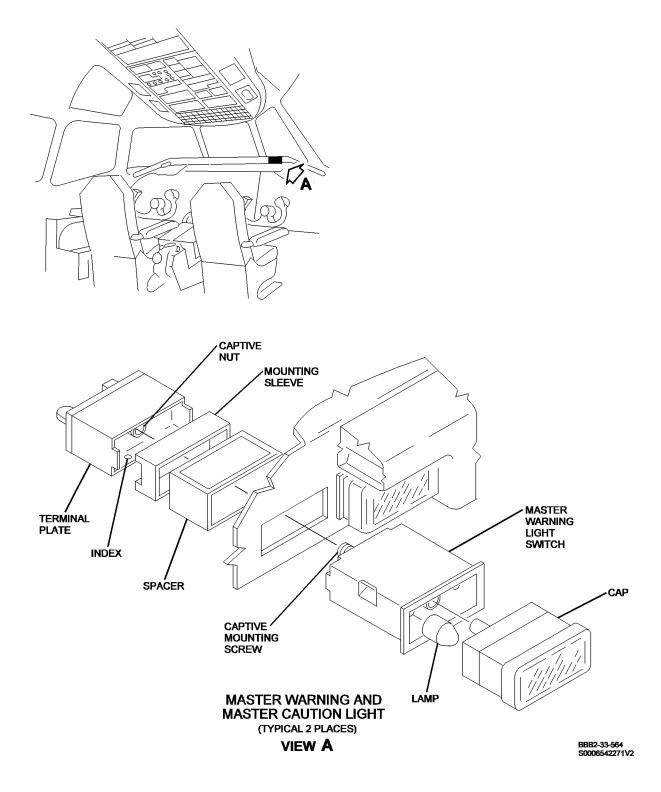
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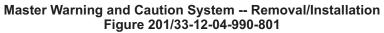
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#### PASSENGER COMPARTMENTS - DESCRIPTION AND OPERATION

#### 1. General

A. The passenger compartment lighting includes all cabin lights, utility and work lights, lighted signs, cabin panels, and the passenger call system. Combinations of direct and indirect, incandescent and fluorescent, and electroluminescent lights are used. Most of the light switches are located on the cabin attendant's control panels or adjacent to the light fixtures.

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# **CABIN LIGHTS - DESCRIPTION AND OPERATION**

#### 1. Description

- A. The cabin lights consist of upper and lower sidewall lights, aisle lights, and door and entrance lights.
- B. The sidewall lights provide indirect lighting from fluorescent light fixtures installed within recesses in the upper and lower portions of the overhead stowage racks. Sidewall light fixtures consist of a mounting with pushbutton type lamp holders, a reflector, a mounting bracket for the light ballast, and a ballast. Access to the upper sidewall lights is above the overhead stowage compartment. Access to the lower sidewall lights is by lowering the applicable passenger service module. Two recessed fasteners secure each module to the airplane structure. Separate control switches for upper and lower sidewall lighting control are provided at the forward attendant control panel.
- C. The aisle lights are installed in the forward and aft ceiling area and in the galley ceiling. Separate control switches for the forward and aft lights are located on the forward and aft attendant's panels.
- D. The forward door and entrance lights are installed in the cabin ceiling above each entrance door. The control switch for the passenger forward entrance door light is located on the forward attendant's panel. The control switch for the forward service entry light is located on the fixture. Each door and entrance light fixture contains emergency light installations.
- E. The aft entrance lights are installed in the aft cabin ceiling above the passenger aft entrance door, and in the aft entrance stair area. The aft entrance lights consist of the passenger aft entrance door light, aft entrance stair fluorescent lights, and aft entrance stair floodlights. These lights can be controlled either by a switch on the aft attendant's panel or by a switch on the aft entrance stair control panel (external).

#### WJE 405-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891

NOTE: References to the aft service door light are not applicable on MD-87 series aircraft.

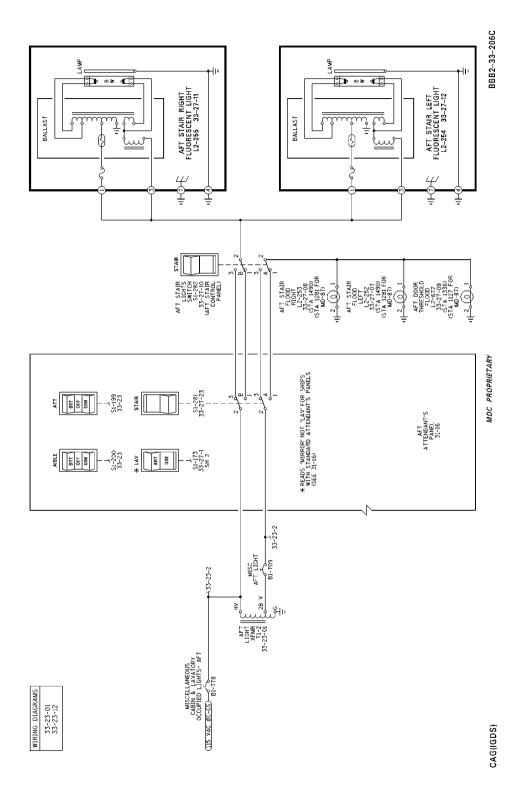
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# Aft Lavatory and Stair Lights -- Schematic Figure 1/33-21-00-990-806

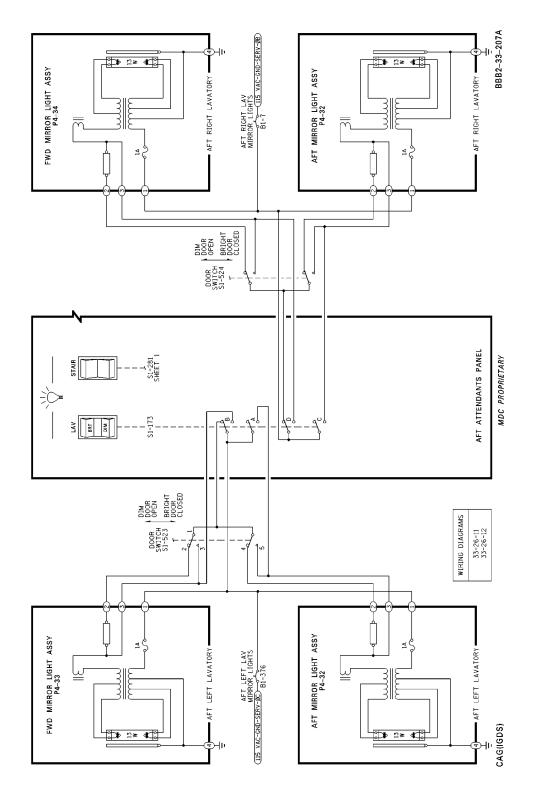
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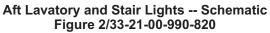
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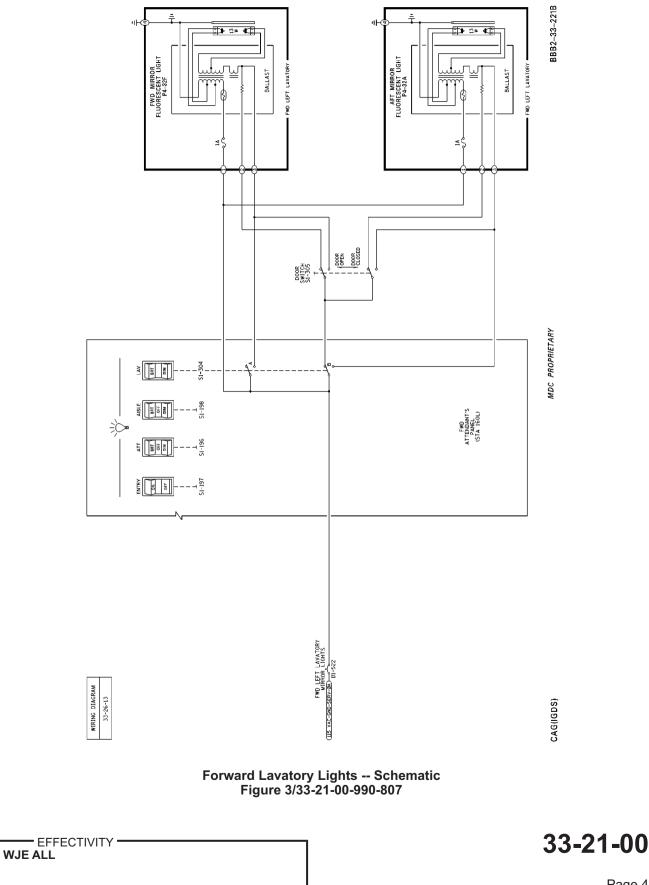
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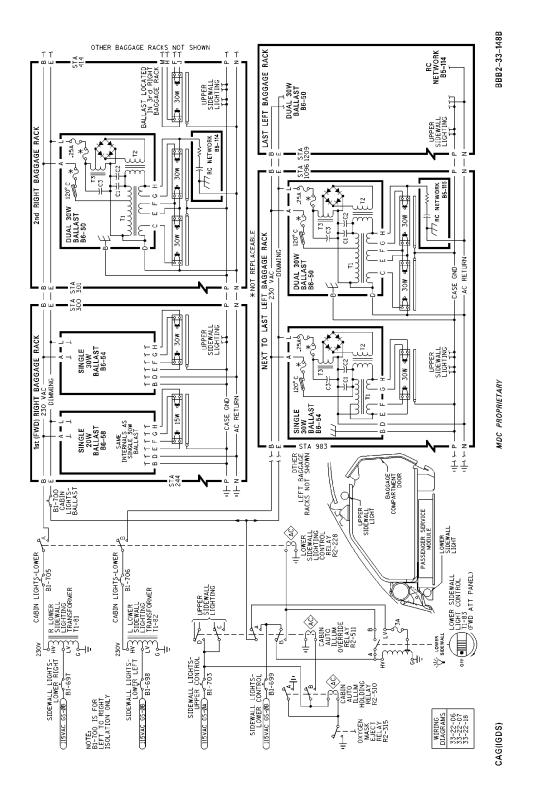
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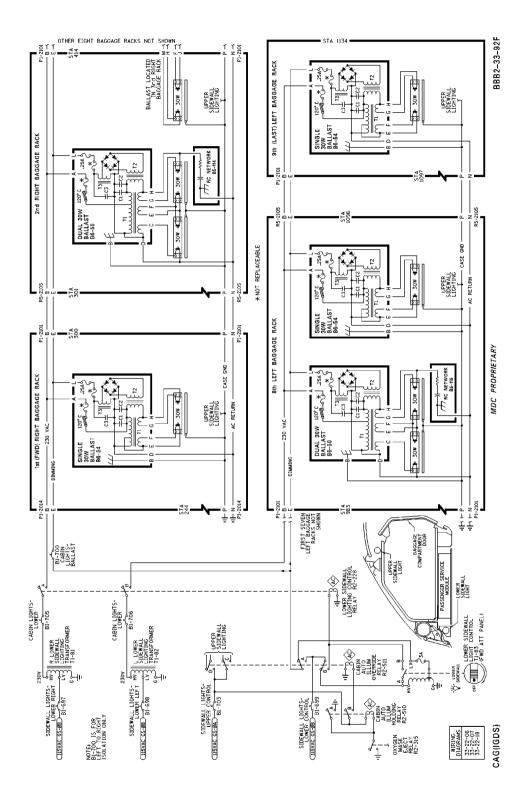
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 1 of 8)

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Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 2 of 8)

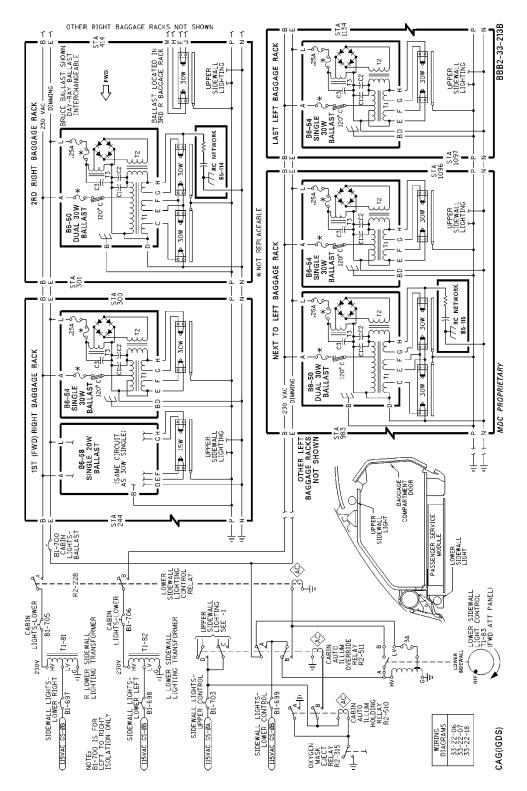
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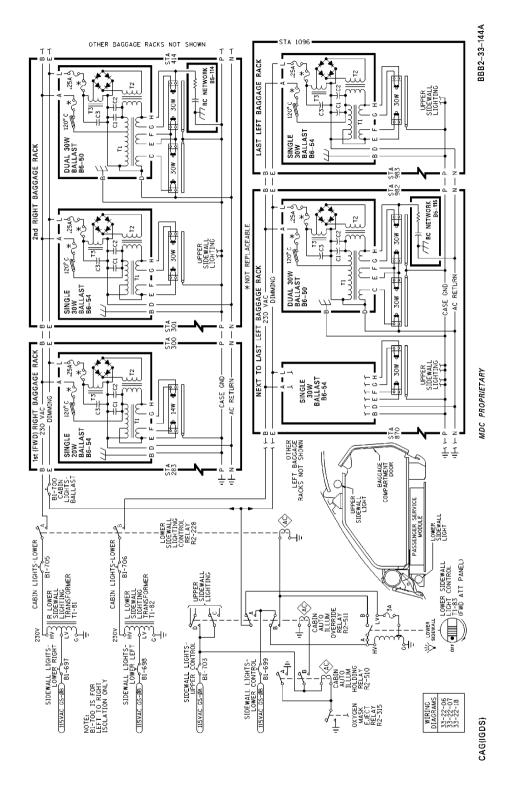
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 3 of 8)

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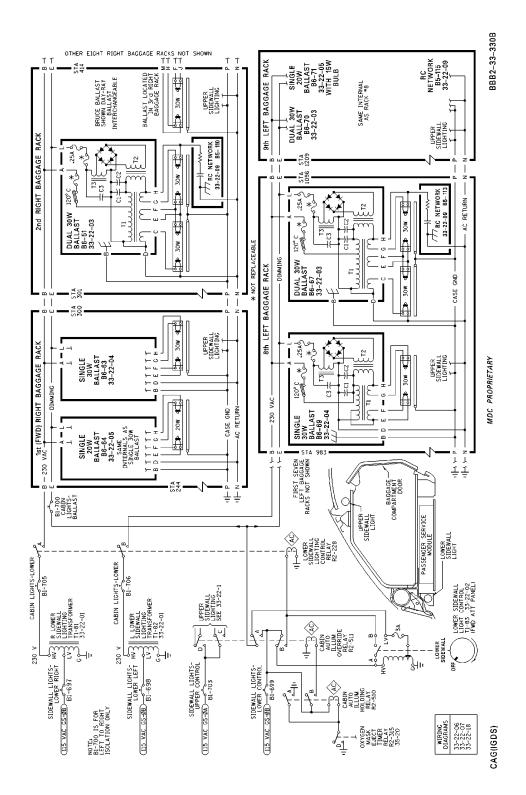
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 4 of 8)

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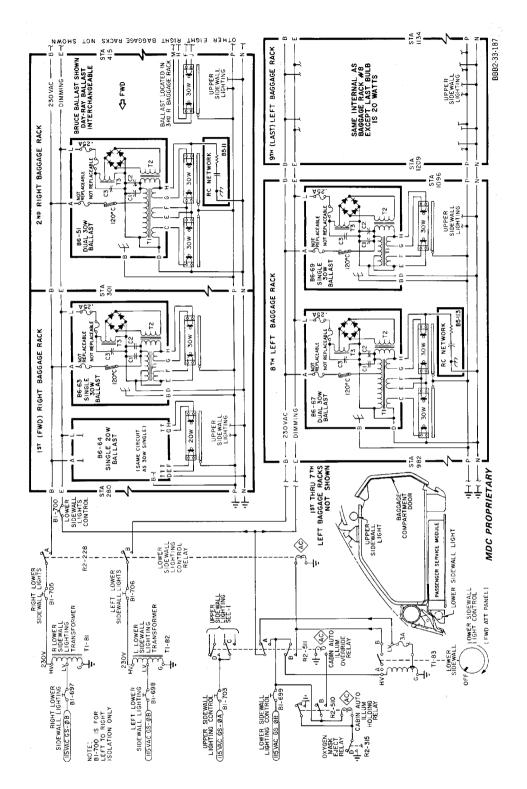
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 5 of 8)

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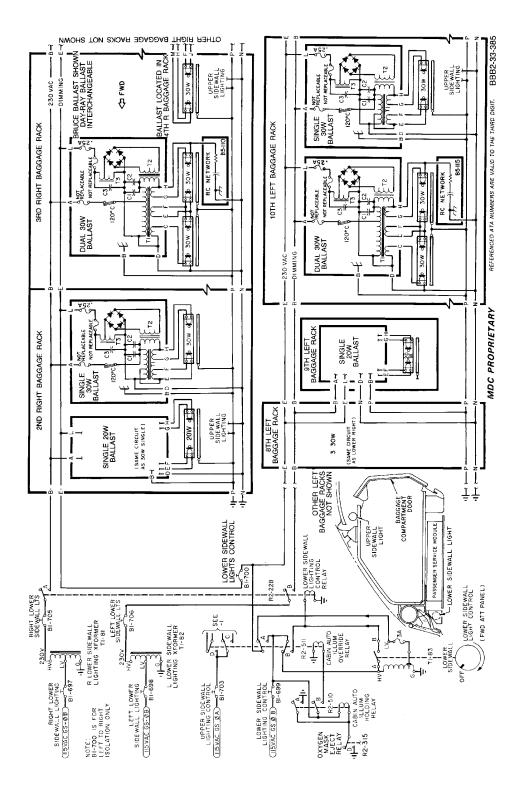
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 6 of 8)

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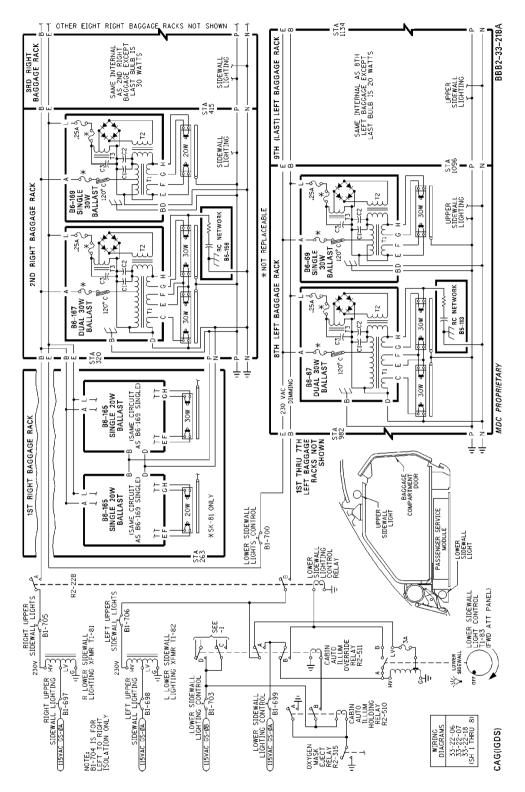
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 7 of 8)

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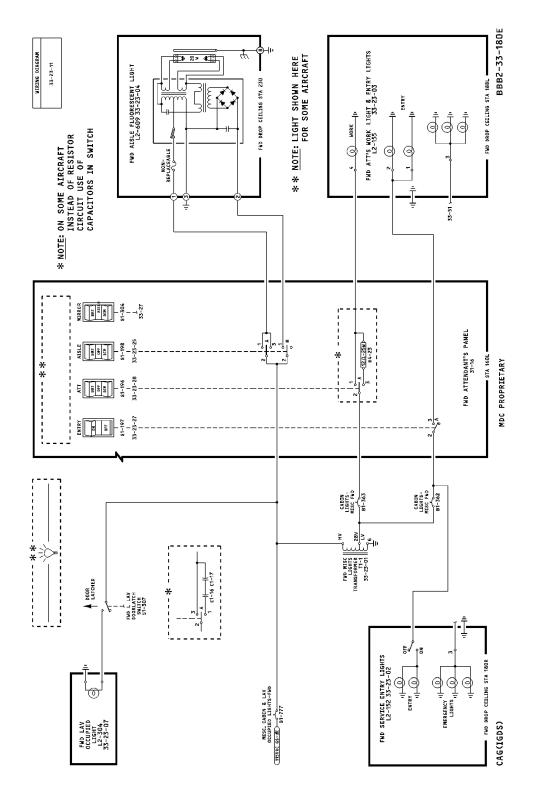
Cabin Lower Sidewall Lighting - Schematic Figure 4/33-21-00-990-808 (Sheet 8 of 8)

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Forward Aisle and Attendant's Lights - Schematic Figure 5/33-21-00-990-809 (Sheet 1 of 3)

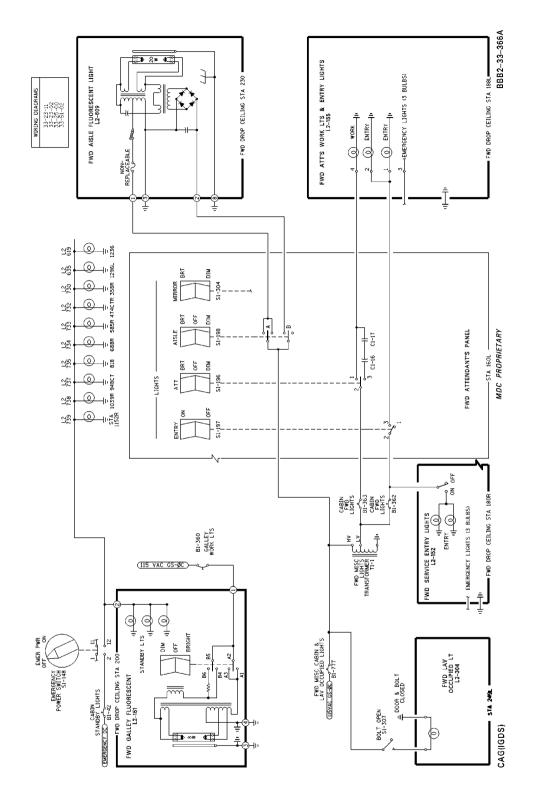
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Forward Aisle and Attendant's Lights - Schematic Figure 5/33-21-00-990-809 (Sheet 2 of 3)

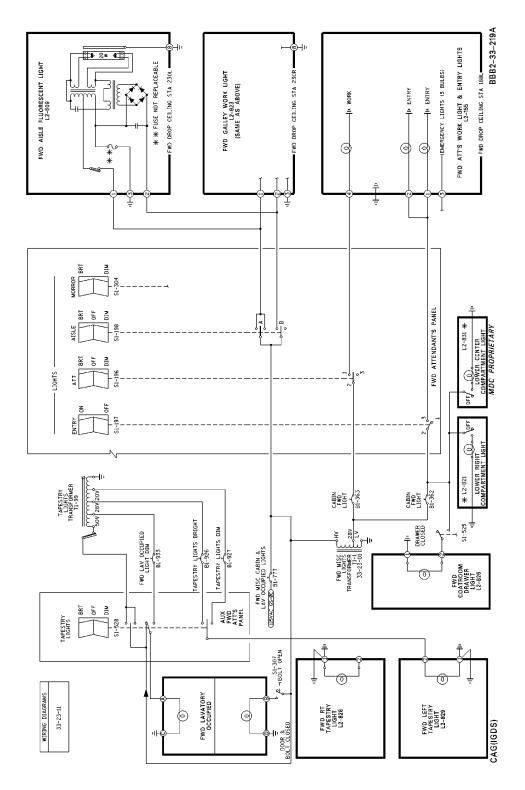
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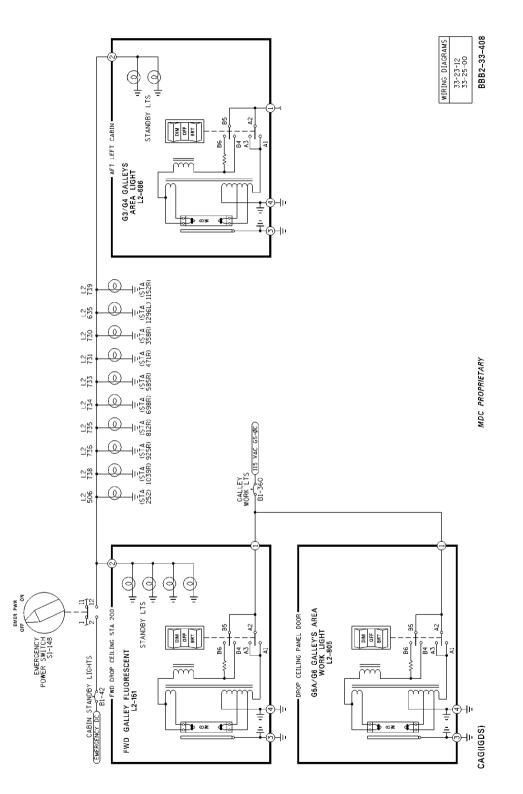
Forward Aisle and Attendant's Lights - Schematic Figure 5/33-21-00-990-809 (Sheet 3 of 3)

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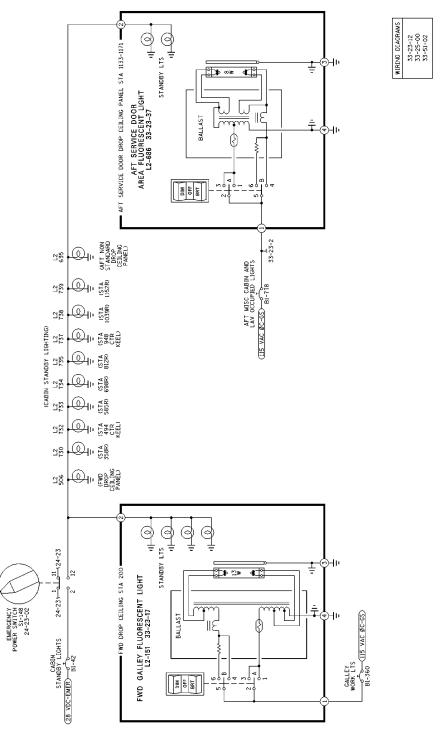
Galley Lighting Figure 6/33-21-00-990-810 (Sheet 1 of 2)

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Galley Lighting Figure 6/33-21-00-990-810 (Sheet 2 of 2)

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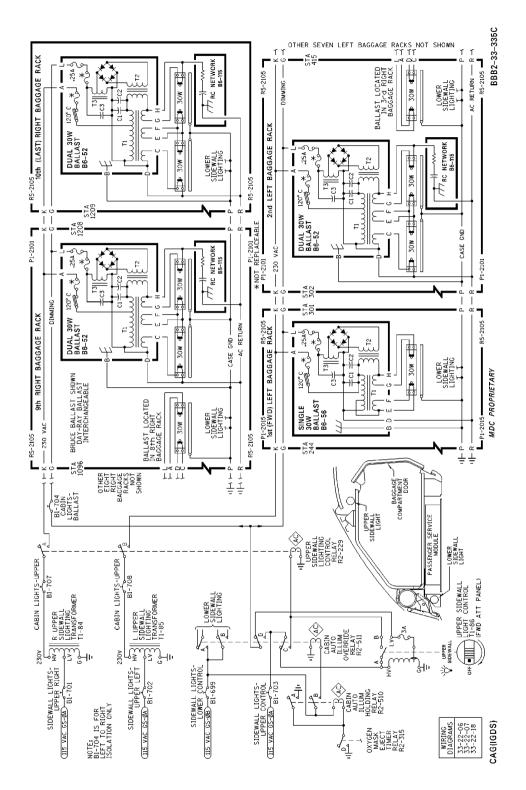
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Cabin Upper Sidewall Lighting - Schematic Figure 7/33-21-00-990-811 (Sheet 1 of 5)

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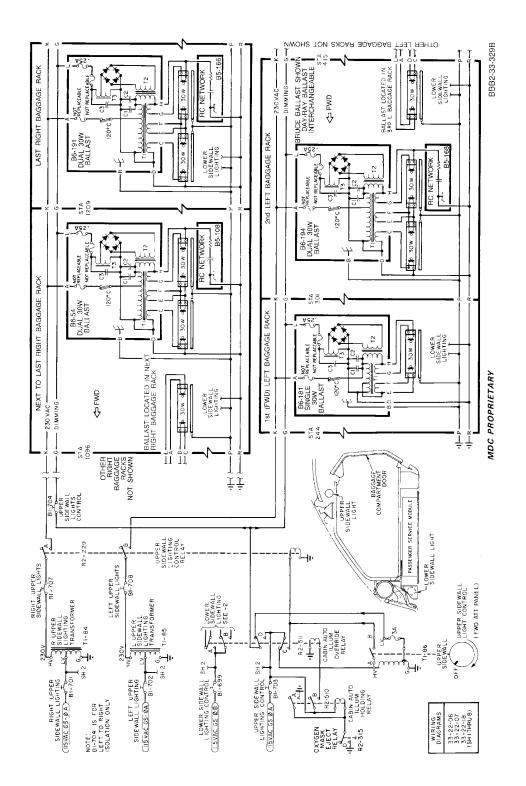
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Cabin Upper Sidewall Lighting - Schematic Figure 7/33-21-00-990-811 (Sheet 2 of 5)

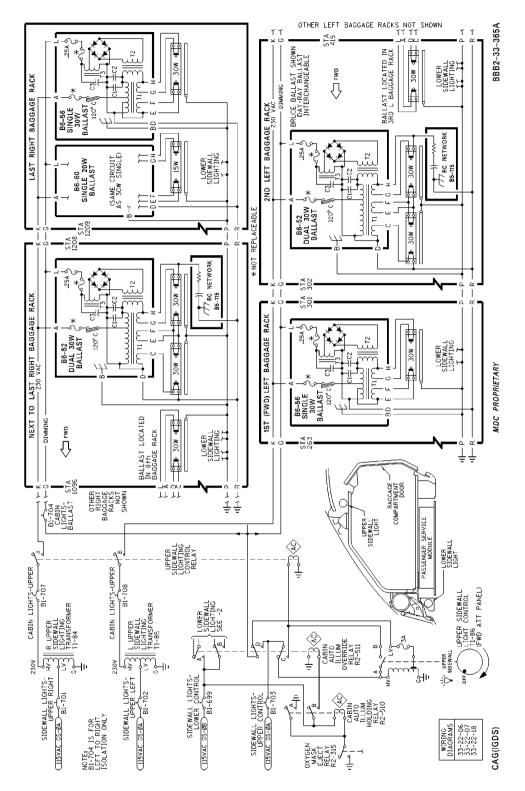
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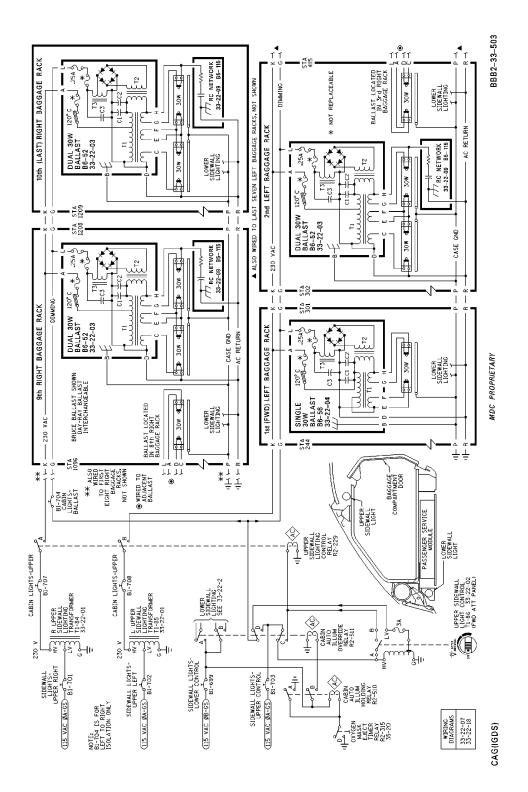
Cabin Upper Sidewall Lighting - Schematic Figure 7/33-21-00-990-811 (Sheet 3 of 5)

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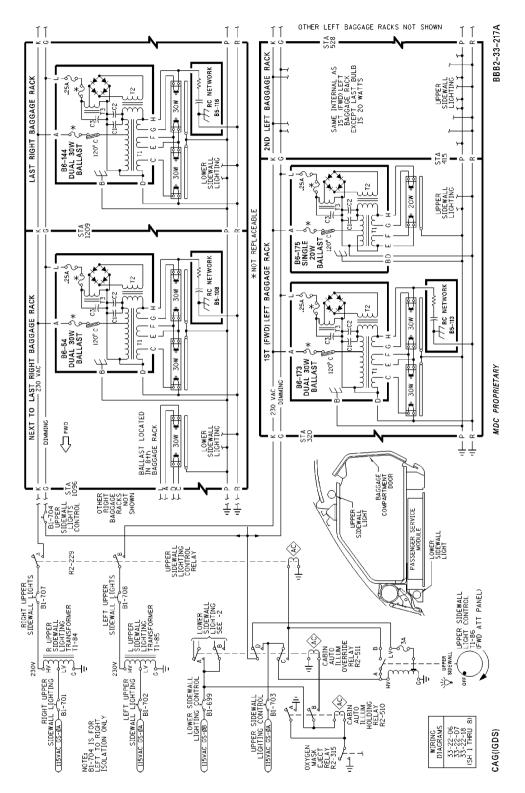
Cabin Upper Sidewall Lighting - Schematic Figure 7/33-21-00-990-811 (Sheet 4 of 5)

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Cabin Upper Sidewall Lighting - Schematic Figure 7/33-21-00-990-811 (Sheet 5 of 5)

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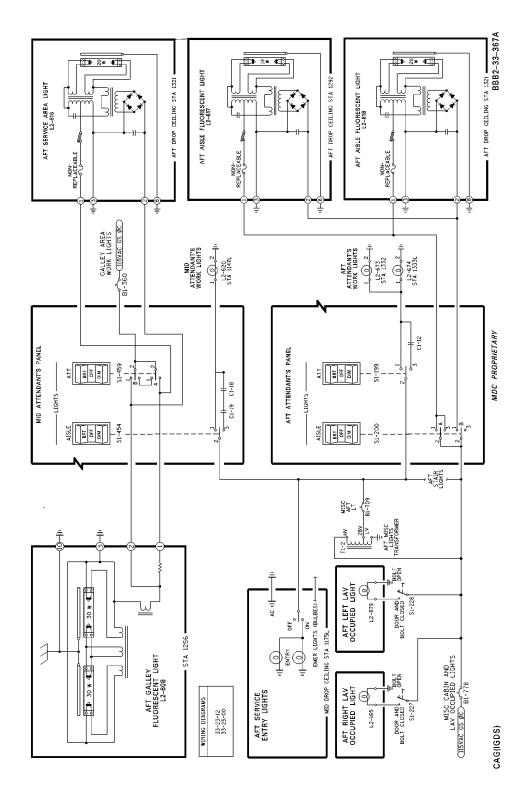
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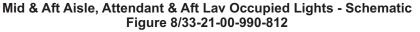
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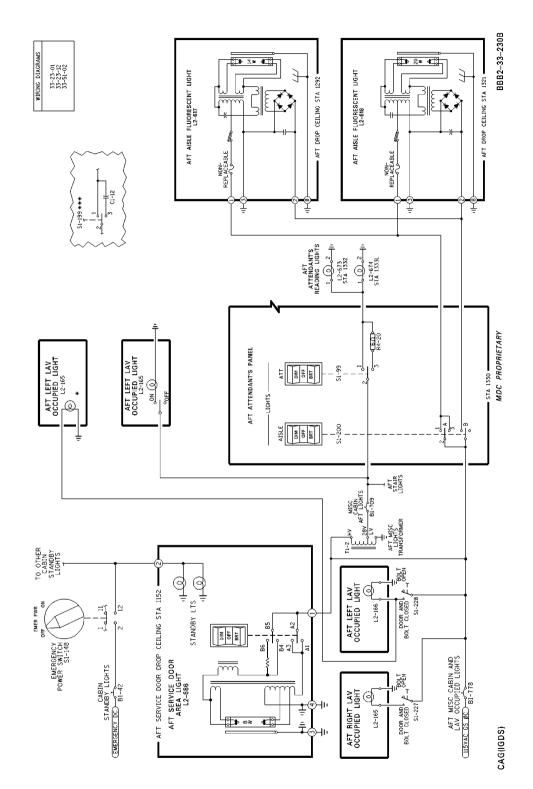


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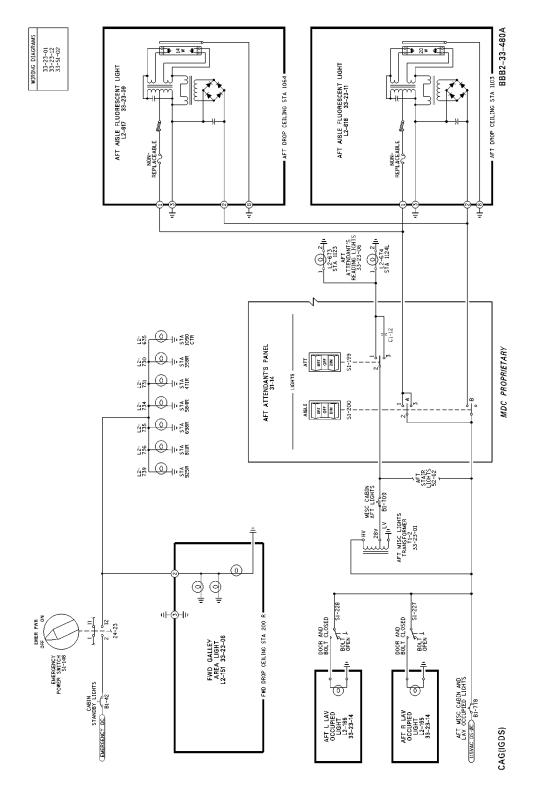
Mid & Aft Aisle, Attendant & Standby Lights - Schematic Figure 9/33-21-00-990-821

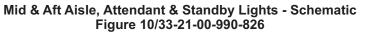
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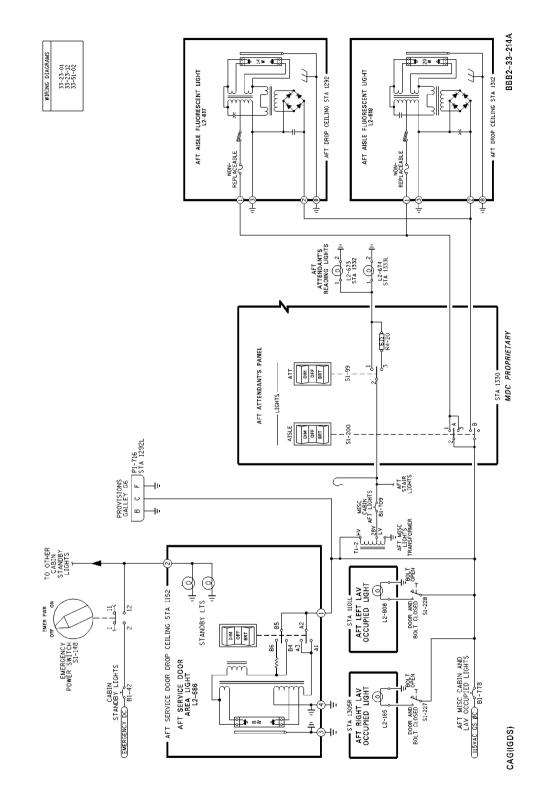


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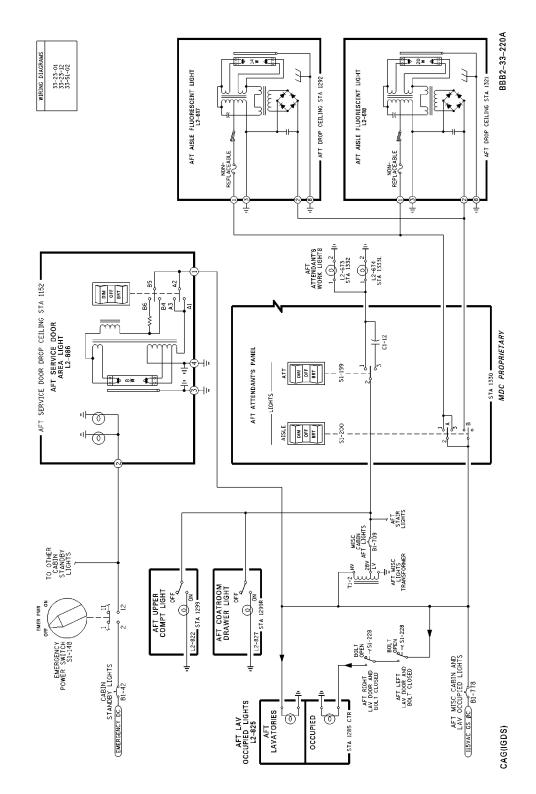


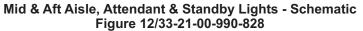
Mid & Aft Aisle, Attendant & Standby Lights - Schematic Figure 11/33-21-00-990-827



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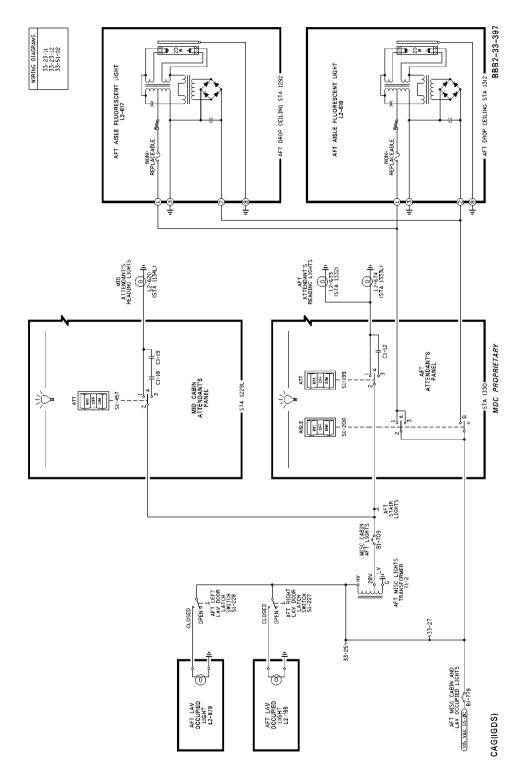
WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891

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Mid & Aft Aisle, Attendant & Standby Lights - Schematic Figure 13/33-21-00-990-832

WJE 886, 887

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#### **CABIN SIDEWALL LIGHTS - MAINTENANCE PRACTICES**

### 1. General

- A. The following procedures provide instructions for lamping the upper and lower sidewall light fixtures with fluorescent lamps.
- B. The use of properly identified recommended lamps is essential for satisfactory operation and to prevent damage to circuit components.
- C. Replace fluorescent lamps when they start to exhibit signs of failure, such as reduced light output, flickering, rectification, and lamp end blackening.

#### 2. Removal/Installation Cabin Sidewall Fluorescent Lamps

- A. Remove Lamp
- WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893

(Lever Type Lamp Holder)

Row

#### WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 884, 891

(Pushbutton Type Lamp Holder)

#### WJE ALL

- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Open and tag following circuit breakers applicable to light from which lamp is being removed:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-698	SIDEWALL LIGHTS - LOWER LEFT
B1-697	SIDEWALL LIGHTS - LOWER RIGHT
B1-703	SIDEWALL LIGHTS - UPPER CONTROL
B1-702	SIDEWALL LIGHTS - UPPER LEFT
B1-701	SIDEWALL LIGHTS - UPPER RIGHT
	B1-699 B1-698 B1-697 B1-703 B1-702

(2) Gain access to upper sidewall lights above overhead stow-age compartment.

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893

(3) On lower sidewall lights, release captive screws of lower sidewall light panel; pull outboard on panel to free spring clip from bracket.

#### WJE ALL

(4) At end of lamp, depress lever on lamp holder inward.

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893

<u>NOTE</u>: Each lever type lamp holder has a movable center tab that retains the lamp base bipins against spring contacts. When the lever is depressed inward, ejector moves lamp out of locked position.

#### WJE ALL

(5) At one end of lamp, press pushbutton on lamp holder inward.

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#### WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 884, 891

<u>NOTE</u>: Each pushbutton type lamp holder has a movable center tab that retains the lamp base bipins against spring contacts. When the pushbutton is depressed inward, the bipins are removed from the lamp holder.

#### WJE ALL

**CAUTION:** DO NOT INDEX OR ROTATE LAMP. INDEXING OR ROTATING LAMP MAY CAUSE DAMAGE TO LAMP BIPINS, LAMP HOLDERS, OR BALLAST.

- (6) Without indexing or rotating lamp, lift lamp base bipins straight out of detents.
- (7) Remove lamp.
- B. Install Lamp

# WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893

(Lever Type Lamp Holder)

WJE 405, 409, 410, 416, 420, 422, 424-427, 429, 861, 862, 868, 873, 874, 880, 884, 891

(Pushbutton Type Lamp Holder)

#### WJE ALL

- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Make sure that these circuit breakers are open and have safety tags:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-698	SIDEWALL LIGHTS - LOWER LEFT
B1-697	SIDEWALL LIGHTS - LOWER RIGHT
B1-703	SIDEWALL LIGHTS - UPPER CONTROL
B1-702	SIDEWALL LIGHTS - UPPER LEFT
B1-701	SIDEWALL LIGHTS - UPPER RIGHT

- **CAUTION:** DO NOT INDEX OR ROTATE LAMP. INDEXING OR ROTATING LAMP MAY CAUSE DAMAGE TO LAMP BIPINS, LAMP HOLDERS, OR BALLAST.
- **CAUTION:** VERIFY LAMP IDENTIFICATION WHEN RELAMPING. USE ONLY RECOMMENDED LAMPS TO PREVENT DAMAGE TO LAMP HOLDERS AND LIGHT CIRCUIT COMPONENTS.
- (2) Without indexing or rotating lamp, press lamp base bi-pins, at each end of lamp, into lamp holders until bi-pins are secure in contact detents. Make sure fluorescent lamp bi-pins are properly installed in the lamp holder contacts and are in the locked position when installing lamps.

# WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893

(3) Pull lever forward to locked position.

NOTE: Lamp will not be secured if lever is not in locked position.

WJE ALL

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#### WJE ALL

- (4) On lower sidewall lights, push lower sidewall light panel inboard until retained by spring clips and then secure with captive screws.
- (5) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

_	<u>Col</u>	<u>Number</u>	Name
		B1-699	SIDEWALL LIGHTS - LOWER CONTROL
		B1-698	SIDEWALL LIGHTS - LOWER LEFT
		B1-697	SIDEWALL LIGHTS - LOWER RIGHT
		B1-703	SIDEWALL LIGHTS - UPPER CONTROL
		B1-702	SIDEWALL LIGHTS - UPPER LEFT
		B1-701	SIDEWALL LIGHTS - UPPER RIGHT

- (6) Rotate applicable sidewall light control on forward attend-ant's panel clockwise, lights should come on.
- (7) Rotate applicable sidewall light control to maximum clock-wise position, lights should brighten.
- (8) Rotate applicable sidewall light control to OFF position, lights should go off
- C. Install Lamp Holders

Row

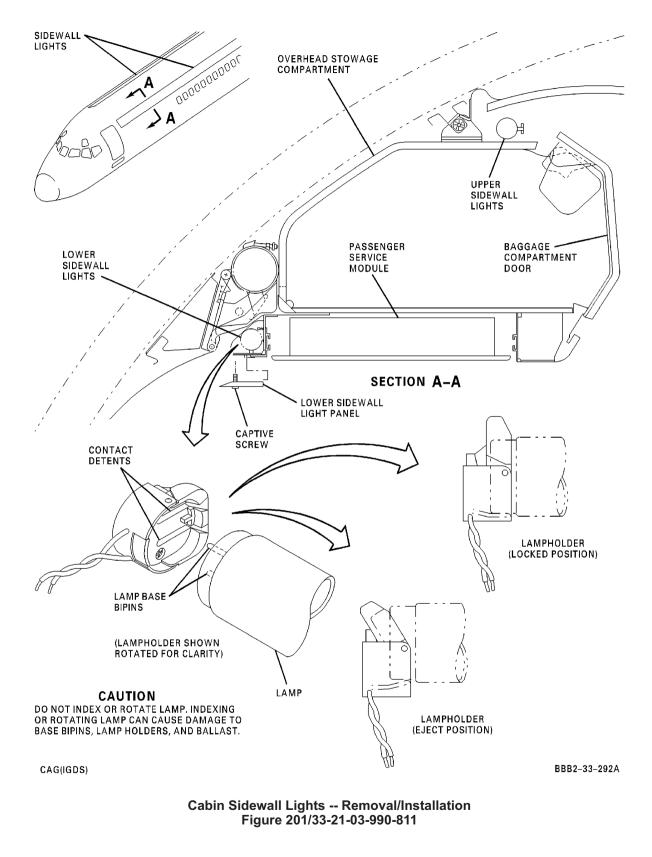
- **CAUTION:** WHEN INSTALLING TWO LAMPHOLDERS BACK TO BACK, THREADED INSERTS MUST BE REMOVED FROM ONE OF TWO LAMPHOLDERS. THIS ACTION ENSURES THAT MOUNTING SCREWS WILL COUNTERSINK INTO LAMPHOLDER BASE AND PREVENT INTERFERENCE WITH FLUORESCENT LAMPS.
- (1) Remove threaded inserts from one of two lampholders as follows:
  - (a) Install (2) 1 inch 4-40 screws completely into inserts from back side of one lampholder.
  - (b) Place lampholder on flat surface, and tap head of screw with soft mallet; push inserts out of lampholder. Remove inserts from screws and remove screws from lampholder.
  - (c) Install lampholders back to back on bracket; make certain that screws do not extend beyond inserts ).

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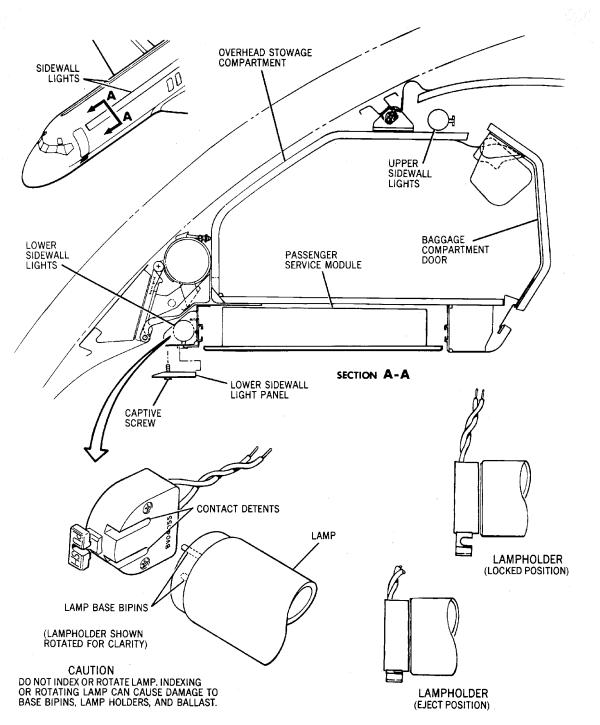


EFFECTIVITY WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 881, 883, 886, 887, 892, 893 33-21-03

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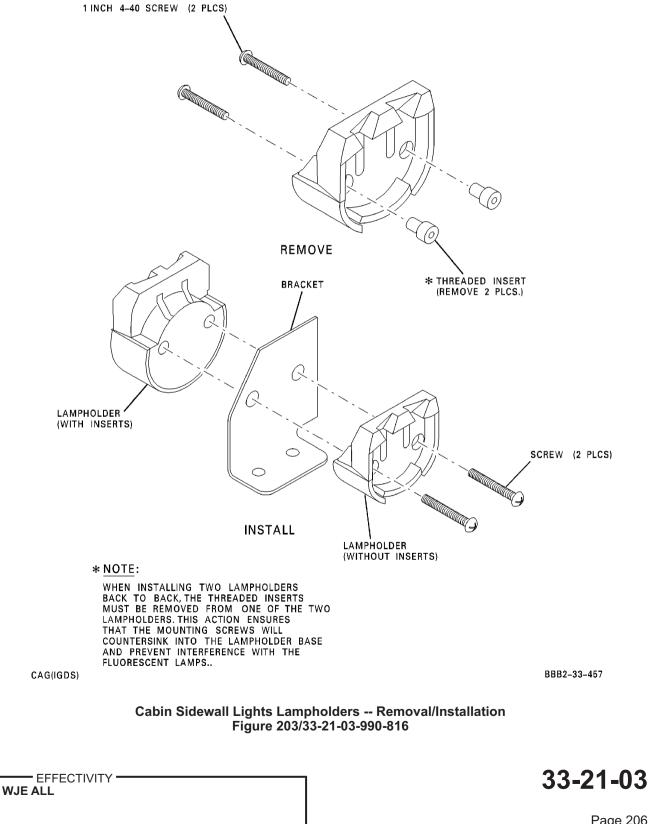
#### Cabin Sidewall Lights -- Removal/Installation Figure 202/33-21-03-990-813

# 33-21-03

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#### 3. Removal/Installation Cabin Sidewall Lighting Ballast

A. Remove Ballast

Row

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

(1) Open and tag following circuit breakers applicable to light from which ballast is being removed:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-699	SIDEWALL LIGHTS - LOWER CONTROL
	B1-698	SIDEWALL LIGHTS - LOWER LEFT
	B1-697	SIDEWALL LIGHTS - LOWER RIGHT
	B1-703	SIDEWALL LIGHTS - UPPER CONTROL
	B1-702	SIDEWALL LIGHTS - UPPER LEFT
	B1-701	SIDEWALL LIGHTS - UPPER RIGHT

- (2) Gain access to ballast through overhead stowage compartment door. Release captive screws of sidewall ballast panel and swing down gently.
- (3) Disconnect electrical connector at ballast.
- (4) Remove mounting screws and remove ballast.
- B. Install Ballast

Row

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

(1) Make certain following circuit breakers applicable to light from which ballast is being removed, are open and tagged:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-698	SIDEWALL LIGHTS - LOWER LEFT
B1-697	SIDEWALL LIGHTS - LOWER RIGHT
B1-703	SIDEWALL LIGHTS - UPPER CONTROL
B1-702	SIDEWALL LIGHTS - UPPER LEFT
B1-701	SIDEWALL LIGHTS - UPPER RIGHT

(2) Install ballast as follows:

Col

- <u>NOTE</u>: The universal ballast P/N 03980 is able to drive either a single or dual lamp configuration. If the aircraft has not had the proper wiring harness installed, it will be necessary to install the 24 inch wire harness that is supplied with the ballast.
- (a) For installation of Universal ballast, Bruce Industries P/N 03980, install mounting brackets and install ballast.

NOTE: Universal ballast P/N 03980 is supplied with 2 mounting brackets.

- (b) Connect 24 inch wire harness electrical connector to aircraft wiring and to ballast.
  - NOTE: The Universal ballast P/N 03980 is supplied with a 24 inch wire harness which must be configurated to a single or dual lamp system before installation. (Figure 204 or Figure 205)
- (c) For installation of Day-Ray ballast P/N 70-94, install ballast and cover.

WJE ALL

33-21-03

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WJE 878; WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-877, 879-881, 883, 884, 886, 887, 891-893 POST MD80-33A107

<u>NOTE</u>: Ballast and cover must be installed on aircraft as an assembly (Figure 204 or Figure 205.

# WJE 878; WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-877, 879-881, 883, 884, 886, 887, 891-893 POST MD80-33A110

NOTE: All Day-Ray ballasts and covers have been removed and replaced with Bruce Industries ballast P/N 03980. Covers are not installed on the Bruce Industries ballast.

#### WJE ALL

- (d) Connect electrical connector to ballast.
- (3) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-698	SIDEWALL LIGHTS - LOWER LEFT
B1-697	SIDEWALL LIGHTS - LOWER RIGHT
B1-703	SIDEWALL LIGHTS - UPPER CONTROL
B1-702	SIDEWALL LIGHTS - UPPER LEFT
B1-701	SIDEWALL LIGHTS - UPPER RIGHT

(4) Perform functional test of sidewall light system to ensure all lamps are operative.

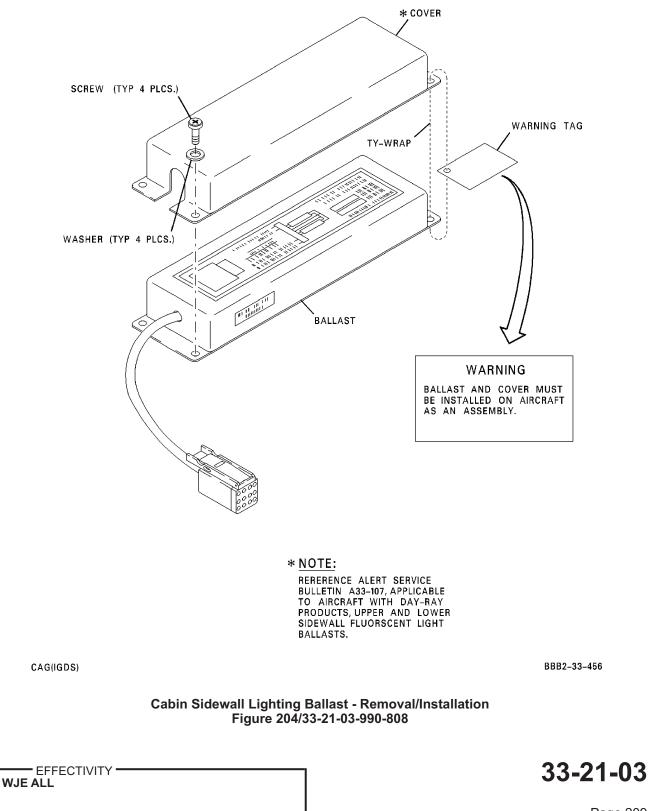
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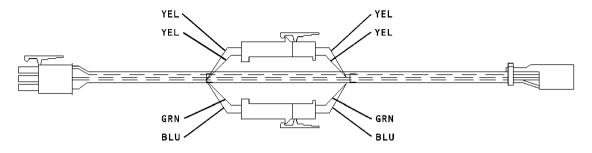
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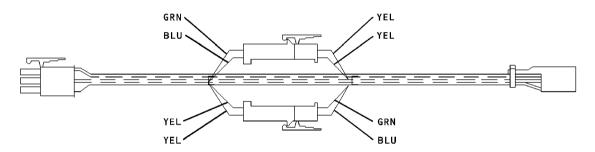
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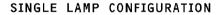


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DUAL LAMP CONFIGURATION





#### NOTE:

IF THE AIRCRAFT HAS A BURNDY TYPE CONNECTOR INSTALLED FOR THE BALLAST, THE WIRE HARNESS MUST BE CONFIGURED TO EITHER A SINGLE OR DUAL LAMP INSTALLATION.

SINGLE LAMP INSTALLATION	CONNECT:
YEL/YEL TO GRN/BLU	(J3 T0 P2)
GRN/BLU TO YEL/YEL	(J2 TO P3)
DUAL LAMP INSTALLATION YEL/YEL TO YEL/YEL (	CONNECT: J3 T0 P3)
GRN/BLU TO GRN/BLU (	J2 TO P2)

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#### Cabin Sidewall Lighting Ballast - Removal/Installation Figure 205/33-21-03-990-809

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33-21-03

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#### AISLE LIGHTS - REMOVAL/INSTALLATION

#### 1. General

A. The following procedures are given for removing and installing the forward, mid, and aft aisle lights. Lamp replacement for the aisle lights can be accomplished by removing the louvered grid. When lamp replacement is accomplished, actuate the appropriate aisle lights switch to verify proper operation.

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

NOTE: References to the mid aisle light are not applicable on MD-87 series aircraft.

#### WJE ALL

#### 2. <u>Removal/Installation Aisle Lights</u>

A. Remove Aisle Light

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

(1) Open and tag following circuit breaker for applicable light:

### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Numb	<u>per Name</u>
--------------	-----------------

B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (2) To gain access to lamps, release fasteners through louvered grid and remove grid.
- (3) Remove lamps by pushing on holders to release lamp.
- (4) Remove adjacent ceiling panel to gain access to light fixture. (CEILING PANELS, SUBJECT 25-28-00)
- (5) Disconnect electrical wiring from terminal strip.
- (6) Remove fixture attaching screws and remove fixture from ceiling panel.
- (7) Remove ballast attaching screws securing ballast to fixture.
- B. Install Aisle Light

Row

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

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

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (2) Position ballast on fixture and secure with attaching screws.
- (3) Position fixture in ceiling panel and secure with attaching screws.
- (4) Connect electrical wiring to terminal strip.

WJE ALL

33-21-04

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- (5) Install ceiling panel. (CEILING PANELS, SUBJECT 25-28-00)
- (6) Install lamps by pressing on holders and inserting lamps in holders.
- (7) Position louvered grid on fixture and secure with fasteners.
- (8) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

- B1-778 AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
- B1-777 FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
- (9) Perform Adjustment/Test to verify proper operation of light. (AISLE LIGHTS ADJUSTMENT/TEST, PAGEBLOCK 33-21-04/501)

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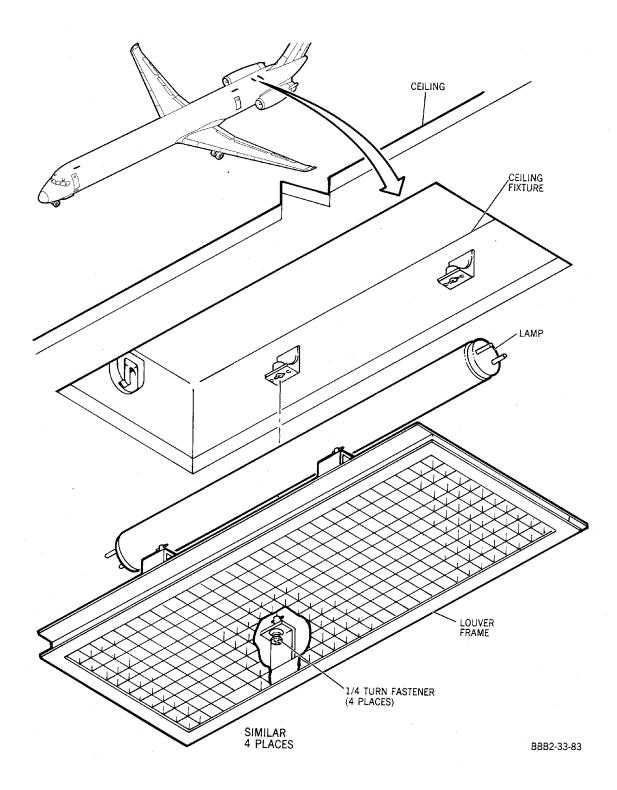
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Aisle Lights -- Removal/Installation Figure 401/33-21-04-990-802

EFFECTIVITY -

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## AISLE LIGHTS - ADJUSTMENT/TEST

## 1. General

A. The following procedures provide a test of the normal and standby lights installed in the aisle lights fixtures.

## 2. Adjustment/Test Aisle Lights

- A. Test Forward Aisle Light
  - (1) Place AISLE light switch, on forward attendant's panel, in DIM position; forward aisle light should come on dim.
  - (2) Place AISLE switch in BRIGHT position; light should become bright.
  - (3) Place AISLE switch to OFF position; light should go off.
- B. Test Aft Aisle Lights
  - (1) Place AISLE light switch, on aft attendant's panel, in DIM position; aft aisle lights should come on dim.
  - (2) Place AISLE switch in BRIGHT position; lights should become bright.
  - (3) Place AISLE switch to OFF position; light should go off.
- C. Test Mid Aisle Light

NOTE: References to the mid aisle light are not applicable on MD-87 series aircraft.

- (1) Place AREA light switch, on mid cabin attendant's panel in DIM position; mid cabin aisle light should come on dim.
- (2) Place AREA light switch in BRIGHT position; light should become bright.
- (3) Place AREA light switch in OFF position; light should go off.

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#### **DOOR AND ENTRANCE LIGHTS - REMOVAL/INSTALLATION**

## 1. General

A. Most of the door and entrance light fixtures contain 28 vac lamps for normal lighting and 2.5 vdc lamps for emergency lighting. The cabin emergency lights switch, on the overhead switch panel, should be in the off position before the emergency lights arm and charge circuit breaker is opened to prevent energizing the emergency lights circuit (EMERGENCY LIGHTS, SUBJECT 33-53-00). Lamp replacement can be accomplished by opening the fixture door or removing the lens. When lamp replacement is accomplished, position appropriate switch to the on position to verify proper operation of light.

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

NOTE: References to the aft service door light are not applicable on MD-87 series aircraft.

#### WJE ALL

#### 2. Removal/Installation Door and Entrance Lights

A. Remove Lights

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

# **CAUTION:** MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.

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

#### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

#### LOWER EPC, DC TRANSFER BUS

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

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

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

Row Col Number Name

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

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE WJE 410

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

#### WJE ALL

- (2) Open fixture door or remove lens to gain access to lamps and attaching screws.
- (3) Remove lamps and attaching screws.
- (4) Disconnect electrical wiring.
- (5) Remove fixture.
- B. Install Lights

WJE ALL

## 33-21-05

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**WARNING:** TAG AND SAFETY CIRCUIT BREAKERS.

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

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY

	OCCUPIED LIGHTS
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

## LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

### **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

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

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE WJE 410

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

#### WJE ALL

- (2) Connect electrical wiring.
- (3) Install fixture and attaching screws.
- (4) Install lamps and secure fixture door or lens.
- (5) Circuit breakers applicable to light being removed:

Remove the safety tags and close these circuit breakers:

## LEFT CONSOLE, GROUND SERVICE BUS

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

B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

#### LOWER EPC, DC TRANSFER BUS

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

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

## OVERHEAD EMERGENCY DC BUS

Row Col Number Name

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

 A
 14
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

 WJE 410
 EMERGENCY LIGHTS ARM AND CHARGE

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

WJE ALL

33-21-05

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WJE ALL

(6) Perform adjustment/test to verify proper operation of light.

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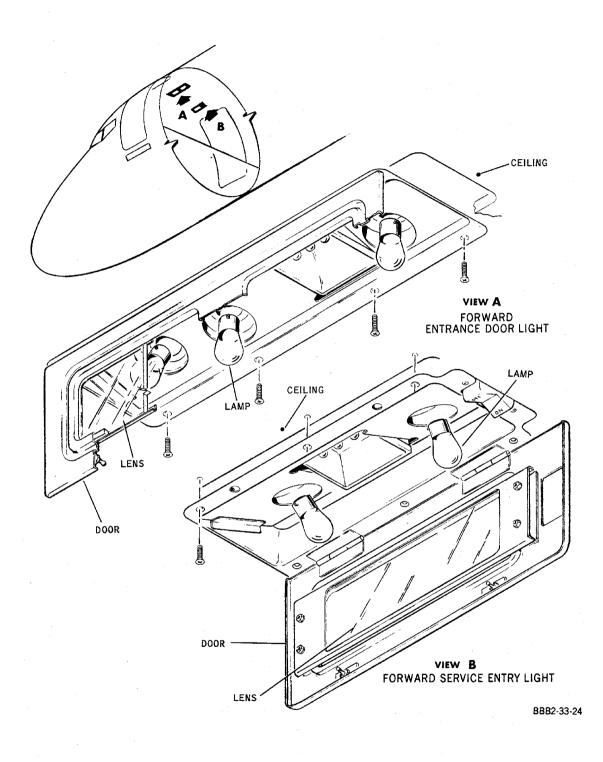
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Forward Door and Service Entrance Lights -- Removal/Installation Figure 401/33-21-05-990-801

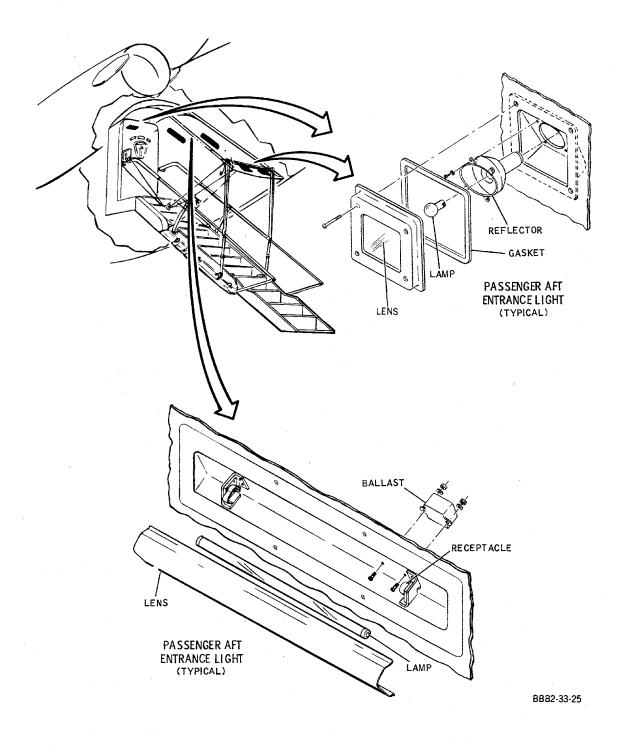
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## Aft Entrance and Service Lights -- Removal/Installation Figure 402/33-21-05-990-802

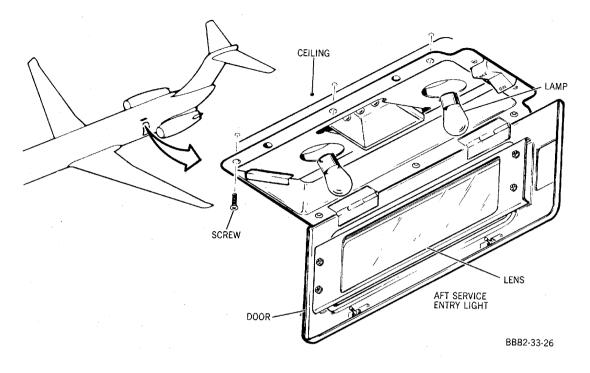
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Aft Entrance and Service Lights -- Removal/Installation Figure 403/33-21-05-990-803

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33-21-05

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## DOOR AND ENTRANCE LIGHTS - ADJUSTMENT/TEST

### 1. General

A. The following procedures provide a test of the normal and emergency lights installed in the door and entrance lights fixtures. When testing the emergency lighting system, turn the emergency light switch off as soon as practicable to prevent excessive discharge of the emergency batteries. For each minute of operation, the batteries must charge approximately one hour and fifteen minutes to recover.

### 2. Adjustment/Test Door and Entrance Lights

- A. Test Emergency Lamps in Fixtures
  - (1) Place EMERGENCY LIGHTS switch, on overhead switch panel in TEST/ON position; emergency lights should come on.

# **CAUTION:** EMERGENCY LIGHTS MUST NOT REMAIN ON LONGER THAN MINIMUM PERIOD ACTUALLY REQUIRED. NEVER EXCEED ONE MINUTE PERIOD FOR TEST.

- (2) Place EMERGENCY LIGHTS switch to OFF position; lights should go off.
- B. Test Passenger Forward Entrance Door Light
  - (1) Place ENTRY LIGHTS switch on forward attendant's control panel in ON position; lights which illuminate entrance should come on.
  - (2) Place ENTRY LIGHTS switch to OFF position; lights should go off.
  - (3) Place ATTENDANT LIGHT switch, on forward attendant's control panel, in DIM position; light which illuminates attendant's station should come on.
  - (4) Place ATTENDANT LIGHT switch in BRIGHT position; light should become bright.
  - (5) Place ATTENDANT LIGHT switch to OFF position; lights should go off.
- C. Test Forward Service Door Light
  - (1) Place switch on forward drop ceiling Sta 180R to ON; light should come on.
  - (2) Place switch on forward drop ceiling Sta 180R to OFF position; light should go off.
- D. Test Passenger Aft Door and Entrance Lights

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

NOTE: References to the aft service door light are not applicable on MD-87 series aircraft.

#### WJE ALL

- (1) Actuate AFT STAIR LIGHTS switch on aft attendant's panel; aft door and entrance lights should come on.
- (2) Place AFT STAIR LIGHTS switch to OFF position; lights should go off.
- (3) Actuate AFT STAIR LIGHTS switch on aft stair control panel (external); aft door and entrance lights should come on.
- (4) Place AFT STAIR LIGHTS switch to OFF position; lights should go off.
- (5) Place switch on aft service door drop ceiling panel, in Dim position; light should come on.
- (6) Place switch on aft service door drop ceiling panel, in BRT position; light should become bright.
- (7) Place switch on aft service door drop ceiling panel, in OFF position; light should go off.

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## **READING LIGHTS - REMOVAL/INSTALLATION**

## 1. General

A. This chapter provides removal/installation procedures for the passenger Reading Lights. Manual procedures are provided in Paragraph 3.. Procedures for using the Reading Light Changing utensil are provided in Paragraph 4.. The Reading Lights are installed in the Passenger Service Units (PSUs) which are overhead at each passenger seat position.

## 2. Equipment and Materials

- NOTE: Equivalent substitute may be used instead of the following item.
- <u>NOTE</u>: Some materials in the Equipment and Materials list may not be permitted to be used in your location. Persons in each location must make sure they are permitted to use these materials. All persons must obey all applicable federal, state, local, and provincial regulations for their location.

#### Table 401

Name and Number	Manufacturer
Reading Light Adjustment Utensil CPN 5538265	American Airlines

#### 3. Removal/Installation Reading Lights - Manual

- A. Remove Reading Lights
  - (1) Hold lens cap with fingers and pull straight outward from fixture.

**CAUTION:** DO NOT FORCE OR TWIST LENS CAP. DAMAGE TO LENS CAP OR LIGHT HOUSING MAY OCCUR.

- (2) Remove lamp.
- B. Install Reading Lights
  - (1) Keep lamp free of fingerprints and install lamp.

NOTE: Oil contamination from fingers causes lamp to smoke when lit.

- (2) Press lens cap firmly against light housing until bullet type latches secure lens cap to housing.
- (3) Hold lens cap and pull outward gently to ensure that lens is completely latched.

#### 4. Removal/Installation Reading Lights - Reading Light Changing Utensil

- A. Remove Reading Lights
  - (1) Remove lens cap with notched end of utensil.
  - (2) Using opposite end of utensil, remove lamp.
- B. Install Reading Lights
  - (1) Keep lamp free of fingerprints and install lamp.

NOTE: Oil contamination from fingers causes lamp to smoke when lit.

- (2) Insert lens in notched end of utensil, press lens cap firmly against light housing until bullet type latches secure lens cap to housing.
- (3) Pull outward gently to ensure that lens is completely latched.

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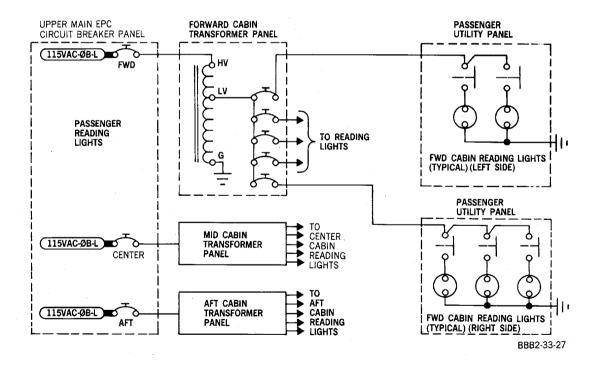
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#### UTILITY AND WORK LIGHTS - DESCRIPTION AND OPERATION

#### 1. General

- A. The utility and work lights consist of the passenger reading lights, mirror lights, attendant's work light, and galley light.
- B. The passenger reading lights are located in the overhead stowage rack. Incandescent lights are installed and directed one to a seat. Each light is turned on and off with a push-button switch located beside the light. The lamps receive power from the left 115 vac bus reduced in voltage through a transformer. A lens, positioned in front of the lamp, focuses the light on the reading area.
- C. The lavatory mirror lights are fluorescent lights located on the upper and lower portions of the mirror. A switch installed on the wall over the door, is actuated by the opening and closing of the door. The lights automatically dim when the door is open. A switch on the aft attendant's control panel permits the mirror lights to be turned on bright with the door open, but it cannot dim the lights when the door is closed. The lavatory mirror lights continuously receive power from the 115 vac ground service bus when the bus is energized.
- D. The attendant's work lights are located in the forward, mid and aft cabin ceiling. An incandescent lamp provides direct lighting and is activated by a switch on the attendant panels. The lights receive power from the 115 vac ground service bus, and voltage is reduced through a transformer.
- E. The galley lights are located in the galley ceiling. The forward galley light is actuated by a switch on the light assembly. The aft galley light is actuated by a switch on the aft galley light assembly. A fluorescent lamp provides direct lighting. The light receives power from the 115 vac ground service bus.



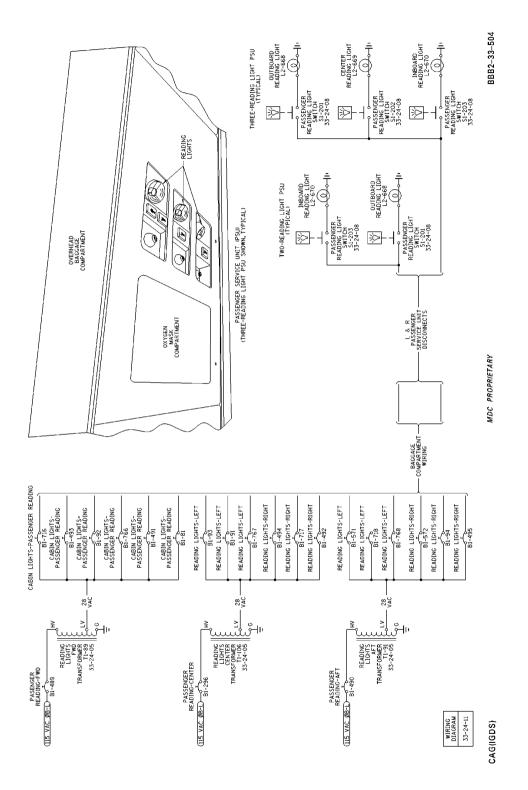


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Passenger Reading Lights -- Simplified Schematic Figure 2/33-22-00-990-802

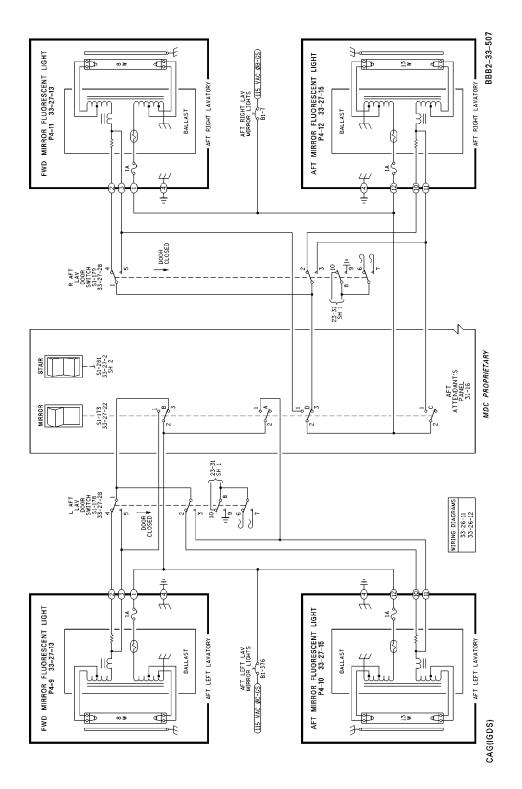
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Aft Lavatory Mirror Lights -- Simplified Schematic Figure 3/33-22-00-990-803

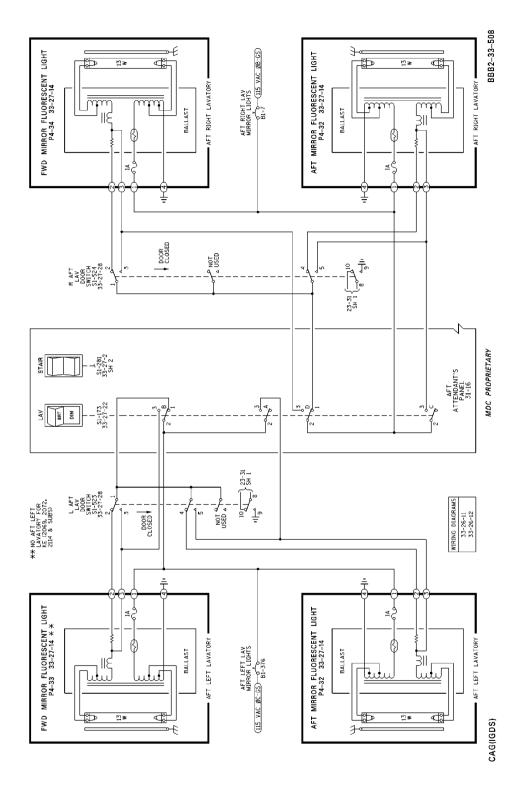
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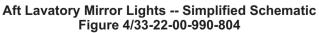
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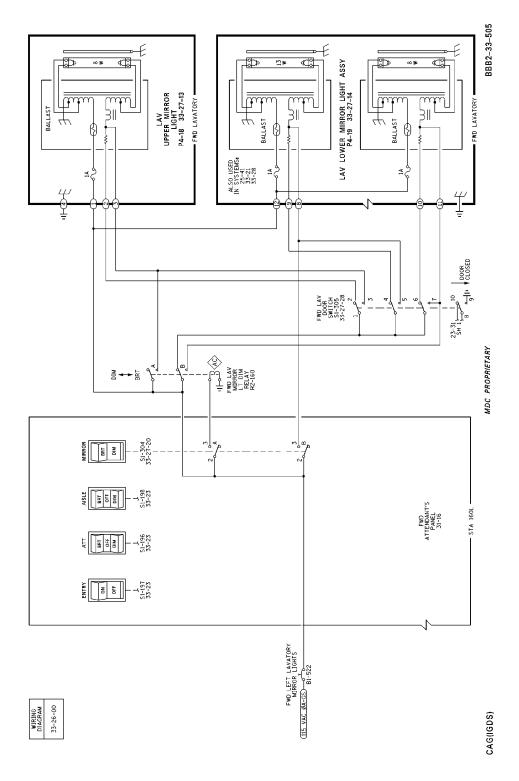
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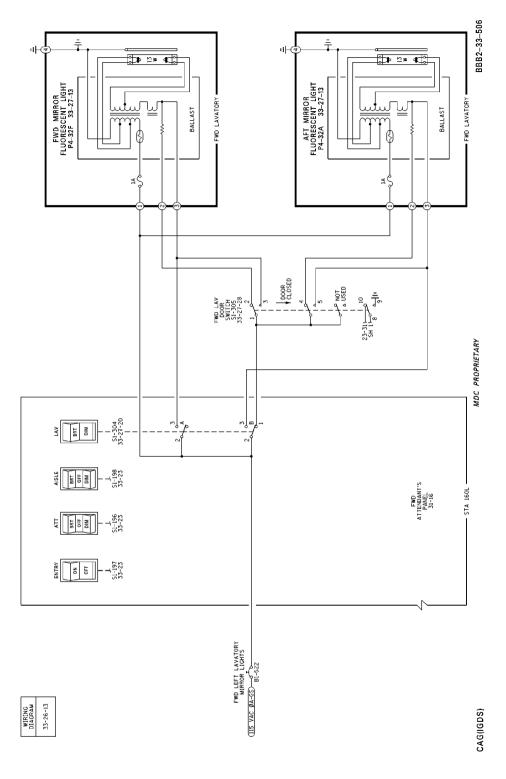
## Forward Lavatory Mirror Lights -- Simplified Schematic Figure 5/33-22-00-990-805

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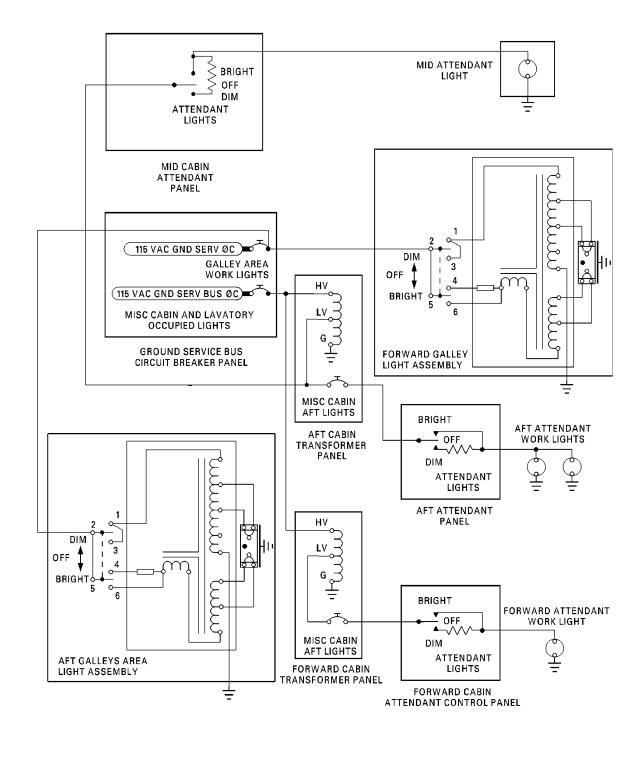


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Galley and Attendant Work Lights -- Simplified Schematic Figure 7/33-22-00-990-807

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### **UTILITY LIGHTS - MAINTENANCE PRACTICES**

#### General 1.

- The utility lights consist of the passenger reading lights and lavatory mirror lights. Lamp replacement Α. is accomplished by opening the fixture or removing the lens. When lamp replacement is accomplished, place appropriate switch in the on position to verify proper operation of light.
- B. A reading light adjustment tool is used to adjust the passenger reading light. The tool has a short telescopic handle that extends approximately from 24 inches to 59 inches (60.96 cm to 149.86 cm).
- C. The reading light adjustment tool consists of a plastic cap designed to fit into the ball housing of a passenger reading unit. Each light is adjustable either side of center in a 360 degree conical zone.
- D The light fixtures should be cool during adjustment because heat causes stiffness and binding of the movable parts on the adjustment tool.

### 2. Equipment and Materials

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

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

Table 201			
Name and Number	Manufacturer		
Reading light adjustment tool PA70224-1 or PA70224-5	Luminator		

#### 3. **Removal/Installation Lavatory Mirror Lights**

Remove Lights(Figure 201) Α.

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

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

#### LEFT CONSOLE. GROUND SERVICE BUS

Row	<u>Col</u>	Number	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

#### LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

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

W 30 B1-365 PASSENGER WARNING SIGNS

#### LOWER EPC. MISCELLANEOUS LEFT DC BUS

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

Ρ 37 B1-8 CALL SYSTEM

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### **UPPER EPC, POWER - RIGHT AC BUS**

Row Col Number Name

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

- L 6 B1-526 RAZOR OUTLETS FWD
- L 7 B1-367 RAZOR OUTLETS AFT

#### WJE ALL

- (2) Gain access to lamp and attaching screws.
- (3) Remove lamp and attaching screws.
- (4) Disconnect and tag electrical wiring.
- (5) Remove light fixture.

#### 4. Removal/Installation Lavatory Mirror Lights

A. Install Lights(Figure 201)

Row

- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Make sure that these circuit breakers are open and have safety tags:

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

## LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

Row Col Number Name

W 30 B1-365 PASSENGER WARNING SIGNS

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

## UPPER EPC, POWER - RIGHT AC BUS

Row Col Number Name

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

- L 6 B1-526 RAZOR OUTLETS FWD
- L 7 B1-367 RAZOR OUTLETS AFT

#### WJE ALL

- (2) Connect electrical wiring.
- (3) Position fixture and install attaching screws.
- (4) Install lamp.
- (5) Circuit breakers applicable to light being removed:

WJE ALL

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Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	Number	Name	
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS	
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS	
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT	

#### LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

Row Col Number Name

W 30 B1-365 PASSENGER WARNING SIGNS

## LOWER EPC, MISCELLANEOUS LEFT DC BUS

RowColNumberNameP37B1-8CALL SYSTEM

**UPPER EPC, POWER - RIGHT AC BUS** 

Row Col Number Name

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

- L 6 B1-526 RAZOR OUTLETS FWD
- L 7 B1-367 RAZOR OUTLETS AFT

#### WJE ALL

(6) Place appropriate switch in ON position to check proper operation of lavatory mirror lights.

#### 5. Adjustment/Test Lavatory Mirror Lights

- A. Test Lavatory Mirror Lights
  - (1) Place mirror light dimming switch on attendant's panel in DIM position.
  - (2) Close lavatory door; lights should brighten.
  - (3) Open lavatory door; lights should dim.

<u>NOTE</u>: If lights do not dim or brighten properly, verify proper operation of lavatory mirror lights dimming switch. (UTILITY AND WORK LIGHTS CIRCUIT COMPONENTS, SUBJECT 33-22-03)

(4) Place mirror light dimming switch on attendant's panel in BRIGHT position; lights should brighten.

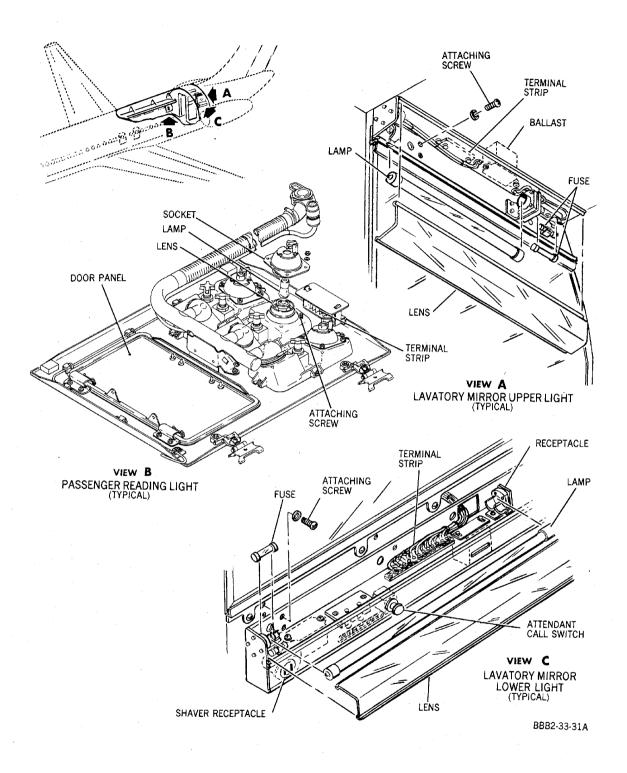
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Passenger Reading and Lavatory Mirror Lights -- Removal/Installation Figure 201/33-22-01-990-801

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#### 6. <u>Removal/Installation Passenger Reading Lights</u>

- A. Remove Lights(Figure 202)
  - WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
  - (1) Open these circuit breakers and install safety tags:

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

<u>Row</u>	Col	<u>Number</u>	Name
K	20	B1-489	PASSENGER READING-FWD
K	21	B1-296	PASSENGER READING - CENTER
K	22	B1-490	PASSENGER READING-AFT

(2) Grasp lens cap with fingers and pull straight outward from fixture.

**CAUTION:** DO NOT TWIST OR USE FORCE ON THE LENS CAP. THIS WILL PREVENT DAMAGE TO THE LENS CAP OR THE LIGHT SOCKET.

- (3) Remove lamp.
- (4) Open Passenger Service Unit panel (PSU) and gain access to fixture and electrical wiring.
- (5) Disconnect and tag electrical wiring.
- (6) Remove attaching screws and remove light fixture.
- B. Install Lights(Figure 202)

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

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

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ρ	37	B1-8	CALL SYSTEM

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

Row	<u>Col</u>	<u>Number</u>	Name
K	20	B1-489	PASSENGER READING-FWD
K	21	B1-296	PASSENGER READING - CENTER
K	22	B1-490	PASSENGER READING-AFT

- (2) Connect electrical wiring.
- (3) Position fixture and install attaching screws and close PSU panel.
- (4) Install lamp.
- (5) Press lens cap firmly against light housing until bullet type latches secure lens cap to light housing.
- (6) Grasp lens cap and pull outward slightly to make sure that lens is completely latched.

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WJE ALL	



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

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row Col Number Name Ρ

37 B1-8 CALL SYSTEM

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

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

- PASSENGER READING-FWD Κ 20 B1-489
- Κ 21 B1-296 **PASSENGER READING - CENTER**
- κ 22 B1-490 PASSENGER READING-AFT
- (8) Place reading light switch in on position to verify proper operation of passenger reading light.

## 7. Adjustment/Test Passenger Reading Lights

A. Adjustment/Test Procedure

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

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

## LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
-	~ 7	<b>D</b> 4 0	

Ρ 37 B1-8 CALL SYSTEM

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
К	20	B1-489	PASSENGER READING-FWD
K	21	B1-296	PASSENGER READING - CENTER
K	22	B1-490	PASSENGER READING-AFT

(2) Grasp lens cap with fingers and pull straight outward from fixture.

CAUTION: DO NOT TWIST OR USE FORCE ON THE LENS CAP. THIS WILL PREVENT DAMAGE TO THE LENS CAP OR THE LIGHT SOCKET.

- (3) Insert reading light adjustment tool into ball housing of reading light. Reference (Figure 202) for proper direction of reading light illuminations.
- (4) Rotate and adjust reading light housing until tool points to reading plane dimensions (Figure 202).
- (5) Remove adjustment tool.
- (6) Press lens cap firmly against light housing until bullet type latches secure lens cap to light housing.
- (7) Grasp lens cap and pull outward slightly to make sure that lens is completely latched.
- (8) Remove the safety tags and close these circuit breakers:

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row Col Number Name Р 37 B1-8 CALL SYSTEM

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## UPPER EPC, LIGHTS - LEFT AC BUS

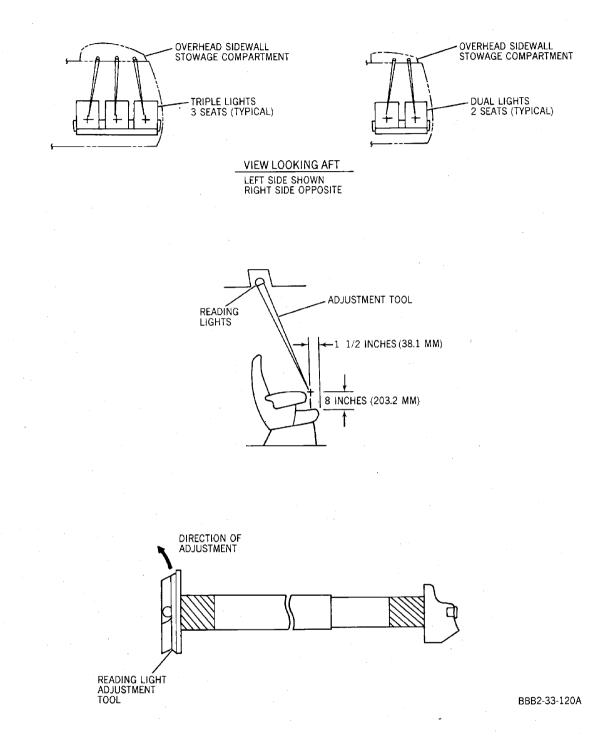
<u>Col</u>	<u>Number</u>	Name
20	B1-489	PASSENGER READING-FWD
21	B1-296	PASSENGER READING - CENTER
22	B1-490	PASSENGER READING-AFT
	20 21	21 B1-296

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#### Passenger Reading Lights -- Adjustment Figure 202/33-22-01-990-802

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## WORK LIGHTS - MAINTENANCE PRACTICES

## 1. General

A. The work lights consist of the galley work lights and the attendant's work lights. The galley work lights are fluorescent type located in the galley ceiling. The galley work light fixture also contains standby light installations. The attendant's work lights are incandescent type located in the passenger forward entrance door light fixture mid cabin ceiling and in the aft cabin ceiling. Emergency light installations in the forward entrance door light fixture make it necessary to place the cabin emergency lights switch in the off position and open the emergency lights arm and charge circuit breaker when working on the forward attendant's work light. The cabin emergency lights switch must be in the off position before the circuit breaker is opened to prevent energizing the emergency lights circuit.

#### 2. Removal/Installation Work Lights

- A. Remove Lights
  - **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
  - **CAUTION:** MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.
  - (1) Open these circuit breakers and install safety tags:

## LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-360	GALLEY AREA WORK LIGHTS

#### OVERHEAD EMERGENCY DC BUS

Row Col Number Name WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 А 13 B1-42 CABIN STANDBY LIGHTS WJE 410 B1-42 CABIN STANDBY LIGHTS А 14 WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 А 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE **WJE 410** А EMERGENCY LIGHTS ARM AND CHARGE 15 B1-41

#### WJE ALL

- (2) Gain access to lamp and attaching screws.
- (3) Remove lamp.
- (4) Remove attaching screws.
- (5) Disconnect and tag electrical wiring.
- (6) Remove light fixture.

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B. Install Lights

Row

- WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Make sure that these circuit breakers are open and have safety tags:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-360	GALLEY AREA WORK LIGHTS

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

Row Col Number Name

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 А 13 B1-42 CABIN STANDBY LIGHTS **WJE 410** 14 B1-42 CABIN STANDBY LIGHTS А WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 А 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE **WJE 410** EMERGENCY LIGHTS ARM AND CHARGE А 15 B1-41

#### WJE ALL

- (2) Connect electrical wiring.
- (3) Install fixture and attaching screws.
- (4) Install lamp.
- (5) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

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

B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-360	GALLEY AREA WORK LIGHTS

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

## Row Col Number Name

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 A 13 B1-42 CABIN STANDBY LIGHTS

WJE 410

А

14 B1-42 CABIN STANDBY LIGHTS

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WJE 410 (Continued)

(Contir	nued)		
OVERH	EAD E	MERGENC	Y DC BUS
Row	<u>Col</u>	<u>Number</u>	Name
WJE 401 891-893	-409, 4	11, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE
WJE 410	)		
А	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

#### WJE ALL

(6) Place appropriate switch in ON position to check proper operation of lights.

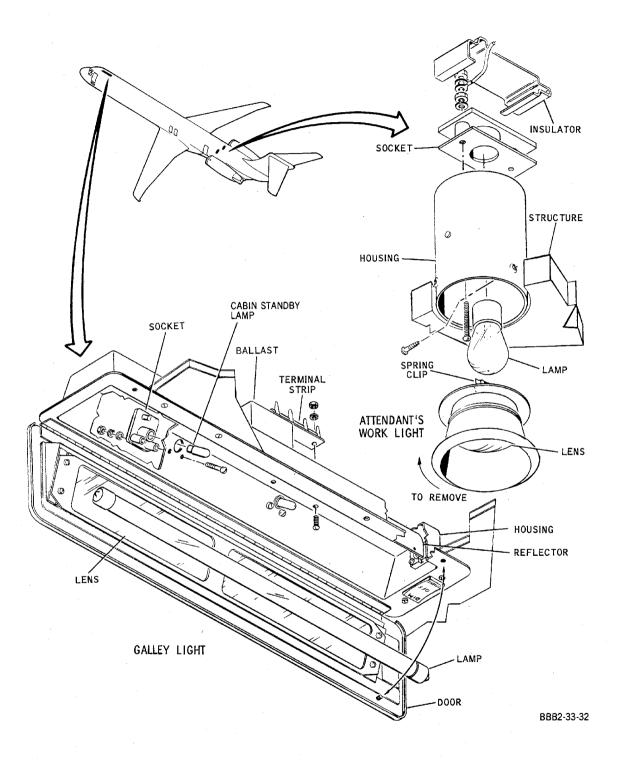
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#### Work Lights -- Removal/Installation Figure 201/33-22-02-990-801

WJE ALL

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#### UTILITY AND WORK LIGHTS CIRCUIT COMPONENTS - MAINTENANCE PRACTICES

### 1. General

A. Utility and work lights circuit components consist of the lavatory occupied switch, lavatory mirror lights dimming switch, and lavatory mirror lights ballast. The lavatory occupied switch is located in the lavatory doorjamb and is actuated by locking the lavatory door. The lavatory mirror lights dimming switch is located in the lavatory ceiling above the door and is actuated by closing the lavatory door. The lavatory mirror lights ballasts are attached to the mirror lights fixtures.

#### 2. Removal/Installation Lavatory Switches

A. Remove Lavatory Occupied Switch

#### WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (2) To gain access to switch, remove switch cover plate from lavatory doorjamb.
- (3) Disconnect and tag electrical wiring.
- (4) Remove switch from cover plate.
- B. Install Lavatory Occupied Switch

## WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

## LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	Number	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (2) Install switch on cover plate.
- (3) Connect electrical wiring.

<u>Row</u>

- (4) Position cover plate on doorjamb and install attaching screws.
- (5) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

01100	LL, 01(00)	
<u>Col</u>	<u>Number</u>	Name
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (6) Check proper operation of switch by locking lavatory door; lavatory occupied sign should illuminate.
- C. Remove Mirror Light Dimming Switch

WJE ALL



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WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

(1) Open and tag following circuit breakers applicable to lavatory where work is to be performed:

### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

- (2) Gain access to switch by removing lavatory ceiling access panel.
- (3) Remove cover from bracket.
- (4) Loosen nuts on side of switch and remove switch from bracket.
- (5) Disconnect and tag electrical wiring.
- (6) Remove switch.

Row

D. Install Mirror Light Dimming Switch

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
	B1-376 B1-7

- (2) Connect electrical wiring.
- (3) Position switch on bracket to allow 1/16-inch (1.5875mm) travel beyond point of actuation when door is closed; tighten nuts.
- (4) Install cover on bracket.
- (5) Install lavatory ceiling access panel.
- (6) Remove the safety tags and close these circuit breakers:

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
		B1-376	AFT LEFT LAV MIRROR LIGHTS
		B1-7	AFT RIGHT LAV MIRROR LIGHT
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

- (7) Check proper operation of mirror light dimming circuit.
  - (a) Place mirror light dimming switch on attendant's panel in DIM position.
  - (b) Close lavatory door; lights should become bright.
  - (c) Open lavatory door; lights should dim.
  - (d) Place mirror light dimming switch on attendant's panel in BRIGHT position; lights should become bright.

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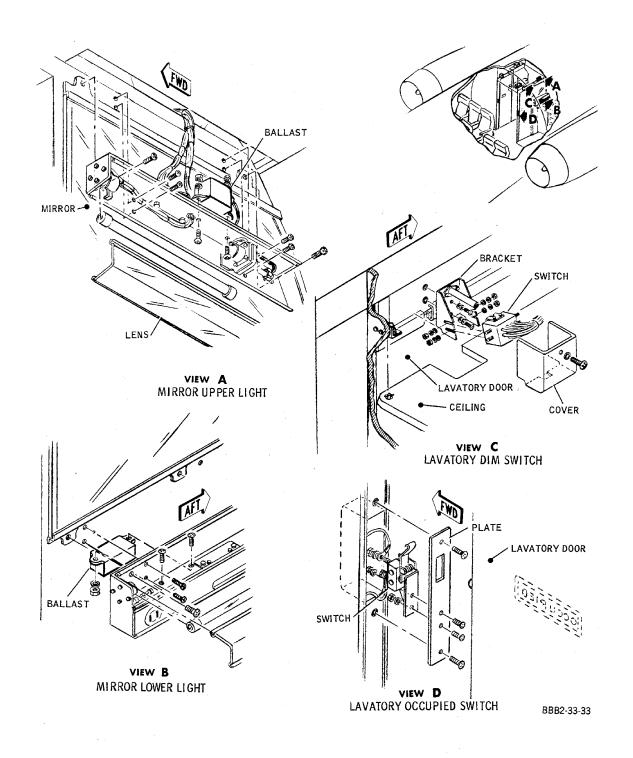
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## Lavatory Mirror Lights Ballast and Switches - Removal/Installation Figure 201/33-22-03-990-801

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## 3. Removal/Installation Lavatory Mirror Lights Ballast

A. Remove Lavatory Mirror Lower Light Ballast

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

(1) Open and tag following circuit breakers applicable to lavatory where work is to be performed:

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

- (2) Gain access to ballast by removing mirror light lens and lamp.
- (3) Disconnect and tag electrical wiring.
- (4) Remove attaching screws from ballast.
- (5) Remove ballast from fixture.
- B. Install Lavatory Mirror Lower Light Ballast

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-376	AFT LEFT LAV MIRROR LIGHTS
	B1-7	AFT RIGHT LAV MIRROR LIGHT
	B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

- (2) Position ballast on mirror light fixture and secure with attaching screws.
- (3) Connect electrical wiring.

Row

Row

- (4) Install lamp and mirror light lens.
- (5) Remove the safety tags and close these circuit breakers:

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
	B1-376 B1-7

- (6) Check proper operation of mirror light circuit.
- C. Remove Lavatory Mirror Upper Light Ballast

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

(1) Open and tag following circuit breakers applicable to lavatory where work is to be performed:

## LEFT CONSOLE, GROUND SERVICE BUS

umber	Name
1-376	AFT LEFT LAV MIRROR LIGHTS
1-7	AFT RIGHT LAV MIRROR LIGHT
1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
	1-376 1-7

(2) Gain access to ballast by removing mirror light lens and lamp, and lavatory ceiling panel.

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- (3) Disconnect and tag electrical wiring.
- (4) Remove attaching screws from ballast.
- (5) Remove ballast from fixture.
- D. Install Lavatory Mirror Upper Light Ballast

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

#### LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
	B1-7

- (2) Position ballast on light fixture and secure with attaching screws.
- (3) Connect electrical wiring.

Row

- (4) Install mirror light lamp and lens, and lavatory ceiling panel.
- (5) Remove the safety tags and close these circuit breakers:

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
	B1-376 B1-7

(6) Check proper operation of lavatory mirror lights circuit (Ref. Paragraph 2.).

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33-22-03

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#### LIGHTED SIGNS, CABIN PANELS, AND CALL SYSTEMS - DESCRIPTION AND OPERATION

## 1. General

- A. Lighted signs throughout the passenger compartment provide specific instructions of pertinent information for the passengers. All passenger advisory signs are electroluminescent or incandescent. The no smoking/fasten seat belts signs are controlled by switches located in the flight compartment. The return to cabin signs operate on the fasten seat belt switch circuit. The lavatory occupied signs operate from a switch installed on the lavatory door locking mechanism.
- B. The cabin attendant panels contain switches and controls for operating related electrical components located in the passenger compartment.
- C. The call system uses a combination of audible and visible signals for communication between the flight crew and attendants, passengers and attendants, and between the flight crew and mechanic. Call switches, with integral lights and reset capability are installed at each row of seats and in each lavatory. The call switches, when actuated, turn on the master call lights located in the forward and aft drop ceiling area and mid cabin panel. Specific color coding of the master call lights identifies the source of a call. The passenger call light and attendant to pilot call lights are blue; the lavatory call light, amber; the attendant to attendant, and flight compartment to attendant call light, pink. The master call lights which indicate calls, originated at a passenger seat or in a lavatory, can be reset at the calling switch. The cabin attendant to cabin attendant, and flight compartment to cabin attendant, master call lights can be reset at the forward, mid, or aft cabin attendant control panel. The attendant to pilot call light is reset at the flight compartment overhead switch panel.
- D. In conjunction with the master call lights coming on, a momentary chime tone should sound at the attendants' cabin speakers when a call switch is actuated. A call originating from a lavatory or passenger seat sounds a high (bing) tone. A call originating from an attendant's panel, or the flight compartment sounds a high-low (bing-bong) tone.

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

- E. Actuation of the no smoking switch will cause the no smoking signs to come on and simultaneously produce a momentary chime tone (bong) at each cabin speaker. When the no smoking switch is in the automatic mode, placing the landing gear lever in the down position will actuate the switch. Actuation of the seat belt switch will cause the fasten seat belt signs to come on and simultaneously produce a momentary chime tone (bong) at each cabin speaker. When the seat belt switch is in the automatic mode, the fasten seat belt signs will come on when the leading edge slats have extended.
- F. In the event that the cabin pressure reaches an altitude of 10,000 feet (3048 M) a high-low (bingbong) tone should sound at the attendants' cabin speakers to provide a cabin pressure warning. If the no smoking switch or seat belt switch is in the AUTO position, the no smoking signs and fasten seat belt signs will also come on if the cabin pressure warning is activated.

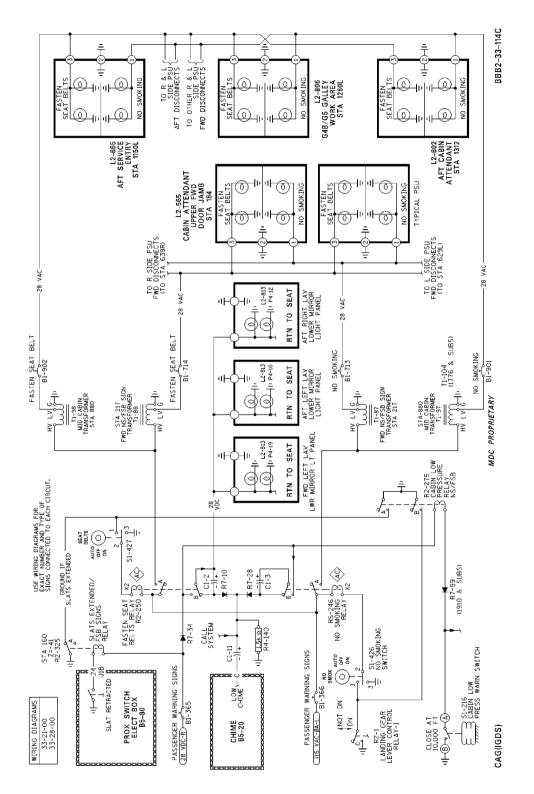
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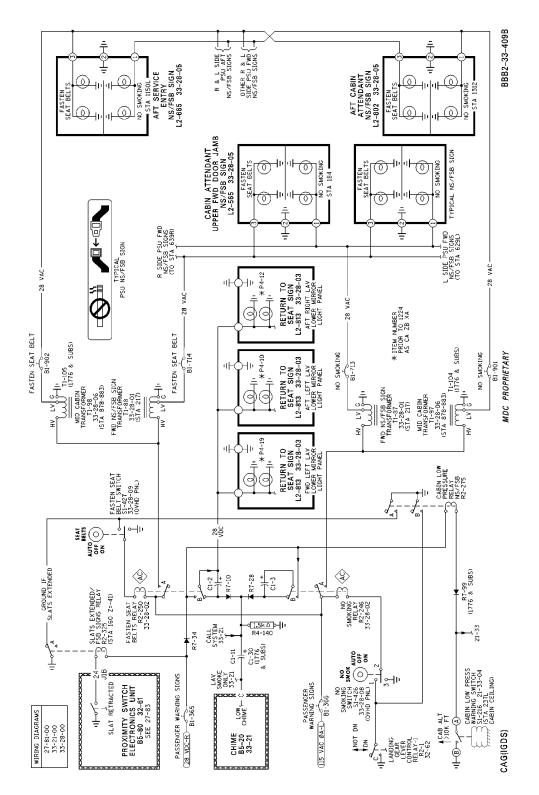
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Passenger Advisory Sign -- System Schematic Figure 1/33-23-00-990-801 (Sheet 2 of 7)

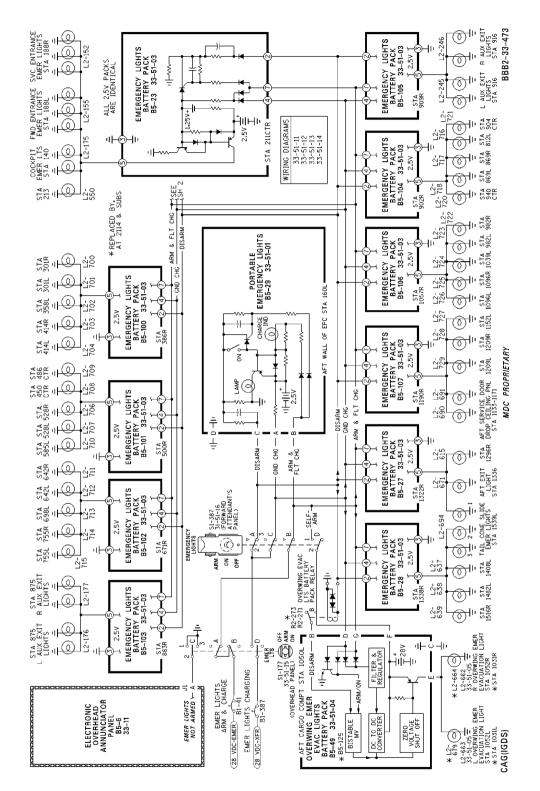
WJE 405, 409, 410, 873, 874, 881, 883, 884, 892, 893

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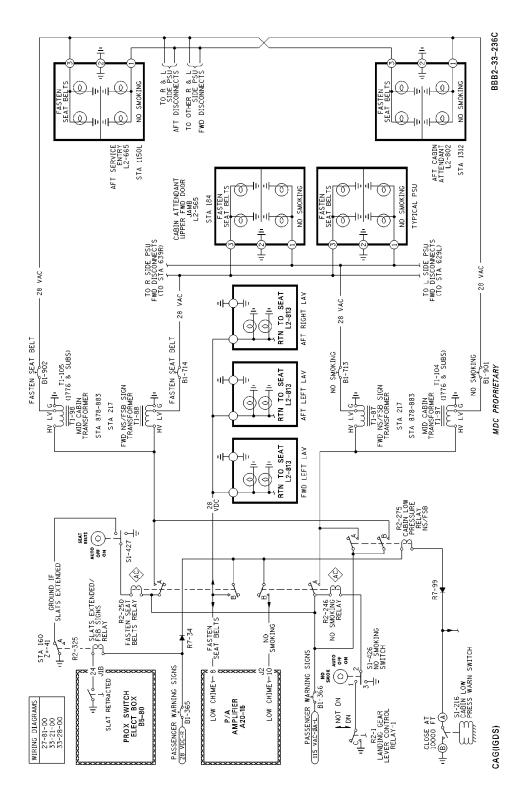
Passenger Advisory Sign -- System Schematic Figure 1/33-23-00-990-801 (Sheet 3 of 7)

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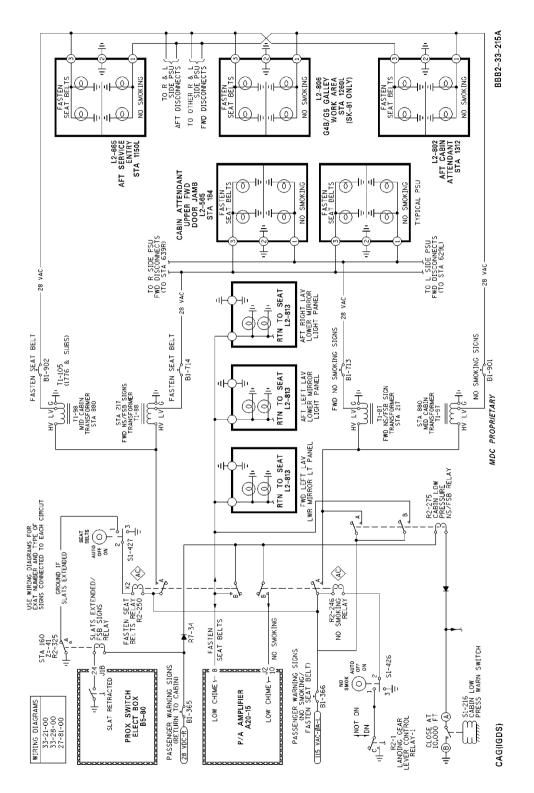
Passenger Advisory Sign -- System Schematic Figure 1/33-23-00-990-801 (Sheet 4 of 7)

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Passenger Advisory Sign -- System Schematic Figure 1/33-23-00-990-801 (Sheet 5 of 7)

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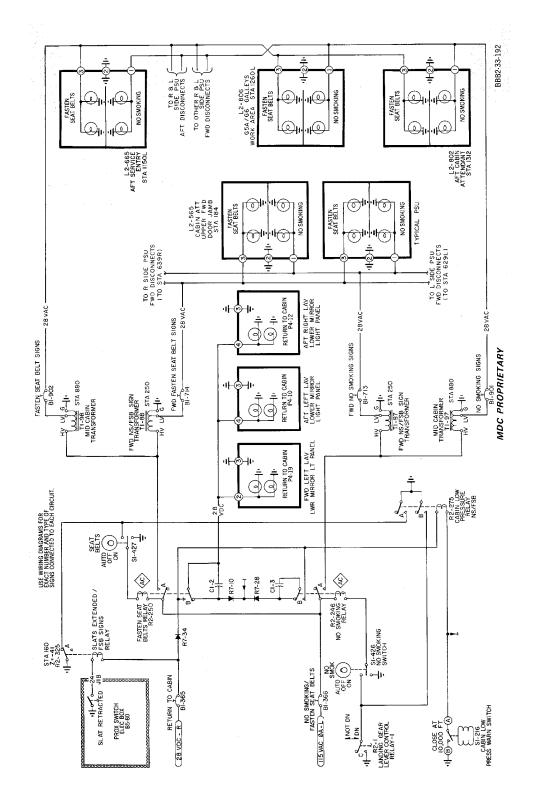
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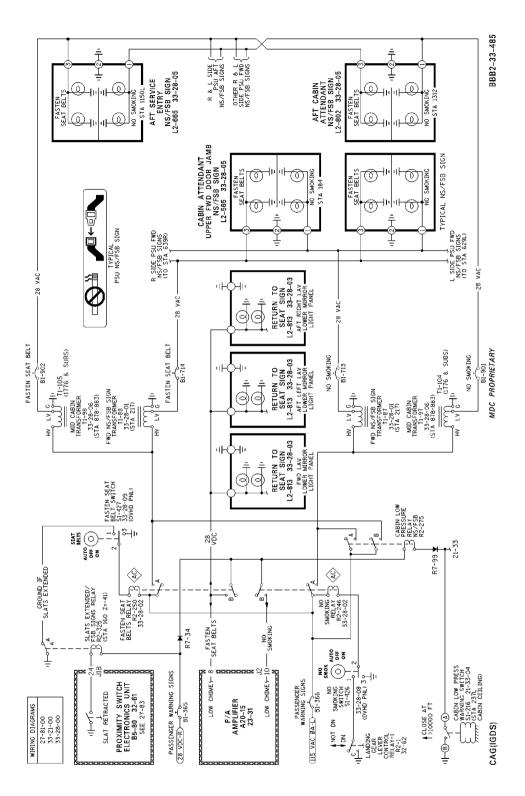
Passenger Advisory Sign -- System Schematic Figure 1/33-23-00-990-801 (Sheet 6 of 7)

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Passenger Advisory Sign -- System Schematic Figure 1/33-23-00-990-801 (Sheet 7 of 7)

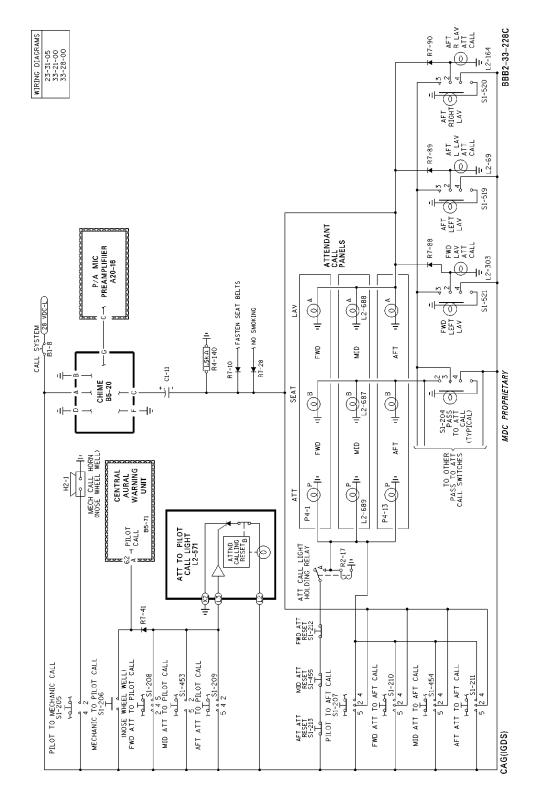
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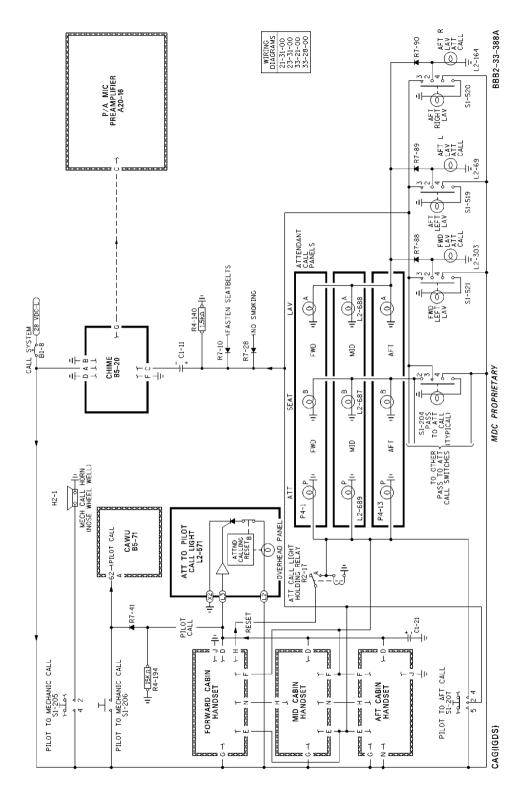
Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 1 of 7)

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Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 2 of 7)

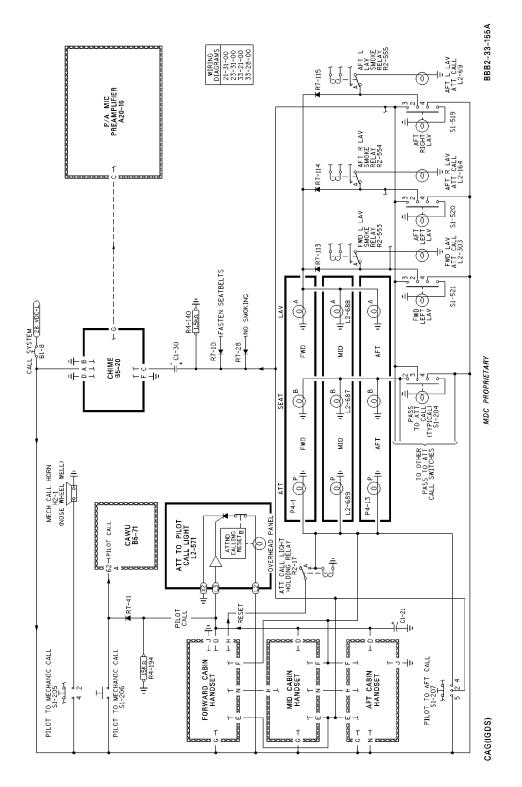
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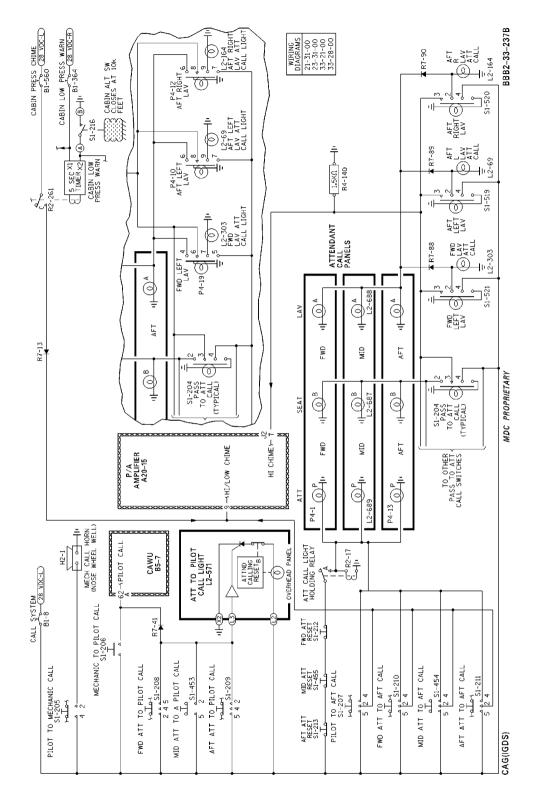
Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 3 of 7)

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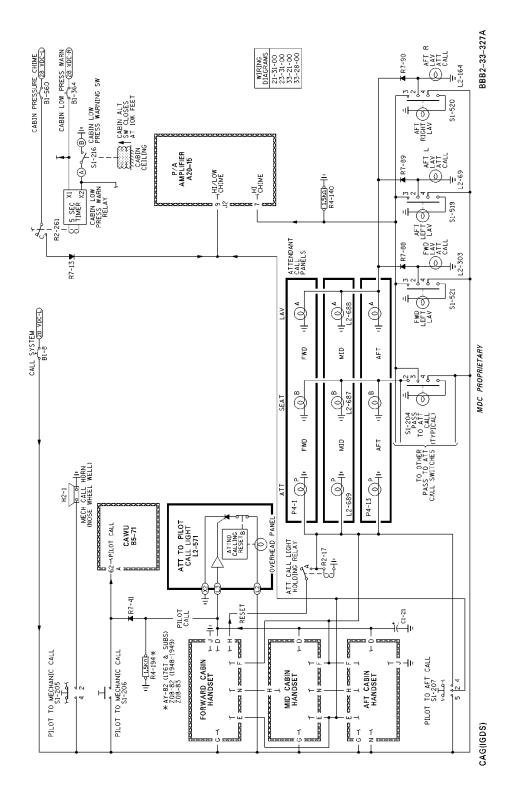
Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 4 of 7)

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Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 5 of 7)

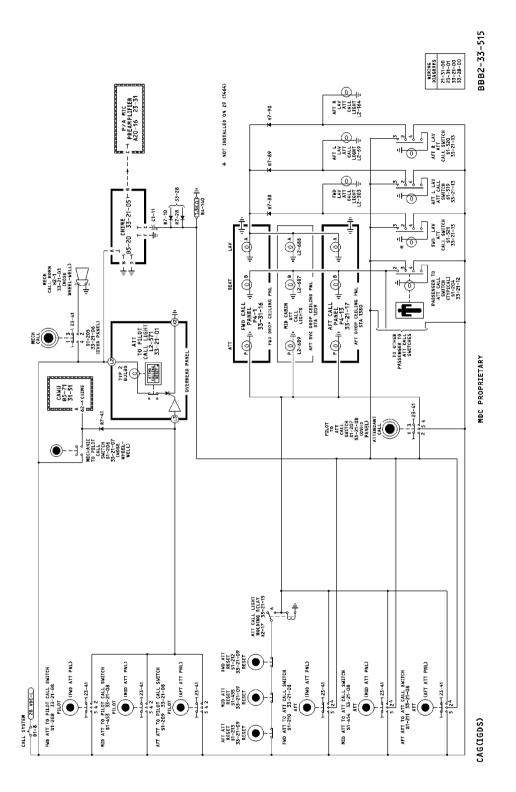
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Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 6 of 7)

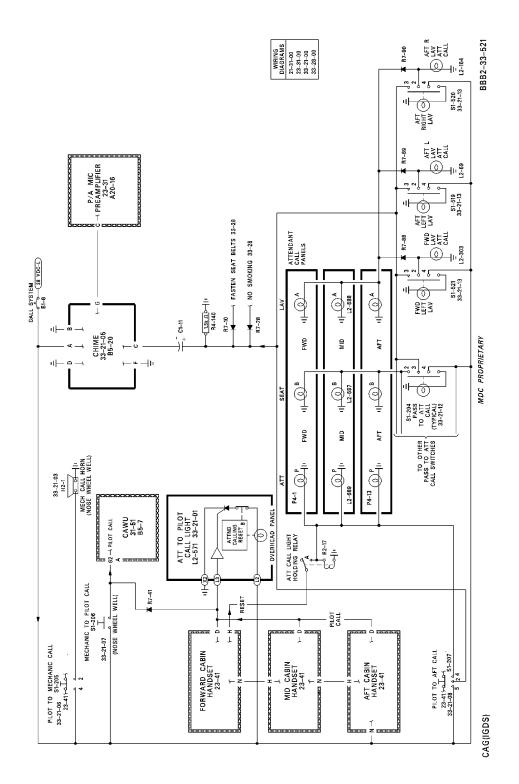
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Call System -- Schematic Figure 2/33-23-00-990-802 (Sheet 7 of 7)

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### LIGHTED SIGNS - REMOVAL/INSTALLATION

#### 1. General

- The following procedures provide instructions for removing and installing the lighted signs located in Α. the passenger compartment.
- There are two types of lighted signs installed in the passenger compartment: incandescent and Β. electroluminescent. Incandescent type signs can be relamped without the use of tools. Electroluminescent type signs cannot be relamped and should be replaced if any portion of the sign fails to function properly. To determine which signs can be relamped, refer to the following chart:

#### WJE 401-404, 412, 414, 873-879, 892, 893

Table 401				
Sign Location		Type of Sign	Relampable	
No smoking/fasten seat Cabin ceiling lelts		Incandescent	Yes	
Return to cabin Lavatory light		Incandescent	Yes	
Lavatory occupied Forward face of galley sta. 1259RH		Electro- luminescent	No	
Forward face of galley sta. 1128LH		Electro- luminescent	No	
	Aft face of coat- room sta. 249LH	Electro- luminescent	No	

#### WJE 405-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891

#### Table 402

Sign	Location	Type of Sign	Relampable	
No smoking/fasten seat belts	Cabin ceiling	Incandescent	Yes	
Return to cabin	Lavatory light	Incandescent	Yes	
Lavatory occupied (MD 80-83 series aircraft)	Forward face of galley sta. 1259RH	Electro- luminescent	No	
	Forward face of galley sta. 1128LH	Electro- luminescent	No	
	Aft face of coat- room sta. 249LH	Electro- luminescent	No	
Lavatory occupied (MD 87 series aircraft)	Forward face of aft lav sta. 1096RH	Electro- luminescent	No	
	Forward face of aft lav sta. 1096LH	Electro- luminescent	No	
	Aft face of coat- room sta. 273LH	Electro- luminescent	No	

#### WJE ALL

#### 2. **Removal/Installation Lighted Signs**

A. Remove No Smoking/Fasten Seat Belts Sign

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

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

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

Row Col Number Name

K 23 B1-366 PASSENGER WARNING SIGNS

- (2) Carefully pull fixture from panel.
- (3) Release fasteners and swing lamp holder out to remove lamps.
- (4) Disconnect electrical wiring.
- B. Installation

Install No Smoking/Fasten Seat Belts Sign

WARNING: TAG AND SAFETY CIRCUIT BREAKER.

(1) Make sure that this circuit breaker is open and has safety tag:

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

Row Col Number Name

K 23 B1-366 PASSENGER WARNING SIGNS

- (2) Connect electrical wiring to fixture.
- (3) Install lamps in lamp holders, close holders and secure with fasteners.
- (4) Position fixture in panel and check that spring tension retains fixture in panel.
- (5) Remove the safety tag and close this circuit breaker:

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

# Row Col Number Name

K 23 B1-366 PASSENGER WARNING SIGNS

- (6) Perform operational test of no smoking/fasten seat belts signs to check proper operation of circuit. (LIGHTED SIGNS ADJUSTMENT/TEST, PAGEBLOCK 33-23-01/501)
- C. Remove Lavatory Occupied Sign

**WARNING:** TAG AND SAFETY CIRCUIT BREAKERS.

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

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (2) Remove sign from partition by carefully prying outward directly adjacent to attaching pins.
- (3) Disconnect electrical wiring.

D. Install Lavatory Occupied Sign

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WJE A	LL				



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WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	Number	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (2) Connect electrical wiring to terminals on back of sign.
- (3) Install sign on partition by carefully applying pressure on area of attaching pins.
- (4) Remove the safety tags and close these circuit breakers:

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

- (5) Check proper operation of circuit by closing and locking lavatory door; sign should come on.
- E. Remove Return to Cabin Sign

Row

Row

#### WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

#### **FWD CABIN LIGHTS CBP**

Col

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-712	RAZOR OUTLET

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

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

K 23 B1-366 PASSENGER WARNING SIGNS

**UPPER EPC, POWER - RIGHT AC BUS** 

Row Col Number Name

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

L 6 B1-526 RAZOR OUTLETS FWD

WJE 401-412, 414, 873-881, 883, 884, 886, 887, 892, 893

L 6 B1-912 RAZOR OUTLETS FWD & AFT

WJE ALL

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

(Continued) UPPER EPC, POWER - RIGHT AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> WJE 415-427, 429, 861-866, 868, 869, 871, 872, 891 L 7 B1-367 RAZOR OUTLETS AFT

#### WJE ALL

- (2) Remove lens from lavatory mirror lower light.
- (3) Remove fluorescent lamp.
- (4) Remove return to cabin light socket attaching screws, and remove socket from mirror light.
- (5) Remove return to cabin light socket attaching screws, and remove socket assembly from mirror light.
- (6) Disconnect electrical wiring.
- F. Install Return to Cabin Sign

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	Name
		B1-376	AFT LEFT LAV MIRROR LIGHTS
		B1-7	AFT RIGHT LAV MIRROR LIGHT
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
K	23	B1-366	PASSENGER WARNING SIGNS

### **UPPER EPC, POWER - RIGHT AC BUS**

Row Col Number Name

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

L 6 B1-526 RAZOR OUTLETS FWD	L	6	B1-526	RAZOR OUTLETS FWD
------------------------------	---	---	--------	-------------------

L	7	B1-367	RAZOR OUTLETS AFT

#### WJE ALL

- (2) Connect electrical wiring to light sockets.
- (3) Position return to cabin light socket in lavatory mirror lower light and install attaching screws.
- (4) Install fluorescent lamp.
- (5) Install lens.

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WJE /	<b>ALL</b>			



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

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
		B1-376	AFT LEFT LAV MIRROR LIGHTS
		B1-7	AFT RIGHT LAV MIRROR LIGHT
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT

### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row Col Number Name

P 37 B1-8 CALL SYSTEM

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

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

K 23 B1-366 PASSENGER WARNING SIGNS

UPPER EPC, POWER - RIGHT AC BUS

# Row Col Number Name

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

- L 6 B1-526 RAZOR OUTLETS FWD
- L 7 B1-367 RAZOR OUTLETS AFT

# WJE ALL

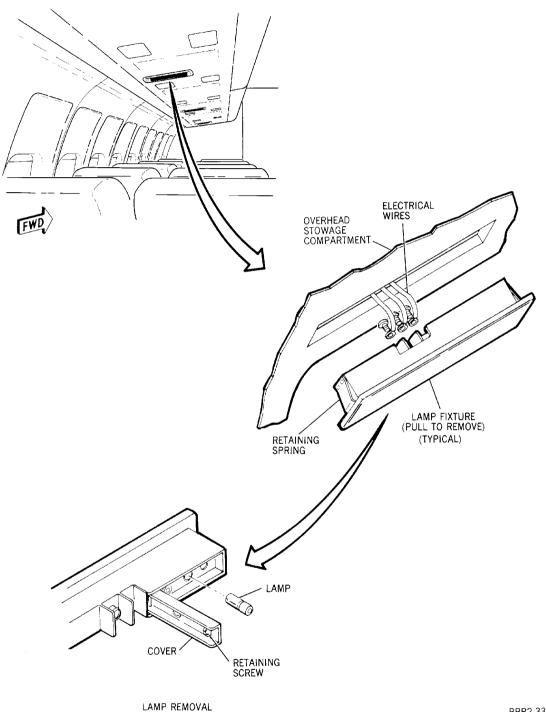
(7) Place FASTEN SEAT BELTS switch in ON position to check proper operation of return to cabin signs; signs should come on.

EFFECTIVITY

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MD-80 AIRCRAFT MAINTENANCE MANUAL



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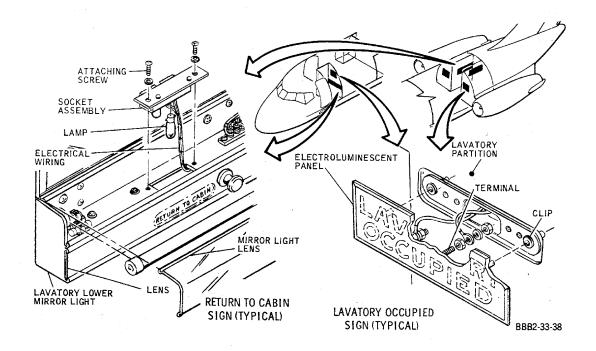
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MD-80 AIRCRAFT MAINTENANCE MANUAL



Return To Cabin and Lavatory Occupied Signs -- Removal/Installation Figure 402/33-23-01-990-803

EFFECTIVITY

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# LIGHTED SIGNS - ADJUSTMENT/TEST

#### 1. General

A. The following procedures provide an operational test of the lighted signs located in the passenger compartment.

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

### 2. <u>Adjustment/Test Lighted Signs</u>

A. No Smoking/Fasten Seat Belts Signs - Operational Test

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

(1) Place NO SMOKING switch in ON position.

#### WJE 401-411, 873-881, 883, 884, 886, 887, 892, 893

(2) Place NO SMOK switch in ON position.

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

- (3) Check that NO SMOKING signs come on.
- (4) Test AUTO position of NO SMOKING switch:
  - (a) Check that landing gear control lever is in down position.

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

(b) Place NO SMOKING switch in AUTO position.

#### WJE 401-411, 873-881, 883, 884, 886, 887, 892, 893

(c) Place NO SMOK switch in AUTO position.

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

(d) Check that NO SMOKING signs remain on.

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

- (5) Place FASTEN SEAT BELTS switch in ON position; FASTEN SEAT BELTS signs should come on.
- (6) Place NO SMOKING and FASTEN SEAT BELTS switches to OFF position.

# WJE 401-411, 873-881, 883, 884, 886, 887, 892, 893

- (7) Place SEAT BELTS switch in ON position; FASTEN SEAT BELTS signs should come on.
- (8) Test AUTO position of SEAT BELTS switch:
  - (a) Check that slat handle is in extended position.
  - (b) Place SEAT BELTS switch in AUTO position.
  - (c) Check that FASTEN SEAT BELTS signs remain on.
- (9) Place NO SMOK and SEAT BELTS switches to OFF position.

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

- B. Return to Cabin Signs Operational Test
  - (1) Place FASTEN SEAT BELTS switch in ON position.
  - (2) Check that RETURN TO CABIN sign in each lavatory comes on.
  - (3) Place FASTEN SEAT BELTS switch to OFF position.
- C. Lavatory Occupied Signs Operational Test

EFFECTIVITY

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

- (1) Close and lock lavatory door.
- (2) Check that respective LAVATORY OCCUPIED sign comes on.
- (3) Perform steps (1) and (2) at each lavatory.

### WJE 412, 414

#### 3. Adjustment/Test Lighted Signs

- A. Lavatory Occupied Signs Operational Test
  - (1) Close and lock lavatory door.
  - (2) Check that respective LAVATORY OCCUPIED sign comes on.
  - (3) Perform steps (1) and (2) at each lavatory.

EFFECTIVITY

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# **CABIN PANELS - MAINTENANCE PRACTICES**

#### General 1.

- The following procedures provide instructions for removing and installing the forward, mid and aft Α. cabin attendant panels. Before performing maintenance on any component of a cabin panel, all circuit breakers relating to that panel must be opened to prevent electrical arcing.
- B. The cabin panels do not incorporate a quick-disconnect feature: therefore, if complete removal of a panel is desired, each component of that panel must be disconnected individually.
- To prevent inadvertent activation of the emergency lights circuit, the emergency lights switches, on C. the overhead switch panel and the forward attendant's panel, must be in the off position before the emergency lights arm and charge circuit breaker is opened.

#### 2. **Removal/Installation Cabin Panels**

A. Remove Cabin Panel/Component

(Figure 201)

Row

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

CAUTION: MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.

Open these circuit breakers and install safety tags for forward attendant's panel: (1)

# LEFT CONSOLE. GROUND SERVICE BUS

	,	
<u>Col</u>	<u>Number</u>	Name
	B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
	B1-699	SIDEWALL LIGHTS - LOWER CONTROL
	B1-703	SIDEWALL LIGHTS - UPPER CONTROL

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYS

37 B1-8 CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row Col Number Name

R 24 B1-124 DOOR WARNING

EFFECTIVITY ' WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-879, 884, 891



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### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

# UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

#### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE

Open these circuit breakers and install safety tags for aft attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	Col	<u>Number</u>	Name
		B1-376	AFT LEFT LAV MIRROR LIGHTS
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-7	AFT RIGHT LAV MIRROR LIGHT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

Row	<u>Col</u>	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, RIGHT RADIO DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE



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Open these circuit breakers and install safety tags for mid cabin attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	Number	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-360	GALLEY AREA WORK LIGHTS

### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ρ	37	B1-8	CALL SYSTEM

#### UPPER EPC, RIGHT RADIO DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- (2) Remove control knobs from face of panel.
- (3) Remove face plate by carefully prying adjacent to attaching pins.
- (4) For forward panel only, remove electrical power center partition, release fasteners, and swing cabin panel open.

# **CAUTION:** TO PREVENT DAMAGE TO WIRING, SUPPORT CABIN PANEL WHEN ATTACHING SCREWS ARE REMOVED.

- (5) For aft panel only, support panel and remove attaching screws.
- (6) For mid cabin panel only, remove cover attaching screws, swing cover up and remove. Release fasteners and swing lower portion of panel down. Support panel and remove attaching nuts and screws.
- (7) Disconnect electrical wiring from component to be removed.
- (8) Remove component attaching screws and remove component.
- B. Install Cabin Panel/Component
  - (1) Make certain these circuit breakers are open and safety tags installed for forward attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

### Row Col Number Name

B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-703	SIDEWALL LIGHTS - UPPER CONTROL

# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Ζ	37	B1-387	EMERGENCY LIGHTS CHARGING

33-23-02

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#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

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

R 24 B1-124 DOOR WARNING

# **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
А	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

#### UPPER EPC, LEFT RADIO DC BUS

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

G 19 B10-121 PASSENGER MUSIC

#### UPPER EPC, RIGHT RADIO DC BUS

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

G 8 B10-65 SERVICE INTERPHONE

Make sure these circuit breakers are open and safety tags installed for aft attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

#### Row Col Number Name

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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P 37 B1-8 CALL SYSTEM

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

Row Col Number Name

A 8 B10-118 PASSENGER ADDRESS



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(Continued)

# OVERHEAD EMERGENCY DC BUS

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

### UPPER EPC, RIGHT RADIO DC BUS

Row Col Number Name

G 8 B10-65 SERVICE INTERPHONE

Make sure these circuit breakers are open and safety tags installed for mid cabin attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-360	GALLEY AREA WORK LIGHTS

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### UPPER EPC. RIGHT RADIO DC BUS

	,	Number	Name
G	8	B10-65	SERVICE INTERPHONE

- (2) Position component on panel and install attaching screws.
- (3) Connect electrical wiring.
- (4) For forward panel only, close cabin panel, secure fasteners, and install electrical power center partition.
- (5) For aft panel only, position panel on partition and install attaching screws.
- (6) For mid cabin panel only, position panel on bracket and secure with attaching nuts and screws. Swing lower portion of panel up and secure with fasteners. Insert cover at top, swing cover down over attendant panel and secure with attaching screws.
- (7) Install face plate on panel by carefully applying pressure on area of attaching pins.
- (8) Install control knobs on panel.
- (9) Do a check of the hinged bypass check valve flapper door for freedom of movement. (Operational Check of the Hinged Bypass Check Valve, TASK 21-20-00-710-801)
- (10) Remove tags and close following applicable circuit breakers:
- (11) Remove tags and close these circuit breakers for forward attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

umber	Name
	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
1-522 I	LAVATORY MIRROR LIGHTS - FWD LEFT
1-699	SIDEWALL LIGHTS - LOWER CONTROL
1-703	SIDEWALL LIGHTS - UPPER CONTROL
	1-777 1-522 1-699

Row

# 33-23-02

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# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>	
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P 37 B1-8 CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
А	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

# **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	Col	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, LEFT RADIO AC BUS

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

F 19 B10-120 PASSENGER MUSIC

#### UPPER EPC, LEFT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	19	B10-121	PASSENGER MUSIC

#### UPPER EPC, RIGHT RADIO DC BUS

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

G 8 B10-65 SERVICE INTERPHONE

Remove tags and close these circuit breakers for aft attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

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

B1-376 AFT LEFT LAV MIRROR LIGHTS

B1-778 AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS

33-23-02

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(Continued)

<u>Row</u>

# LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-7 AFT RIGHT LAV MIRROR LIGHT

### LOWER EPC, MISCELLANEOUS LEFT DC BUS

RowColNumberNameP37B1-8CALL SYSTEM

# **OVERHEAD EMERGENCY DC BUS**

Row	<u>Col</u>	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE

Remove tags and close these circuit breakers for mid cabin attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-360	GALLEY AREA WORK LIGHTS

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### UPPER EPC, RIGHT RADIO DC BUS

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

G 8 B10-65 SERVICE INTERPHONE

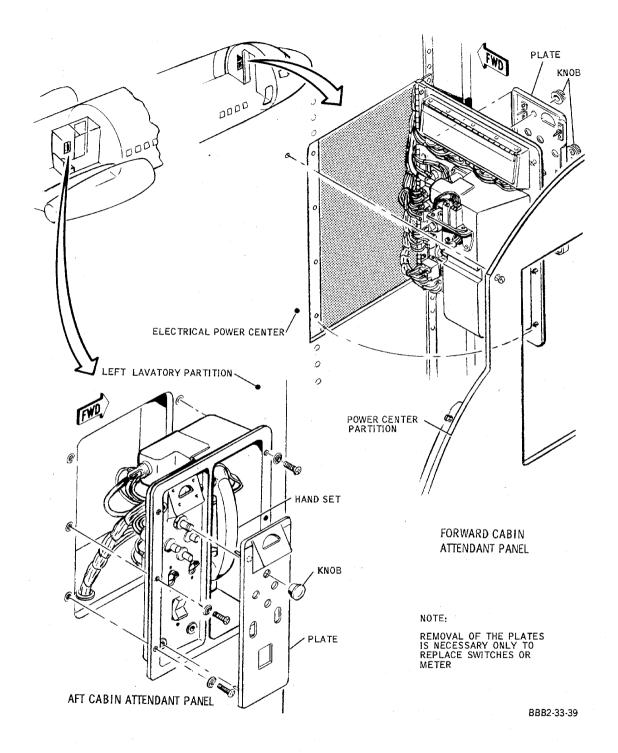
(12) Actuate appropriate switches to check proper operation of panel circuits.



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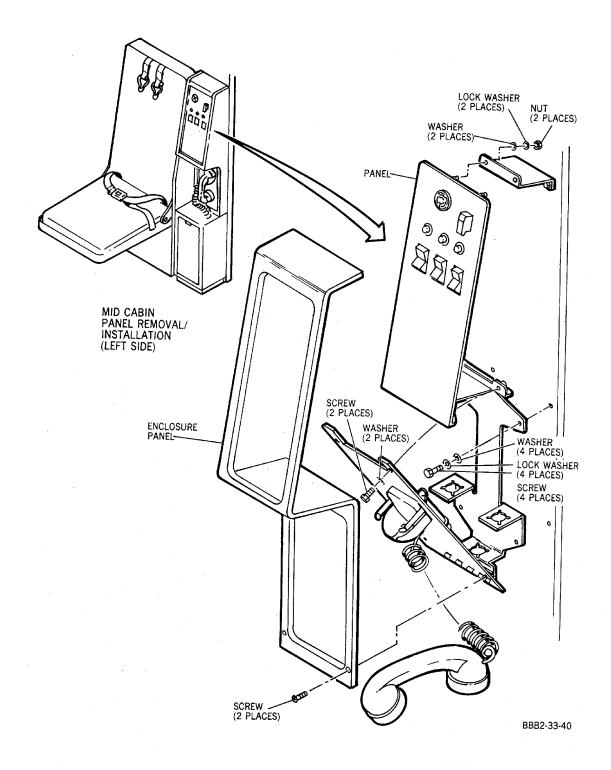
Cabin Panels -- Removal/Installation Figure 201/33-23-02-990-801 (Sheet 1 of 2)

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Cabin Panels -- Removal/Installation Figure 201/33-23-02-990-801 (Sheet 2 of 2)

EFFECTIVITY WJE 405, 409, 416, 420, 422, 424-427, 429, 861, 862, 868, 873-879, 884, 891 33-23-02

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### **CABIN PANELS - MAINTENANCE PRACTICES**

# 1. General

- A. The following procedures provide instructions for removing and installing the forward, mid and aft cabin attendant panels. Before performing maintenance on any component of a cabin panel, all circuit breakers relating to that panel should be opened to prevent electrical arcing.
- B. To prevent inadvertent activation of the emergency lights circuit, the emergency lights switches, on the overhead switch panel and the forward attendant's panel, should be in the off position before the emergency lights arm and charge circuit breaker is opened.

#### 2. Removal/Installation Cabin Panels

Row

A. Remove Cabin Panel/Component (Figure 201 or Figure 202 or Figure 203)

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

**CAUTION:** MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.

(1) Open these circuit breakers and install safety tags for forward attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-703	SIDEWALL LIGHTS - UPPER CONTROL
	B1-777 B1-522 B1-699

# LOWER EPC, DC TRANSFER BUS

	-, -		
<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
R	24	B1-124	DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

#### Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 16 B1-383 FWD PASSENGER ENTRANCE STAIR CONTROL

EFFECTIVITY WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

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WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893 (Continued)

(Continued)

#### OVERHEAD BATT DIR BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
WJE 410	)		
А	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 88 881, 883, 892, 893			
A	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
WJE 410	)		
A	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

#### OVERHEAD EMERGENCY DC BUS

Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 8 B10-118 PASSENGER ADDRESS

WJE 410

A 9 B10-118 PASSENGER ADDRESS

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

WJE 410

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, LEFT RADIO AC BUS

Row Col Number Name

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

F 19 B10-120 PASSENGER MUSIC

#### UPPER EPC, LEFT RADIO DC BUS

Row Col Number Name

G 19 B10-121 PASSENGER MUSIC

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row Col Number Name</u>

G 8 B10-65 SERVICE INTERPHONE

EFFECTIVITY WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

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Open these circuit breakers and install safety tags for aft attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>_</u>	<u>Col</u>	<u>Number</u>	Name	
		B1-376	AFT LEFT LAV MIRROR LIGHTS	
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS	
		B1-7	AFT RIGHT LAV MIRROR LIGHT	

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### OVERHEAD EMERGENCY DC BUS

#### Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 8 B10-118 PASSENGER ADDRESS

WJE 410

Row

A 9 B10-118 PASSENGER ADDRESS

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

WJE 410

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, RIGHT RADIO DC BUS

Row Col Number Name

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

G 8 B10-65 SERVICE INTERPHONE

Open these circuit breakers and install safety tags for mid cabin attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
		B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-360	GALLEY AREA WORK LIGHTS

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row Col Number Name

P 37 B1-8 CALL SYSTEM

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
G	8	B10-65	SERVICE INTERPHONE

- B. Remove forward attendant's panel as follows:
  - (1) Remove electrical power center partition to gain access to attendant panel.

EFFECTIVITY WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893



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TP-80MM-WJE



- (2) Remove hand set cradle unit to gain access to cradle housing attaching screws.
- (3) Remove housing attaching screws and swing panel open.
- (4) Disconnect and tag electrical connectors.

**CAUTION:** TO PREVENT DAMAGE TO PANEL WIRING AND COMPONENTS, SUPPORT PANEL WHEN ATTACHING SCREWS ARE REMOVED.

- (5) Remove attaching screws securing panel to hinge and remove panel.
- C. Remove mid attendant's panel as follows:
  - (1) Remove hand set cradle unit to gain access to cradle housing attaching screws.

# **CAUTION:** TO PREVENT DAMAGE TO PANEL WIRING AND COMPONENTS, SUPPORT PANEL WHEN ATTACHING SCREWS ARE REMOVED.

- (2) Remove attaching screws securing housing to partition brackets.
- (3) Pull out housing to gain access to electrical connectors.
- (4) Disconnect and tag electrical connector and remove panel.
- (5) Remove panel cover.
- D. Remove aft attendant's panel as follows:
  - (1) Remove attaching screws securing housing to partitions.
  - (2) Pull out housing to gain access to electrical connectors.
  - (3) Disconnect and tag electrical connectors and remove panel.
- E. Install Cabin Panel

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

**CAUTION:** MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.

(1) Make certain these circuit breakers are open and safety tags are installed for forward attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	Name
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
		B1-699	SIDEWALL LIGHTS - LOWER CONTROL
		B1-703	SIDEWALL LIGHTS - UPPER CONTROL

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

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#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

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

R 24 B1-124 DOOR WARNING

#### **OVERHEAD BATT DIR BUS**

#### Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

А	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

#### WJE 410

А	17	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
А	18	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE
			MOTORS-2

#### WJE 410

А	19	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE
			MOTORS-2

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

#### Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 8 B10-118 PASSENGER ADDRESS

WJE 410

A 9 B10-118 PASSENGER ADDRESS

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

WJE 410

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

#### UPPER EPC, LEFT RADIO AC BUS

#### Row Col Number Name

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

F 19 B10-120 PASSENGER MUSIC

#### UPPER EPC, LEFT RADIO DC BUS

Row Col Number Name

G 19 B10-121 PASSENGER MUSIC

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#### UPPER EPC, RIGHT RADIO DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE

Make certain these circuit breakers are open and install safety tags for aft attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

Row	Col	Number	Name
1.011	001	Humber	Manne

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 8 B10-118 PASSENGER ADDRESS

WJE 410

A 9 B10-118 PASSENGER ADDRESS

#### UPPER EPC, RIGHT RADIO DC BUS

Row Col Number Name

WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

G 8 B10-65 SERVICE INTERPHONE

- (2) Install forward attendant's panel as follows:
  - (a) Position panel on hinge and install attaching screws.
  - (b) Remove tags and connect electrical connectors.
  - (c) Swing panel close and install housing attaching screws.
  - (d) Install hand set cradle unit.
  - (e) Install power center partition.
- (3) Install mid attendant's panel as follows:
  - (a) Install panel cover on partition.
  - (b) Remove tags and connect electrical connectors.
- (4) Position housing on panel cover and install attaching screws to partition brackets.
- (5) Install hand set cradle unit.
- (6) Install aft attendant's panel as follows:
  - (a) Remove tags and connect electrical connectors.
  - (b) Position panel on partition and install attaching screws.
- (7) Do a check of the hinged bypass check valve flapper door for freedom of movement. (Operational Check of the Hinged Bypass Check Valve, TASK 21-20-00-710-801)



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- (8) Remove tags and close following applicable circuit breakers:
- F. Close circuit breakers and remove safety tags for aft attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-376	AFT LEFT LAV MIRROR LIGHTS
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-7	AFT RIGHT LAV MIRROR LIGHT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	Col	Number	Name

P 37 B1-8 CALL SYSTEM

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

Row Col Number Name

WJE 401-404, 406-408, 411, 412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

A 8 B10-118 PASSENGER ADDRESS

WJE 410

Row

A 9 B10-118 PASSENGER ADDRESS

#### UPPER EPC, RIGHT RADIO DC BUS

Row Col Number Name

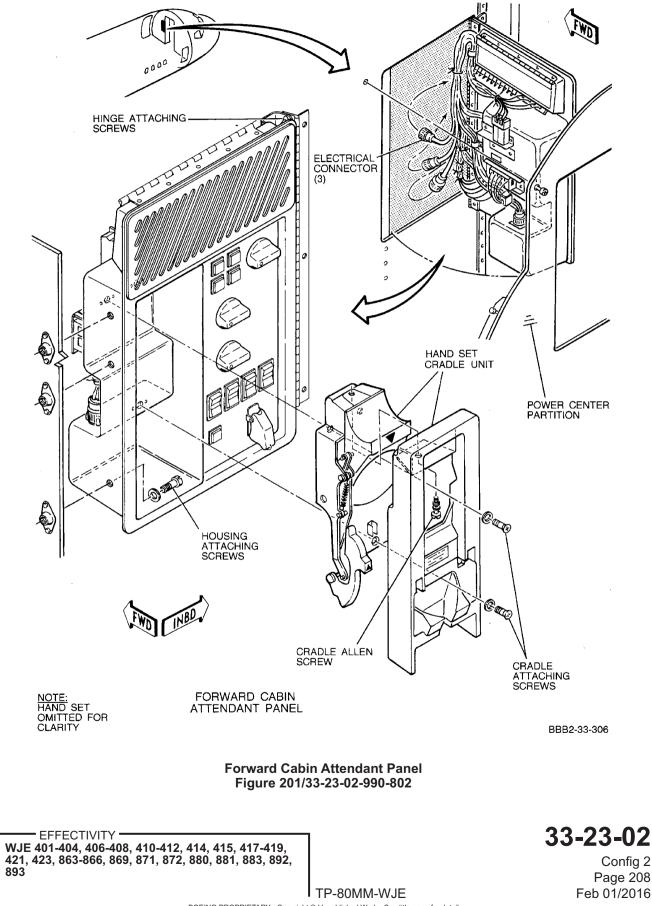
WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893 G 8 B10-65 SERVICE INTERPHONE

G. Actuate appropriate switches to check proper operation of panel circuits.

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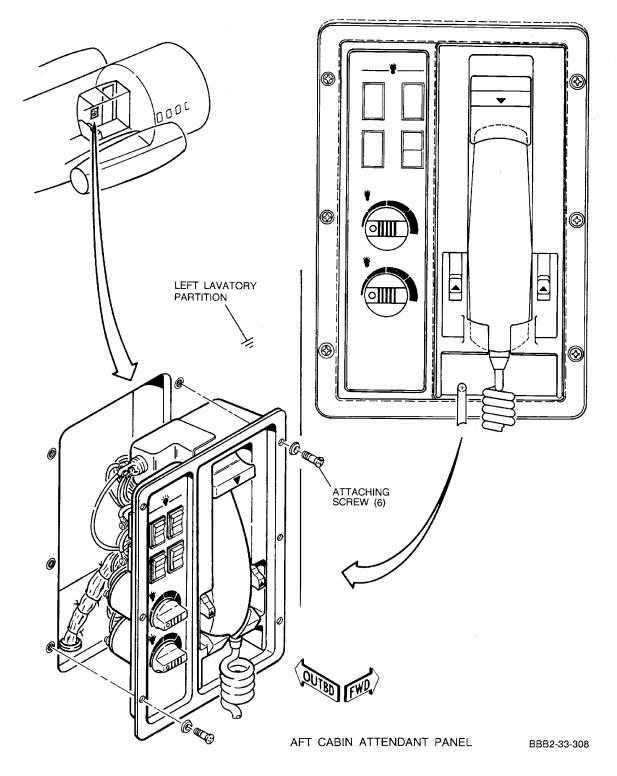


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Aft Cabin Attendant Panel Figure 202/33-23-02-990-803

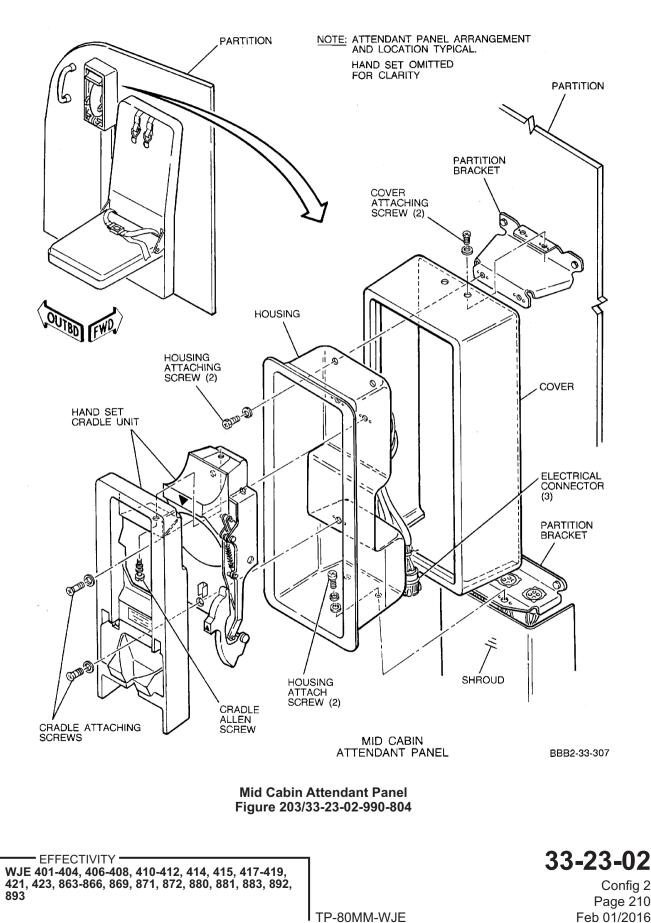
EFFECTIVITY WJE 401-404, 406-408, 410-412, 414, 415, 417-419, 421, 423, 863-866, 869, 871, 872, 880, 881, 883, 892, 893

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# **CABIN PANELS - MAINTENANCE PRACTICES**

# 1. General

- A. The following procedures provide instructions for removing and installing the forward, mid and aft cabin attendant panels. Before performing maintenance on any component of a cabin panel, all circuit breakers relating to that panel should be opened to prevent electrical arcing.
- B. To prevent inadvertent activation of the emergency lights circuit, the emergency lights switches, on the overhead switch panel and the forward attendant's panel, should be in the off position before the emergency lights arm and charge circuit breaker is opened.

# 2. <u>Removal/Installation Cabin Panels</u>

A. Remove Cabin Panel.

Row

(Figure 201)

- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- **CAUTION:** MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.
- (1) Open these circuit breakers and install safety tags for forward attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

Number	Name
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-703	SIDEWALL LIGHTS - UPPER CONTROL
	B1-777 B1-522 B1-699

# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row Col Number Name

R 24 B1-124 DOOR WARNING

# **OVERHEAD BATT DIR BUS**

<u>Row Col Number Name</u>

A 16 B1-383 FWD PASSENGER ENTRANCE STAIR CONTROL

WJE 886, 887

33-23-02

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For Instructional Use Only



(Continued)

# **OVERHEAD BATT DIR BUS**

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

A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE
А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

# **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

# UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

# UPPER EPC, LEFT RADIO DC BUS

Row Col Number Name

G 19 B10-121 PASSENGER MUSIC

#### UPPER EPC, RIGHT RADIO DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE

Open these circuit breakers and install safety tags for aft attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
		D4 070	

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY
	OCCUPIED LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
А	8	B10-118	PASSENGER ADDRESS

# UPPER EPC, RIGHT RADIO DC BUS

Row Col Number Name

G 8 B10-65 SERVICE INTERPHONE

- B. Remove forward attendant's panel as follows:
  - (1) Remove electrical power center partition to gain access to attendant panel.
  - (2) Remove hand set cradle unit to gain access to cradle housing attaching screws.
  - (3) Remove housing attaching screws and swing panel open.

WJE 886, 887

33-23-02

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(4) Disconnect and tag electrical connectors.

CAUTION: TO PREVENT DAMAGE TO PANEL WIRING AND COMPONENTS, SUPPORT PANEL WHEN ATTACHING SCREWS ARE REMOVED.

(5) Remove attaching screws securing panel to hinge and remove panel.

- C. Remove aft attendant's panel as follows:
  - (1) Remove attaching screws securing housing to partitions.
  - (2) Pull out housing to gain access to electrical connectors.
  - (3) Disconnect and tag electrical connectors and remove panel.
- D. Install Cabin Panel

Row

Col

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

CAUTION: MAKE CERTAIN CABIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION BEFORE OPENING EMERGENCY LIGHTS ARM AND CHARGE CIRCUIT BREAKER.

(1) Make certain these circuit breakers are open and safety tags are installed for forward attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Number</u>	Name
B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT
B1-699	SIDEWALL LIGHTS - LOWER CONTROL
B1-703	SIDEWALL LIGHTS - UPPER CONTROL

# LOWER EPC. DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYST

CALL SYSTEM 37 B1-8

# LOWER EPC, MISCELLANEOUS RIGHT DC BUS

- Row Col Number Name
- R 24 B1-124 DOOR WARNING

# **OVERHEAD BATT DIR BUS**

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

А 16 B1-383 FWD PASSENGER ENTRANCE STAIR CONTROL

EFFECTIVITY WJE 886, 887

33-23-02

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(Continued)

# OVERHEAD BATT DIR BUS

Row	Col	Number	Name

A	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE
А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

# **OVERHEAD EMERGENCY DC BUS**

Row	<u>Col</u>	<u>Number</u>	Name
А	8	B10-118	PASSENGER ADDRESS
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

# UPPER EPC, LEFT RADIO AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

# UPPER EPC, LEFT RADIO DC BUS

Row Col Number Name

G 19 B10-121 PASSENGER MUSIC

#### UPPER EPC, RIGHT RADIO DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE

Make certain these circuit breakers are open and install safety tags for aft attendant's panel:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row Col Number Name</u>

B1-376	AFT LEFT LAV MIRROR LIGHTS
B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
B1-7	AFT RIGHT LAV MIRROR LIGHT

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

RowColNumberNameP37B1-8CALL SYSTEM

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
А	8	B10-118	PASSENGER ADDRESS

#### UPPER EPC, RIGHT RADIO DC BUS

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

G 8 B10-65 SERVICE INTERPHONE

- (2) Install forward attendant's panel as follows:
  - (a) Position panel on hinge and install attaching screws.
  - (b) Remove tags and connect electrical connectors.
  - (c) Swing panel close and install housing attaching screws.

WJE 886, 887

33-23-02

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- (d) Install hand set cradle unit.
- (e) Install power center partition.
- (3) Install aft attendant's panel as follows:
  - (a) Remove tags and connect electrical connectors.
  - (b) Position panel on partition and install attaching screws.
- (4) Do a check of the hinged bypass check valve flapper door for freedom of movement. (Operational Check of the Hinged Bypass Check Valve, TASK 21-20-00-710-801)
- (5) Remove tags and close following applicable circuit breakers:
- E. Close circuit breakers and remove safety tags for forward attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

-				
	<u>Col</u>	<u>Number</u>	Name	
		B1-777	FWD MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS	
		B1-522	LAVATORY MIRROR LIGHTS - FWD LEFT	
		B1-699	SIDEWALL LIGHTS - LOWER CONTROL	
		B1-703	SIDEWALL LIGHTS - UPPER CONTROL	

# LOWER EPC, DC TRANSFER BUS

Row

Row	<u>Col</u>	<u>Number</u>	Name
Z	34	B1-381	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
Z	35	B1-382	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2
Z	36	B1-379	FWD PASSENGER ENTRANCE STAIR CONTROL
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

#### LOWER EPC, MISCELLANEOUS RIGHT DC BUS

Row	<u>Col</u>	Number	<u>Name</u>
R	24	B1-124	DOOR WARNING

# **OVERHEAD BATT DIR BUS**

Row	<u>Col</u>	<u>Number</u>	Name
А	16	B1-383	FWD PASSENGER ENTRANCE STAIR CONTROL
А	17	B1-385	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-1
А	18	B1-386	FWD PASSENGER ENTRANCE STAIR CARRIAGE MOTORS-2

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

<u>Row</u>	<u>Col</u>	Number	Name
А	8	B10-118	PASSENGER ADDRESS

WJE 886, 887



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# UPPER EPC, LEFT RADIO AC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	19	B10-120	PASSENGER MUSIC

# UPPER EPC, LEFT RADIO DC BUS

Row Col Number Name

G 19 B10-121 PASSENGER MUSIC

# UPPER EPC, RIGHT RADIO DC BUS

Row

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
G	8	B10-65	SERVICE INTERPHONE

F. Close circuit breakers and remove safety tags for aft attendant's panel:

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-376	AFT LEFT LAV MIRROR LIGHTS
	B1-778	AFT MISCELLANEOUS CABIN AND LAVATORY OCCUPIED LIGHTS
	B1-7	AFT RIGHT LAV MIRROR LIGHT

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ρ	37	B1-8	CALL SYSTEM

# **OVERHEAD EMERGENCY DC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
А	8	B10-118	PASSENGER ADDRESS

# UPPER EPC, RIGHT RADIO DC BUS

Row Col Number Name

G 8 B10-65 SERVICE INTERPHONE

G. Actuate appropriate switches to check proper operation of panel circuits.

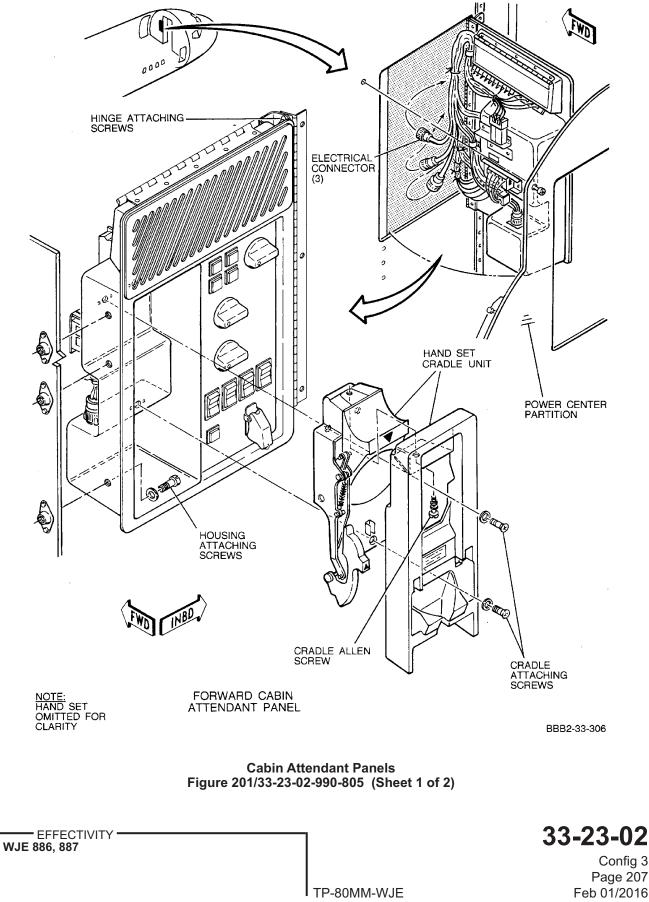
WJE 886, 887

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Config 3 Page 206 Feb 01/2016

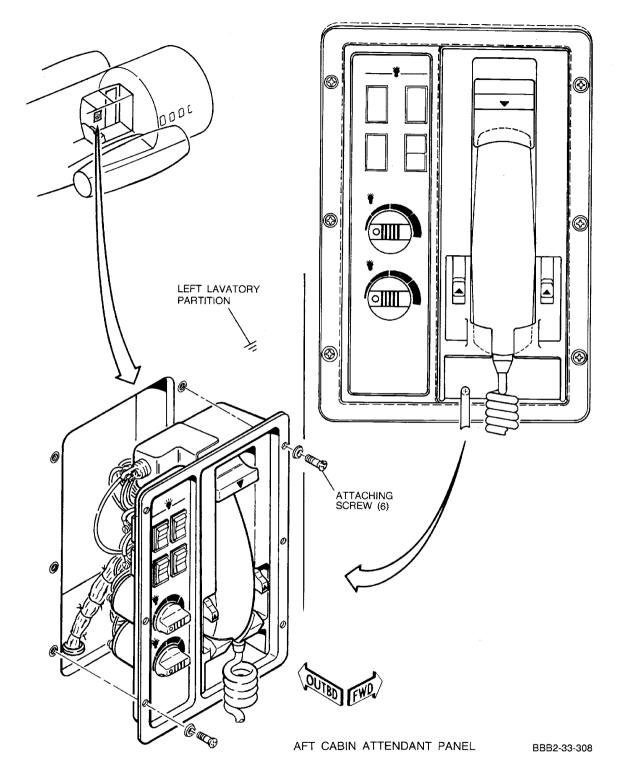


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MD-80 AIRCRAFT MAINTENANCE MANUAL



Cabin Attendant Panels Figure 201/33-23-02-990-805 (Sheet 2 of 2)

EFFECTIVITY **WJE 886, 887** 





# CALL SYSTEM COMPONENTS - REMOVAL/INSTALLATION

# 1. General

- A. The following procedures provide instructions for removing and installing the master call lights and passenger call switches. To remove call system components installed on the overhead switch panel or attendants' panels, (Ref. GENERAL, SUBJECT 31-00-00 and CABIN PANELS, SUBJECT 33-23-02).
- B. Most of the call lights fixtures can be relamped by removing the lens; however, it is recommended that the removal/ installation procedures be followed when relamping the master call lights.

#### 2. Removal/Installation Call System Components

A. Remove Master Call Lights

WARNING: TAG AND SAFETY CIRCUIT BREAKER.

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

LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row Col Number Name

P 37 B1-8 CALL SYSTEM

- (2) Release fasteners on drop ceiling access door to gain access to master call lights fixture.
- (3) Remove cover from fixture and remove lamps.
- (4) Disconnect electrical wiring.
- (5) Remove fixture attaching screws and remove fixture.
- B. Install Master Call Lights

# WARNING: TAG AND SAFETY CIRCUIT BREAKER.

(1) Make sure that this circuit breaker is open and has safety tag:

LOWER EPC, MISCELLANEOUS LEFT DC BUS

Row Col Number Name

P 37 B1-8 CALL SYSTEM

(2) Position fixture on access door and install attaching screws.

NOTE: When installing forward fixture, secure door retaining cord with fixture attaching screw.

- (3) Connect electrical wiring.
- (4) Position access door in ceiling and secure fasteners.
- (5) Remove the safety tag and close this circuit breaker:

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

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

- P 37 B1-8 CALL SYSTEM
- (6) Actuate appropriate call switches to check proper operation of master call lights (Ref. CALL SYSTEM COMPONENTS CHECK, PAGEBLOCK 33-23-03/601).
- C. Remove Passenger Call Switch

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WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

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

P 37 B1-8 CALL SYSTEM	Р	37 B1-8	CALL SYSTEM
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# **UPPER EPC, LIGHTS - LEFT AC BUS**

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
K	20	B1-489	PASSENGER READING-FWD
K	21	B1-296	PASSENGER READING - CENTER
K	22	B1-490	PASSENGER READING-AFT

- (2) Remove call switch lens and lamp.
- (3) Open applicable passenger utility box door.
- (4) Disconnect electrical wiring from switch.
- (5) Loosen switch lock nut on back side of utility box door.
- (6) Remove finish nut from face of door and remove switch.
- D. Install Passenger Call Switch

# WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

# LOWER EPC, MISCELLANEOUS LEFT DC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Р	37	B1-8	CALL SYSTEM

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

Row	<u>Col</u>	<u>Number</u>	Name
K	20	B1-489	PASSENGER READING-FWD
K	21	B1-296	PASSENGER READING - CENTER
K	22	B1-490	PASSENGER READING-AFT

- (2) Position call switch in passenger utility box door and install finish nut.
- (3) Tighten switch lock nut against back side of door to secure switch.
- (4) Connect electrical wiring to switch and close door.
- (5) Install lamp and lens.
- (6) Remove the safety tags and close these circuit breakers:

#### LOWER EPC, MISCELLANEOUS LEFT DC BUS

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

Ρ	37	B1-8	CALL SYSTEM
	0.	BIU	OF ILL OF OF LIN

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

#### Row Col Number Name

K	20	B1-489	PASSENGER READING-FWD
K	21	B1-296	PASSENGER READING - CENTER
Κ	22	B1-490	PASSENGER READING-AFT

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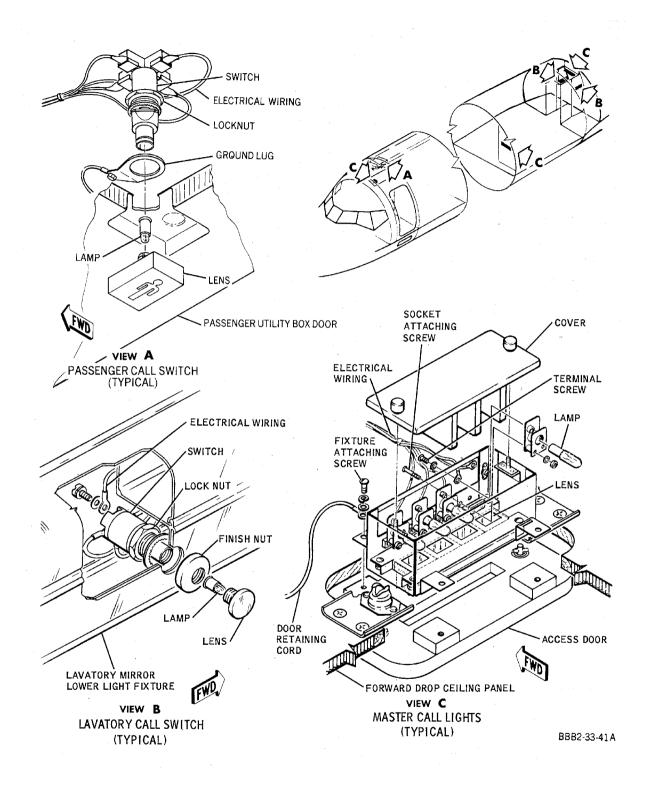
- (7) Actuate switch to check proper operation of circuit (Ref. CALL SYSTEM COMPONENTS CHECK, PAGEBLOCK 33-23-03/601).
- E. Remove Lavatory Call Switch
  - (1) Remove lavatory mirror lower light fixture (Ref. UTILITY LIGHTS, SUBJECT 33-22-01).
  - (2) Remove call switch lens and lamp.
  - (3) Disconnect electrical wiring from switch.
  - (4) Loosen switch lock nut inside fixture.
  - (5) Remove finish nut from face of fixture and remove switch.
- F. Install Lavatory Call Switch
  - (1) Position call switch in lavatory mirror lower light fixture and install finish nut.
  - (2) Tighten switch lock nut inside fixture to secure switch.
  - (3) Connect electrical wiring to switch.
  - (4) Install lavatory mirror lower light fixture (Ref. UTILITY LIGHTS, SUBJECT 33-22-01).
  - (5) Actuate switch and check proper operation of circuit (Ref. CALL SYSTEM COMPONENTS CHECK, PAGEBLOCK 33-23-03/601).

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#### Call System Components -- Removal/Installation Figure 401/33-23-03-990-801

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33-23-03

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# **CALL SYSTEM COMPONENTS - CHECK**

# 1. General

A. The following procedures provide a functional check of the call system. As each call switch is actuated, specific colored master call lights should come on and a momentary chime tone should be audible at the cabin speakers located at the attendants' stations. (Ref. COMMUNICATIONS, CHAPTER 23)

# 2. Check Call System Components

- A. Check Call System Components
  - (1) Actuate attendant call switch in flight compartment. Pink master call lights should come on and high-low (bing-bong) chime tone should be audible.

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

(2) Remove and return handset to cradle on either attendant's panel and lights should go off.

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

(3) Press reset switch on either attendant's panel; lights should go off.

# WJE ALL

- (4) Check call switch at each attendant's panel as outlined in steps above.
- (5) Actuate call switch in lavatory. Amber master call lights, call light outside lavatory door, and integral light in switch should come on. High (bing) chime tone should be audible.
- (6) Push call switch in lavatory; lights should go off.

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

(7) Perform the above step at each lavatory location.

#### WJE ALL

- (8) Actuate call switch at passenger seat. Blue master call lights and integral light in switch should come on. High (bing) chime tone should be audible.
- (9) Push call switch at passenger seat; lights should go off.

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

(10) Perform the above step at each seat location.

#### WJE ALL

- (11) Actuate pilot call switch on forward attendant's panel; blue call light on overhead switch panel should come on.
- (12) Push the ATTND CALLING RESET switch on the cockpit overhead panel; blue call light on overhead switch panel should go off.

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

(13) Perform the above step at each attendant's panel.

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# CARGO AND SERVICE COMPARTMENT LIGHTS - DESCRIPTION AND OPERATION

# 1. General

# WJE 410

A. The cargo and service compartment lights are installed in the various compartments and accessory areas to facilitate cargo loading, area inspection, and servicing. Control switches are located in most of the compartments adjacent to the access doors. The cargo compartment lights can also be operated by the inspection light switches, located directly beneath the cargo compartment access doors in the passenger compartment floor, at stations 351, 560, and 1049. The nose wheelwell and forward accessory compartment lights are controlled by the switch on the external power receptacle panel. The main wheelwell lights are controlled by switches on the external power receptacle panel and another adjacent to the viewing port in the passenger compartment floor. A separate switch installed in the electrical/electronic compartment controls the lights for this area. The water service panel light switch is installed on the water service panel. Lights located in the tail section area and aft accessory compartment can be operated by either of two switches. Both light assemblies incorporate emergency lights.

(EMERGENCY LIGHTS, SUBJECT 33-53-00)

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

B. The cargo and service compartment lights are installed in the various compartments and accessory areas to facilitate cargo loading, area inspection, and servicing. Control switches are located in most of the compartments adjacent to the access doors. The cargo compartment lights can also be operated by the inspection light switches, located directly beneath the cargo compartment access doors in the passenger compartment floor, at stations 408R, 674R, and 1193R. The nose wheelwell and forward accessory compartment lights are controlled by the switch on the external power receptacle panel. The main wheelwell lights are controlled by switches on the external power receptacle panel and another adjacent to the viewing port in the passenger compartment floor. A separate switch installed in the electrical/electronic compartment controls the lights for this area. The water service panel light switch is installed on the water service panel. Lights located in the tail section area and aft accessory compartment can be operated by either of two switches. Both light assemblies incorporate emergency lights.

(EMERGENCY LIGHTS, SUBJECT 33-53-00)

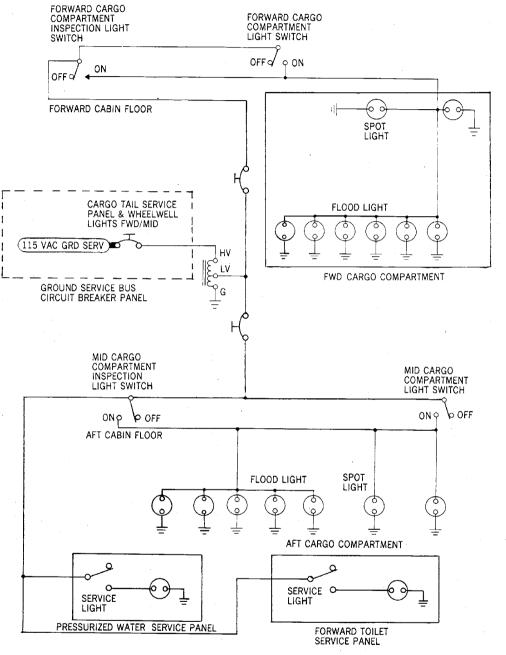
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#### Cargo Compartment Lights -- Simplified Schematic Figure 1/33-30-00-990-806 (Sheet 1 of 2)

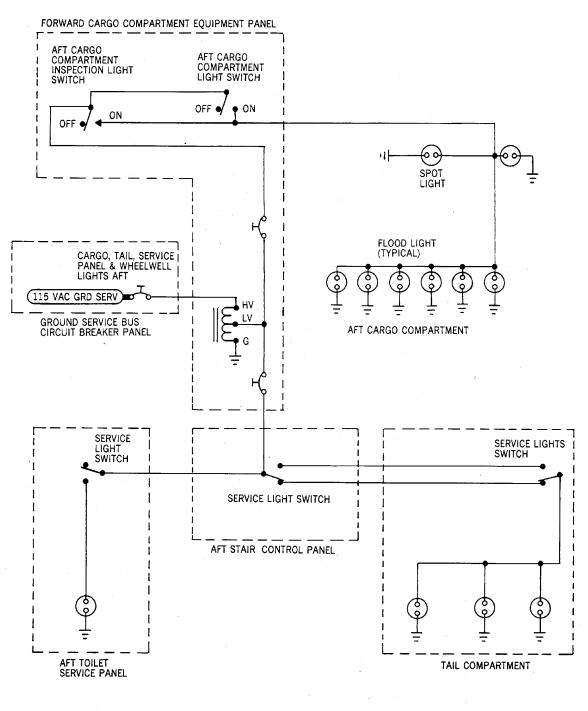
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#### Cargo Compartment Lights -- Simplified Schematic Figure 1/33-30-00-990-806 (Sheet 2 of 2)

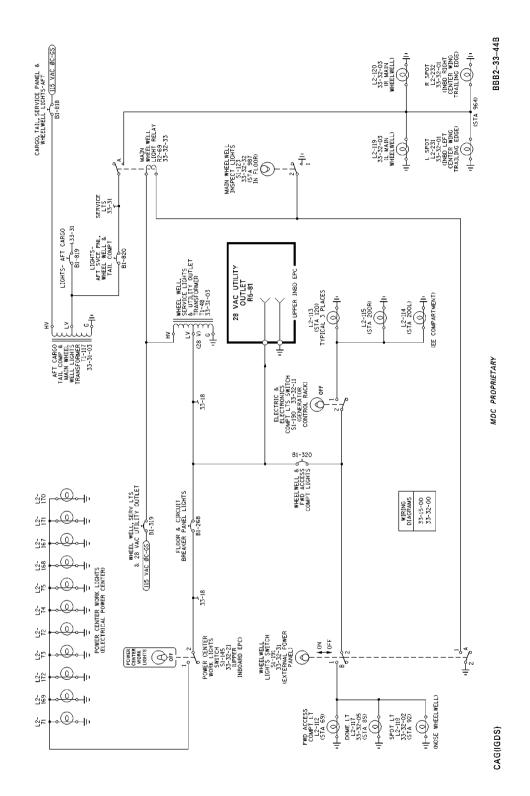
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Wheelwell and Service Lights - Simplified Schematic Figure 2/33-30-00-990-807

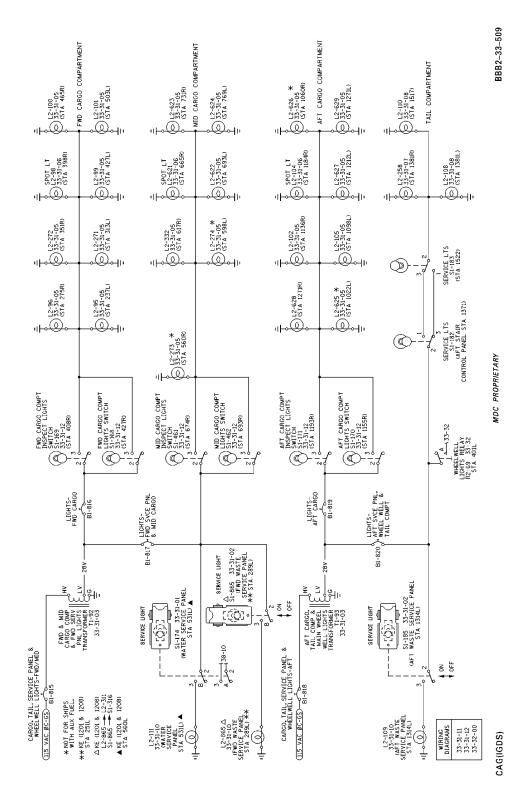
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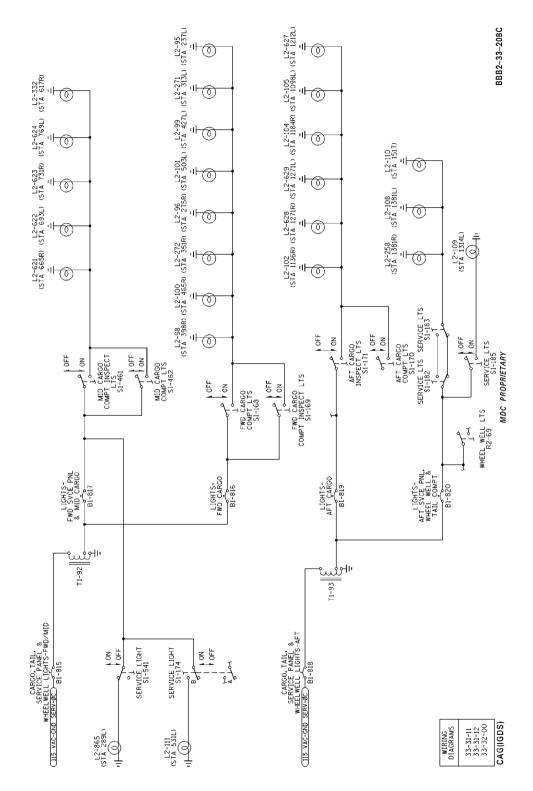
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#### **CARGO AND SERVICE COMPARTMENT LIGHTS - MAINTENANCE PRACTICES**

# 1. General

- A. This procedure has the maintenance practices for cargo service compartment lights.
- B. The cargo service compartment lights consist of cargo compartment, accessory compartment, electrical/electronic compartment, wheelwell and water service panel lights.

#### 2. Removal/Installation Cargo and Service Compartment Lights

A. Remove Cargo and Service Compartment Lights

# WARNING: TAG AND SAFETY CIRCUIT BREAKER.

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

# **EE COMPARTMENT**

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
		B1-320	WHEELWELL & FWD ACCESS COMPT LIGHTS

# LEFT CONSOLE, GROUND SERVICE BUS

# Row Col Number Name

B1-818	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS AFT
B1-815	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS FWD/MID
B1-319	WHEELWELL SERV LTS & 28 VAC UTILITY OUTLET

- (2) Gain access to lamp and attaching screws.
- (3) Remove lens/cover from fixture. On nose wheelwell light, remove retaining ring.
- (4) Remove lamp.
- (5) If necessary, remove the main gear wheelwell dome light assembly.
- (6) For main landing gear inspection lights, socket may also be removed at this time by depressing detent with pin. Wire should be disconnected and tagged.
- (7) Remove screws which attach fixture.
- (8) Disconnect and tag electrical wiring.
- (9) Remove light fixture.
- B. Install Cargo and Service Compartment Lights

# WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

#### **EE COMPARTMENT**

Row

# <u>Col Number Name</u>

B1-320 WHEELWELL & FWD ACCESS COMPT LIGHTS

# LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	Name
		B1-818	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS AFT
		B1-815	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS FWD/MID
		B1-319	WHEELWELL SERV LTS & 28 VAC UTILITY OUTLET

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33-30-00

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- (2) Connect electrical wiring to fixture.
  - <u>NOTE</u>: For main landing gear inspection lights, wire can be connected to socket after fixture is installed in aircraft.

#### WJE ALL POST MD80-33-104

(3) To replace the main landing gear dome light assembly, install P/N 09033120-1 dome light assembly.

#### WJE ALL

- (4) Position fixture and install attaching screws.
- (5) For main landing gear inspection lights only, connect electrical wire to socket. Install socket in housing; detent must be seated in detent index hole.
- (6) Install lamp.
- (7) Install lens/cover on fixture. On nose wheelwell light, install retaining ring.
- (8) When a service light lamp is replaced, it is recommended to inspect the three (3) lens cover retaining clips located inside the light assembly to ensure the clips are not broken, bent or loose before reinstalling the lens cover.
  - (a) If a broken, bent or loose retainer clip is observed, it is recommended that the service light assembly be replaced. This will ensure that the lens cover is securely installed on the service light assembly.
- (9) Remove the safety tags and close these circuit breakers:

#### **EE COMPARTMENT**

Row	<u>Col</u>	<u>Number</u>	Name
		B1-320	WHEELWELL & FWD ACCESS COMPT LIGHTS

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-818	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS AFT
		B1-815	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS FWD/MID
		B1-319	WHEELWELL SERV LTS & 28 VAC UTILITY OUTLET

- (10) Place appropriate switch in the ON position to check proper operation of lights.
- (11) Focus landing gear inspection lights to illuminate stripes on landing gear overcenter links with landing gear in down and locked position.

#### 3. Removal/Installation Service Panel Lights

A. Remove Service Panel Lights

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

# Row Col Number Name B1-818 CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS AFT B1-815 CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS FWD/MID

(2) Open service panel access door.

WJE ALL

33-30-00

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- (3) Remove light cap and lamp.
- (4) Remove attaching screws and lift light and switch mounting plate from panel.

<u>NOTE</u>: Access can be gained to back of fuel service panel by loosening fasteners and swinging hinged panel down.

- (5) Disconnect and tag electrical wiring.
- (6) Remove light socket and/or switch from mounting plate.
- B. Install Service Panel Lights

# **WARNING:** TAG AND SAFETY CIRCUIT BREAKERS.

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

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
		B1-818	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS AFT
		B1-815	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS FWD/MID

- (2) Install light socket and/or switch on mounting plate.
- (3) Connect electrical wiring to light socket and/or switch.
- (4) Position light and switch mounting plate and secure with screws/fasteners.
- (5) Install lamp and light cap.

<u>Row</u>

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

# LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-818	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS AFT
	B1-815	CARGO, TAIL, SERVICE PANEL & WHEELWELL LIGHTS FWD/MID

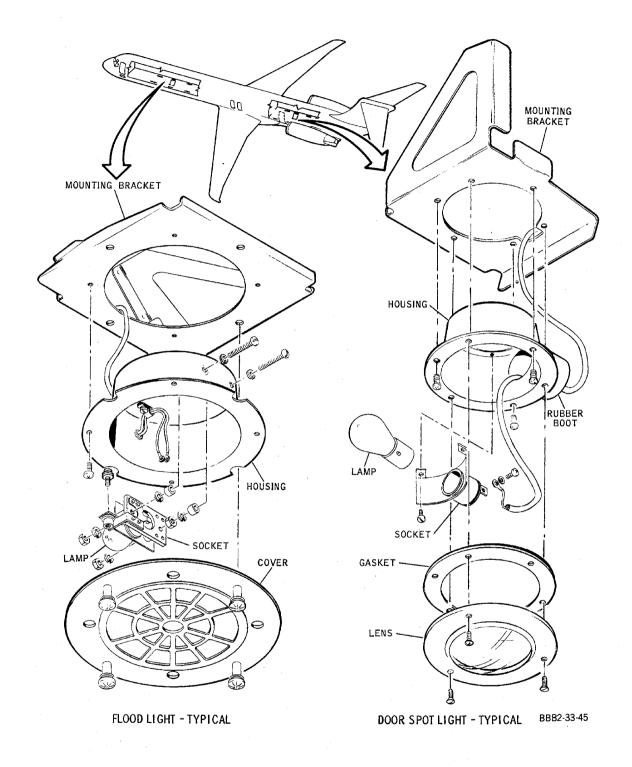
- (7) Place appropriate switch in on position to check proper operation of lights.
- (8) Close and secure service panel access doors.

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# Cargo Compartment Lights -- Removal/Installation Figure 201/33-30-00-990-801

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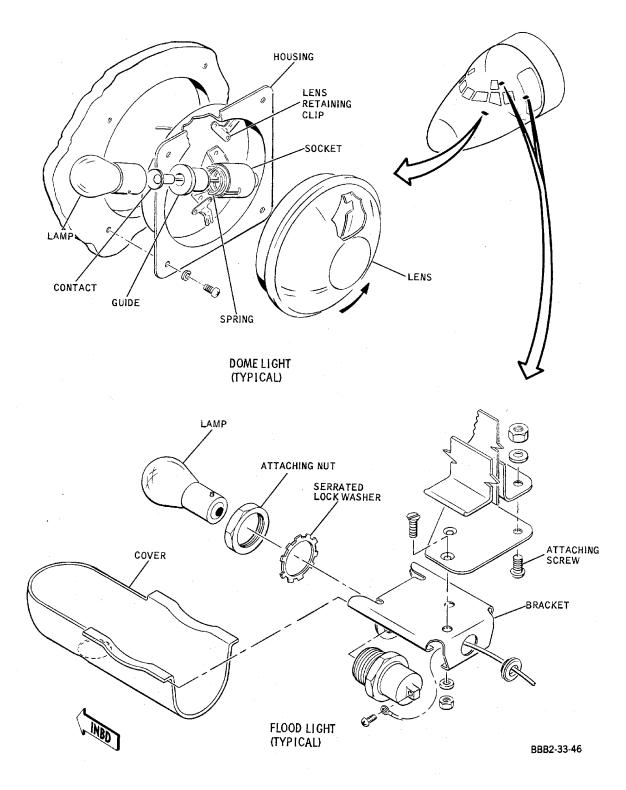
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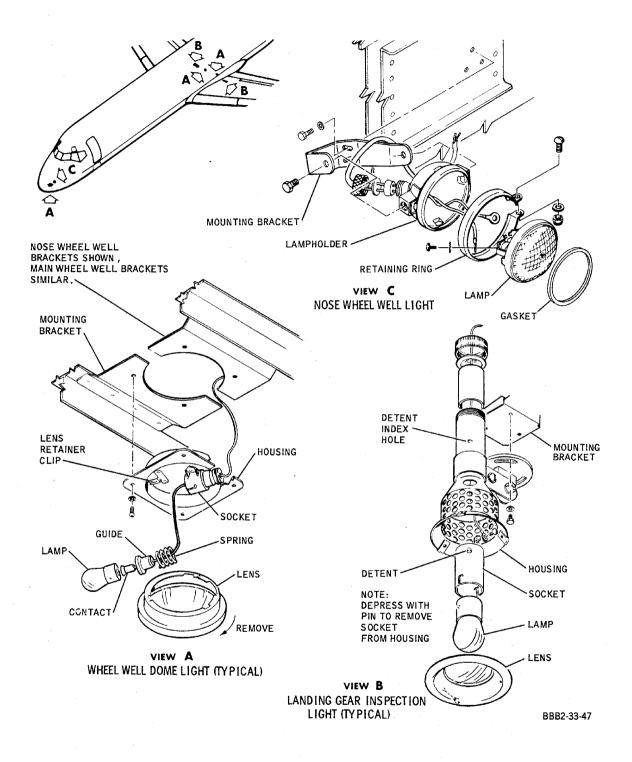
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# Wheelwell Lights -- Removal/Installation Figure 203/33-30-00-990-803

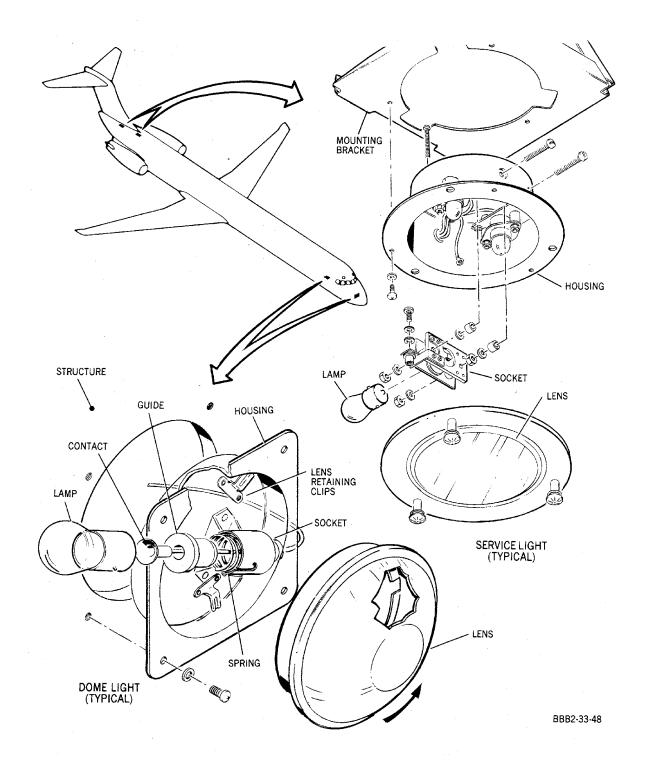
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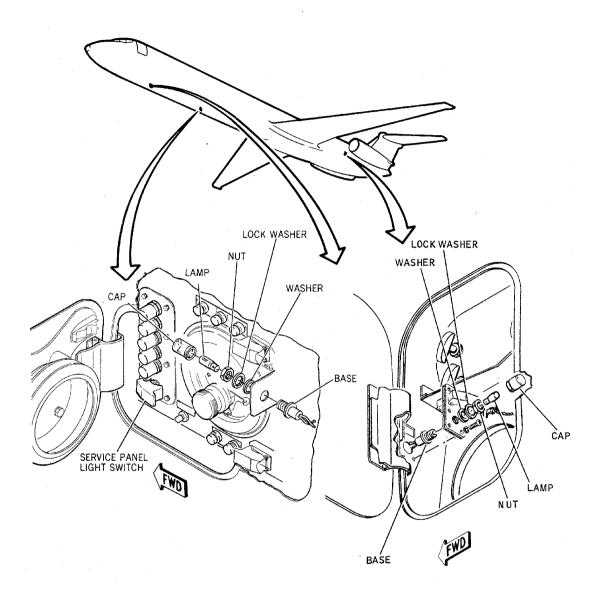
# Accessory Compartment Lights -- Removal/Installation Figure 204/33-30-00-990-804

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WATER SERVICE PANEL

TOILET SERVICE PANEL

BBB2-33-49A

# Service Panel Lights -- Removal/Installation Figure 205/33-30-00-990-805

EFFECTIVITY

33-30-00

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#### **CARGO AND SERVICE COMPARTMENT LIGHTS - ADJUSTMENT/TEST**

# 1. General

A. This procedure contains MSG-3 task card data.

# TASK 33-30-00-710-801

# 2. Operational Check of the Main Wheel Well Lights Using the Cabin Floor Switch

A. Prepare for the Operational Check of the Main Wheel Well Lights Using the Cabin Floor Switch

SUBTASK 33-30-00-010-001

- (1) Pull back the carpet above the left wheel well and remove the cover.
- B. Operational Check of the Main Wheel Well Lights Using the Cabin Floor Switch

# SUBTASK 33-30-00-710-001

- (1) Do the operational check of the main wheel well lights using the cabin floor switch.
  - (a) Place and hold the light switch to the on position.
  - (b) Make sure the left and right wheel well lights come on.
  - (c) Release the switch and make sure both the left and right wheel well lights are off.

# C. Job Close up

SUBTASK 33-30-00-410-001

(1) Close cover and reinstall carpet.

SUBTASK 33-30-00-942-001

(2) Remove all the tools and equipment from the work area. Make sure the area is clean.

— END OF TASK ———

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# **EXTERIOR LIGHTS - DESCRIPTION AND OPERATION**

# 1. General

A. The exterior lights provide, through separate controls, a high-intensity light pattern that can be modified selectively to meet requirements of lighting in adverse weather conditions.

#### WJE 409, 873, 874, 884, 892, 893

B. The lights consist of landing and taxi lights, anticollision recognition lights, forward and aft position lights, ground floodlights, wing and nacelle scanning lights, and passenger forward entrance door stair lights.

#### WJE 401-408, 410-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 886, 887, 891

C. The lights consist of landing and taxi lights, anticollision recognition lights, forward and aft position lights, ground floodlights, wing and nacelle scanning lights, passenger forward entrance door stair lights, and logo lights.

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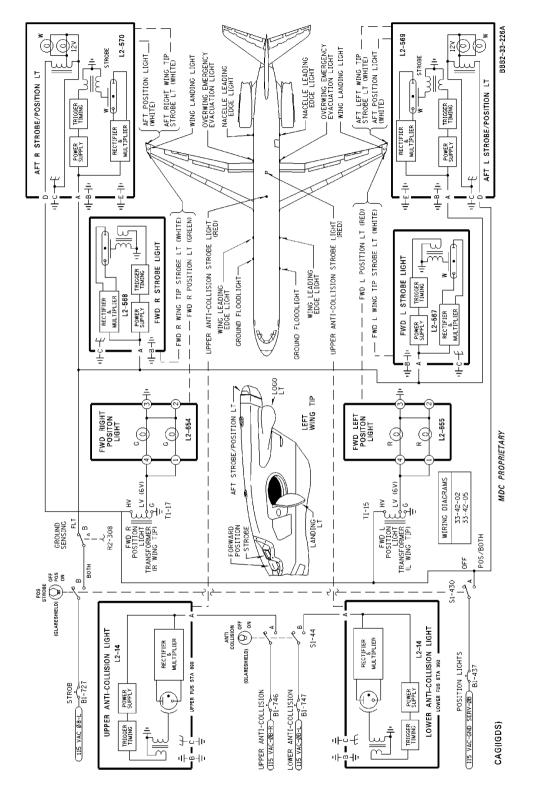
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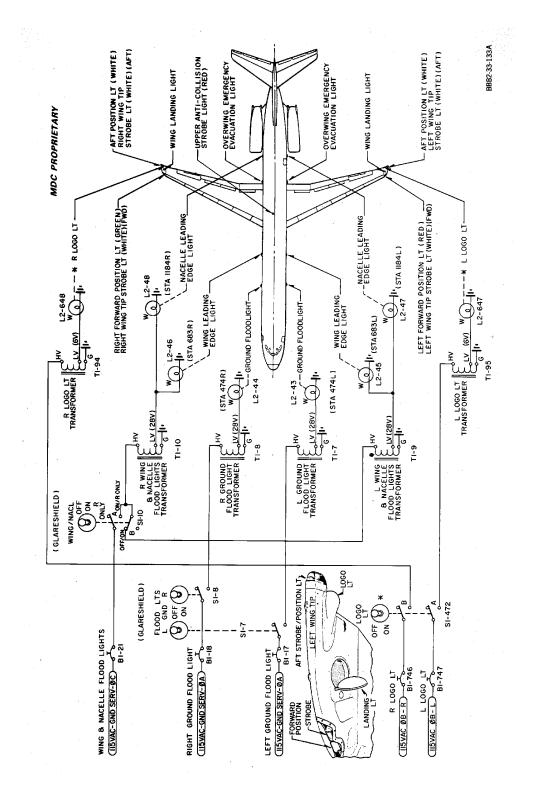
Logo, Wing, Nacelle and Ground Floodlights - Schematic Figure 1/33-40-00-990-801

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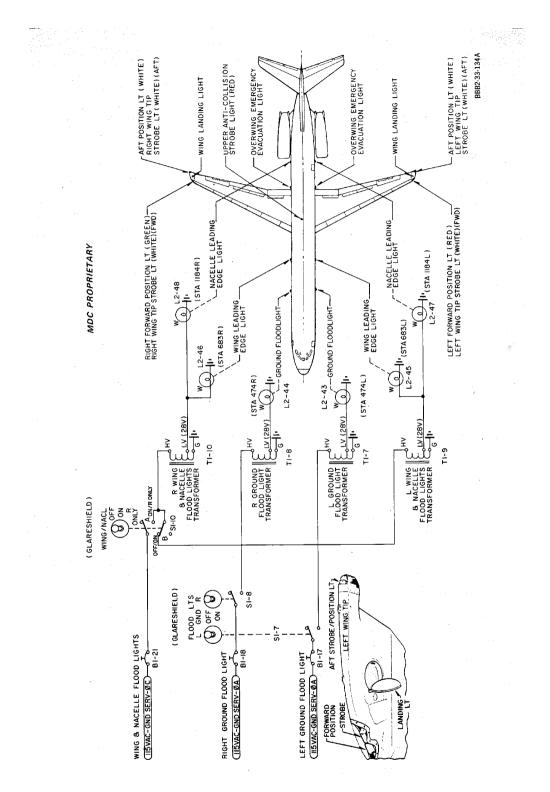
Wing, Nacelle, Position and Ground Floodlights Figure 2/33-40-00-990-805 (Sheet 1 of 3)

EFFECTIVITY WJE 401-408, 410-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 886, 887, 891 33-40-00

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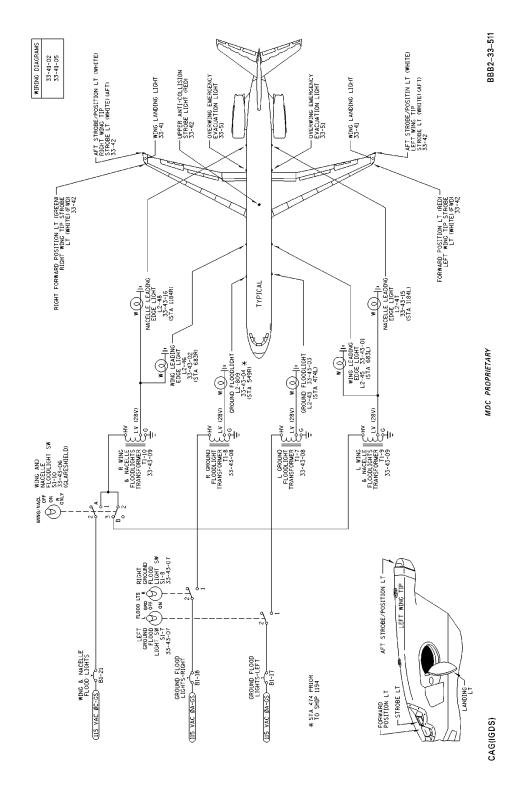
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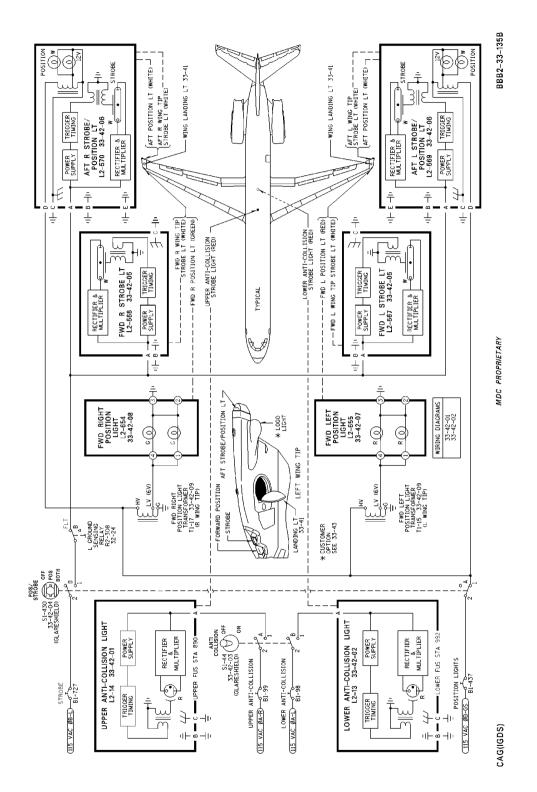


Wing, Nacelle, Position and Ground Floodlights Figure 2/33-40-00-990-805 (Sheet 3 of 3)

EFFECTIVITY WJE 401-408, 410-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 886, 887, 891-893 33-40-00

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Anti-Collision and Position Lights - Schematic Figure 3/33-40-00-990-806 (Sheet 1 of 2)

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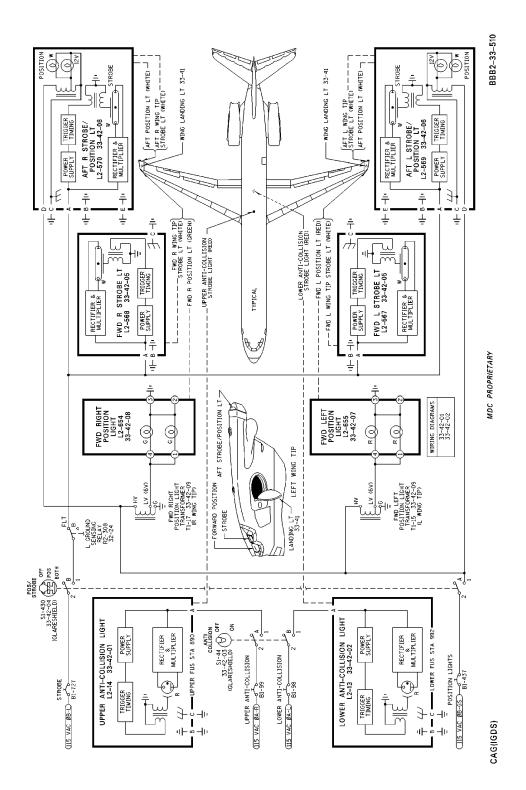
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Anti-Collision and Position Lights - Schematic Figure 3/33-40-00-990-806 (Sheet 2 of 2)

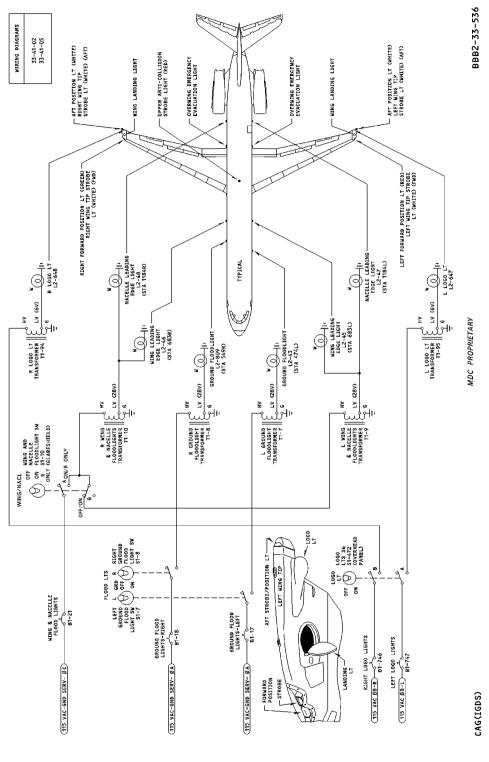
EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893



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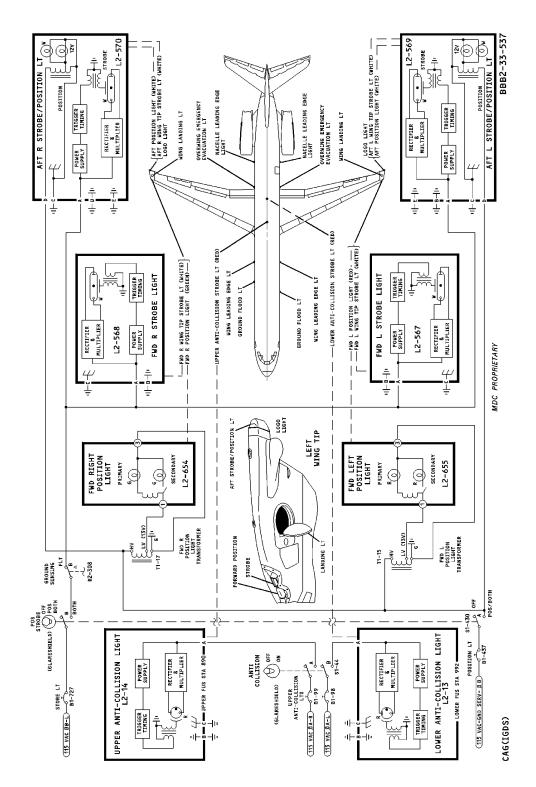


Exterior Lights - Schematic Diagram Figure 4/33-40-00-990-808 (Sheet 1 of 2)

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Exterior Lights - Schematic Diagram Figure 4/33-40-00-990-808 (Sheet 2 of 2)

EFFECTIVITY WJE 412, 414 33-40-00

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## LANDING AND TAXI LIGHTS - DESCRIPTION AND OPERATION

#### 1. General

- A. The landing and taxi lights consist of the nosegear landing and taxi lights and the wing landing lights.
- B. Two sealed-beam, fixed-position, combination landing and taxi lights are installed on the nosegear assembly. Each light is a double-filament lamp, one 600-watt and one 400-watt. The circuit is interlocked with the landing gear control relays so that the lights will come on only when the landing gear control handle is in the down position. The landing and taxi lights are controlled by a single off/ dim/bright switch.
- C. One sealed-beam, retractable landing light is installed on the lower surface of each wing tip. Each light assembly is enclosed in a housing and contains a 600-watt lamp, a motor-driven gear arrangement, limit switches, and an autotransformer for reducing voltage to 28 volts. The light-mounting installation provides permanent directional alignment. The wing lights are individually controlled by two retract/extend off/extend on switches. An automatic retract circuit is energized when a pressure difference in excess of 70 psig (483 kPa) is sensed on the engine differential pressure switch with the landing gear handle placed in the up position.

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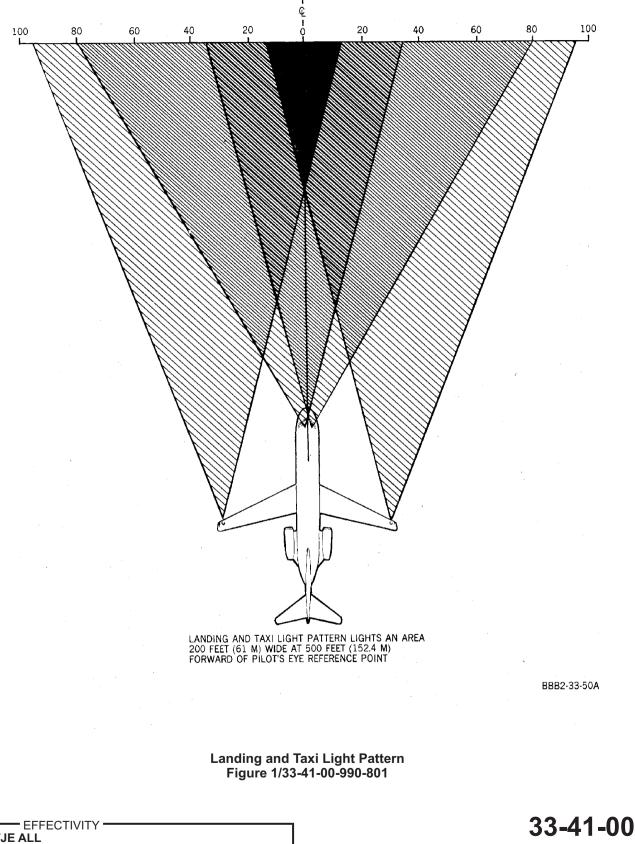
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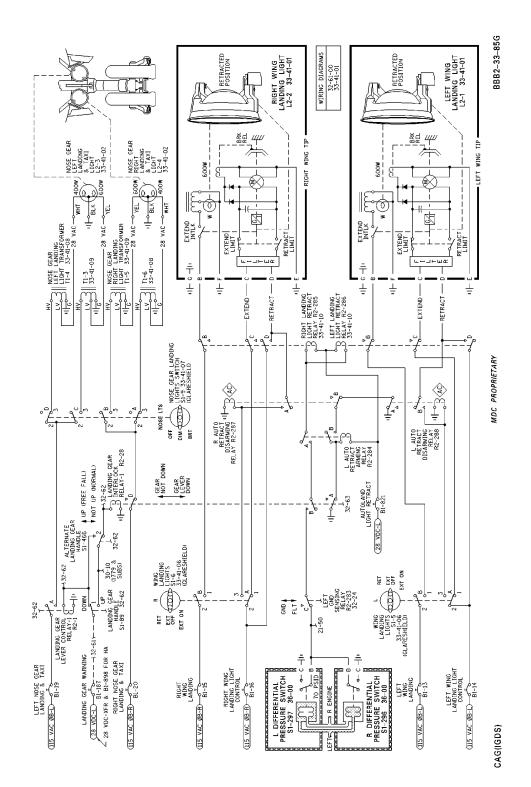
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Landing and Taxi Lights -- Schematic Figure 2/33-41-00-990-802

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#### NOSEGEAR LANDING AND TAXI LIGHTS - REMOVAL/INSTALLATION

### 1. General

- A. The removal installation procedures for both nosegear landing and taxi lights are identical. The light housing and support bracket should be removed and installed as a unit to preclude disturbance of the light adjustment. The adjustment must be checked as outlined in the Adjustment/Test procedure. Adjustment is not required following lamp replacement.
- B. When performing maintenance, do not allow the lights to remain on more than five minutes. If more than five minutes is required, turn lights off and allow them to cool for five minutes. Prolonged continuous use may cause lights to burn out.

#### 2. Removal/Installation Nosegear Landing and Taxi Lights

#### WJE ALL PRE MD80-SL-33-106

- **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
- A. Remove Nosegear Landing and Taxi Light Lamps. (Figure 401) (Figure 402) (Figure 404)

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

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

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

Row Col Number Name

K 14 B1-19 LEFT NOSE GEAR LANDING & TAXI

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

Row Col Number Name

L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI

- (2) Place nosewheel steering bypass lever in bypass position to prevent inadvertent operation of nosewheel steering.
- (3) Remove lamp retaining ring, and pull out lamp to gain access to electrical wiring.
- (4) Disconnect electrical wiring and remove lamp.

## WJE ALL POST MD80-SL-33-106

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

B. Remove Nosegear Landing and Taxi Light Lamps. (Figure 403)

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

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

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

## Row Col Number Name

K 14 B1-19 LEFT NOSE GEAR LANDING & TAXI

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WJE ALL POST MD80-SL-33-106 (Continued)

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

#### Row Col Number Name

L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI

- (2) Place nosewheel steering bypass lever in bypass position to prevent inadvertent operation of nosewheel steering.
- Remove lamp retaining ring, mesh screen and pull out lamp to gain access to electrical wiring.
   NOTE: The lamp can be attached to the mesh screen by the rubber gasket.
- (4) Disconnect electrical wiring and remove lamp.
- (5) Remove the mesh screen from the lamp and Inspect the gasket around the lamp. If cracked or damaged remove the gasket and discard.

#### WJE ALL

- C. Remove Nosegear Landing and Taxi Light Housing.
  - (1) If necessary, remove nosegear landing and taxi light lamp.
  - (2) Remove terminal block cover and disconnect aircraft wiring.
  - (3) Loosen conduit nut on wiring feed through and remove aircraft wiring from fixture.
  - (4) Remove light housing and support bracket from nosegear.
- D. Install Nosegear Landing and Taxi Light Housings

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

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

UPPER EPC, LIGHTS - LEFT AC BUS					
Row	<u>Col</u>	<u>Number</u>	Name		
К	14	B1-19	LEFT NOSE GEAR LANDING & TAXI		

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

Row Col Number Name

- L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI
- (2) Make certain nosewheel steering bypass lever is in bypass position.
- (3) Position light housing and support bracket on nosegear and install attaching bolts and nuts.
- (4) Insert aircraft wiring in fixture and tighten conduit nut on wiring feed through.
- (5) Connect electrical wiring to terminal block and install cover.
- (6) Install nosegear landing and taxi light lamp.

#### WJE ALL PRE MD80-SL-33-106

E. Install Nosegear Landing and Taxi Light Lamps. (Figure 401) (Figure 402) (Figure 404)

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#### WJE ALL PRE MD80-SL-33-106 (Continued)

- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (1) Make sure that these circuit breakers are open and have safety tags:

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
IZ.	4.4	D4 40	

K 14 B1-19 LEFT NOSE GEAR LANDING & TAXI

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

#### Row Col Number Name

- L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI
- (2) Make certain nosewheel steering bypass lever is in bypass position.
- **CAUTION:** MAKE SURE THE WIRES ARE CONNECTED TO THE CORRECT TERMINAL BLOCK AND THE BARE WIRES DO NOT TOUCH EACH OTHER AND THE GROUND STUD. WIRE ROUTING MUST BE CLEAR AND NOT GO ACROSS EACH OTHER. THIS WILL HELP PREVENT DAMAGE TO THE ELECTRICAL UNIT AND ELECTRICAL SUPPLY.
- (3) Connect electrical wiring to lamp and install lamp retaining ring.
  - (a) If the light housing is the Grimes housing, P/N 51-0525-1, make sure that there are two pads adjacent to the three landing light housing indents for the lamp locators to rest upon. The Grimes unit can be distinguished by looking into the housing, without the lamp installed, and seeing the following note:

INSTALL WITH WHITE TERMINAL UP

(b) If the light housing is the Teleflex-Syneravia housing, P/N 4223448, make sure that there is 360 degree gasket installed within the housing for the lamp locators to rest upon. The Teleflex-Syneravia housing has an instruction plate inside the housing which reads as follows:

INSTALL WITH WHITE TERMINAL UP 600W COMM 400W

- (c) The lamp is marked (top), and must be installed with the mark at the top of the light housing, to clear the electrical wiring and terminal block.
- (d) Rotate yellow and black lug in direction of arrow, approximately 60 degrees, to clear terminal on lamp when lamp is installed. (Figure 404)
- (e) Make sure that the retaining ring is not over-torqued during tightening. The retaining ring should be tighten to where the retaining ring is secure and does not rotate but not overly tighten so as to place undo stress upon the lamp body itself.
- (4) Place nosewheel steering bypass lever in normal position.
- (5) Remove the safety tags and close these circuit breakers:

## UPPER EPC, LIGHTS - LEFT AC BUS

Row Col Number Name

K 14 B1-19 LEFT NOSE GEAR LANDING & TAXI

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WJE ALL PRE MD80-SL-33-106 (Continued)

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

#### Row Col Number Name

L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI

(6) Check to ensure landing gear control handle is down.

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

**CAUTION:** DO NOT LET THE LIGHTS STAY ON FOR MORE THAN FIVE MINUTES WHILE YOU DO MAINTENANCE. THIS WILL PREVENT DAMAGE TO THE LIGHTS.

(7) Place appropriate switch in the ON position to check proper operation of light.

#### WJE ALL POST MD80-SL-33-106

F. Install Nosegear Landing and Taxi Light Lamps. (Figure 403)

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

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

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	14	B1-19	LEFT NOSE GEAR LANDING & TAXI

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

Row Col Number Name

- L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI
- (2) Make certain nosewheel steering bypass lever is in bypass position.

**CAUTION:** MAKE SURE THE WIRES ARE CONNECTED TO THE CORRECT TERMINAL BLOCK AND THE BARE WIRES DO NOT TOUCH EACH OTHER AND THE GROUND STUD. WIRE ROUTING MUST BE CLEAR AND NOT GO ACROSS EACH OTHER. THIS WILL HELP PREVENT DAMAGE TO THE ELECTRICAL UNIT AND ELECTRICAL SUPPLY.

- (3) Connect electrical wiring to lamp.
- (4) Install the gasket around the lamp then install the mesh screen over the lamp and gasket.
- (5) install the lamp and mesh screen assembly in the housing and install the retaining ring.
  - (a) Make sure that the lamp is installed with the word "TOP" at the top of the light housing, to clear the electrical wiring and terminal block.
  - (b) Rotate yellow and black lug in direction of arrow, approximately 60 degrees, to clear terminal on lamp when lamp is installed.
  - (c) Make sure that the retaining ring is not over-torqued during tightening. The retaining ring should be tighten to where the retaining ring is secure and does not rotate but not overly tighten so as to place undo stress upon the mesh screen and lamp body itself.
- (6) Place nosewheel steering bypass lever in normal position.

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#### WJE ALL POST MD80-SL-33-106 (Continued)

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

UPPER EPC, LIGHTS - LEFT AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> K 14 B1-19 LEFT NOSE GEAR LANDING & TAXI

**UPPER EPC, LIGHTS - RIGHT AC BUS** 

Row Col Number Name

L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI

(8) Make sure landing gear control handle is down.

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

**CAUTION:** DO NOT LET THE LIGHTS STAY ON FOR MORE THAN FIVE MINUTES WHILE YOU DO MAINTENANCE. THIS WILL PREVENT DAMAGE TO THE LIGHTS.

(9) Place appropriate switch in the ON position to check proper operation of light.

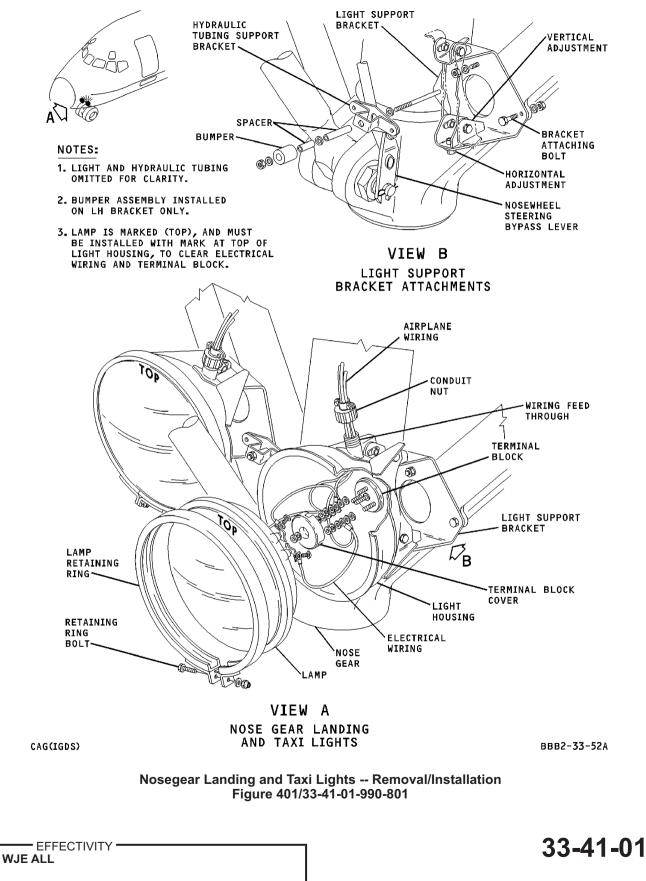
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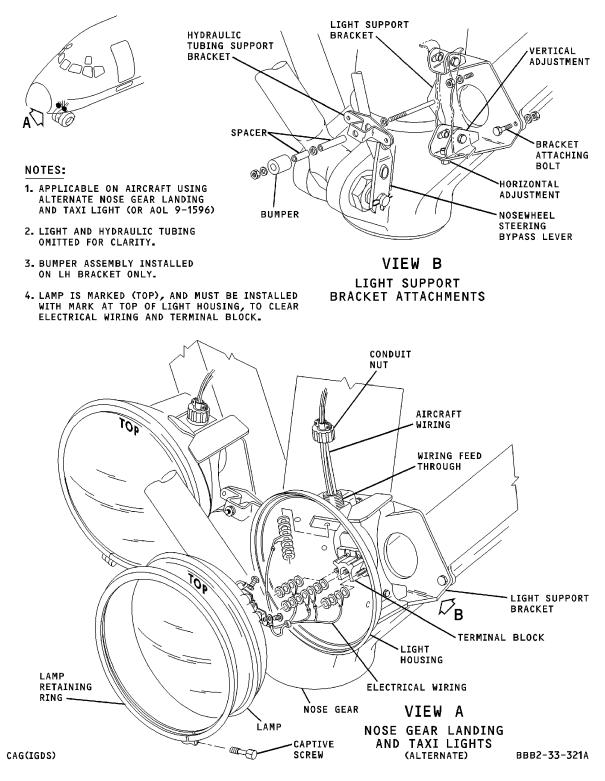
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Nosegear Landing and Taxi Lights (Alternate) -- Removal/Installation Figure 402/33-41-01-990-802

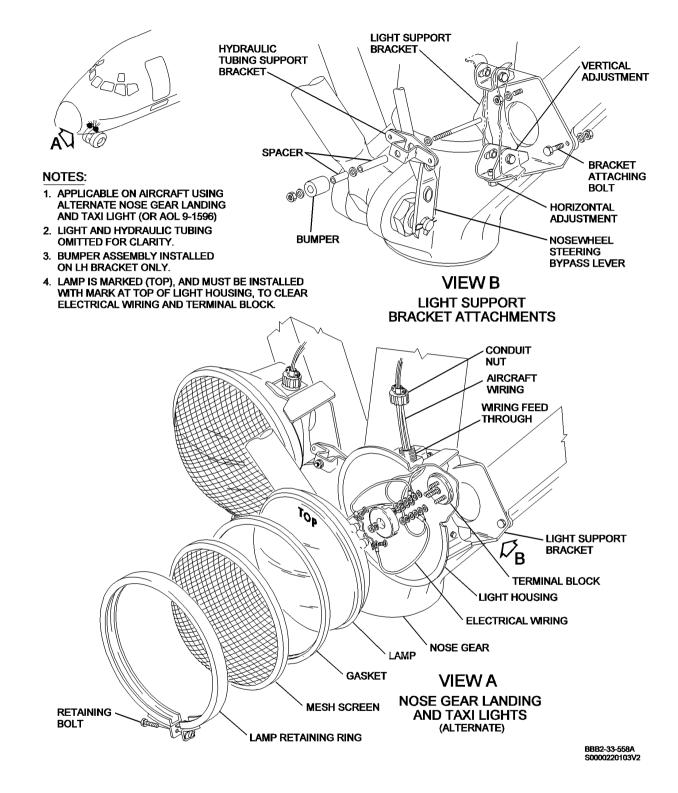
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Nosegear Landing and Taxi Lights (Alternate) - Removal/Installation Figure 403/33-41-01-990-806

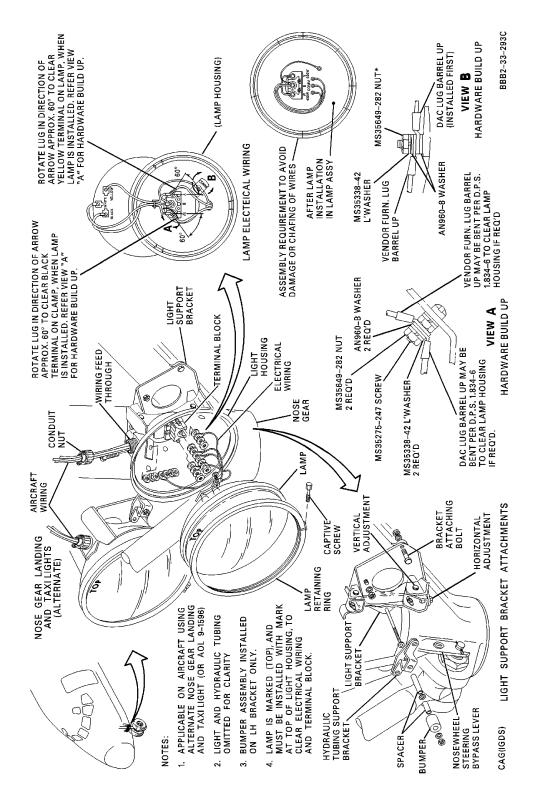
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Nosegear Landing and Taxi Lights (Alternate) -- Removal/Installation Figure 404/33-41-01-990-803

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#### NOSEGEAR LANDING AND TAXI LIGHTS - ADJUSTMENT/TEST

## 1. General

A. A new light assembly should be pre-assembled and bench adjusted before installation. The following procedures must be used if necessary in making final adjustments to bring light into focus.

## 2. Adjustment/Test Nosegear Landing and Taxi Lights

A. Adjust Nosegear Landing and Taxi Lights

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSE LANDING AND TAXI LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

**CAUTION:** DO NOT ALLOW LANDING AND TAXI LIGHTS TO REMAIN ON MORE THAN 5 MINUTES AT A TIME.

- (1) Make certain landing gear struts are properly inflated before adjustment of nosegear landing and taxi lights. (NOSEGEAR STRUT SERVICING, PAGEBLOCK 32-21-02/301)
- (2) Loosen vertical and horizontal adjustment bolts.
- (3) Horizontal adjustment: Adjust each light so beam center-line is 3 ±1 ft (0.91 ±0.31 m) outboard of airplane centerline at 65 ±5 ft (19.8 ±1.5 m) from face of lamp.
- (4) Tighten adjustment bolts.
- (5) Vertical adjustment: Adjust both lights so beam centerline intersects static ground line at 65 ±5 ft (19.8 ±1.5 m) from face of lamp.
- (6) Tighten adjustment bolts.
- B. Test Nosegear Landing and Taxi Lights

WARNING: YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSE LANDING AND TAXI LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

#### **CAUTION:** DO NOT ALLOW LANDING AND TAXI LIGHTS TO REMAIN ON MORE THAN 5 MINUTES AT A TIME.

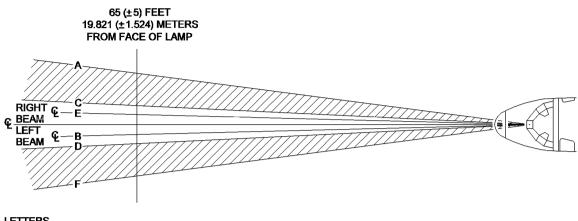
- (1) Place NOSE LTS switch, located on glareshield, in DIM position and check that both nosegear lights come on.
- (2) Place NOSE LTS in BRT position, and check that both nosegear lights brighten.
- (3) Place NOSE LTS switch in OFF position and check that both lights go off.
  - NOTE: Nosegear landing and taxi lights should come on when landing gear lever is in down detent position and go off when lever is pulled out of detent position.

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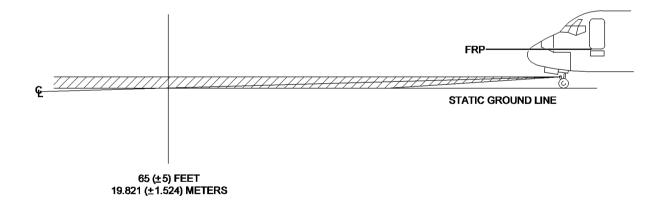
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LETTERS A, E, AND D ARE RIGHT LIGHT PATTERN C, B, AND F ARE LEFT LIGHT PATTERN



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#### Nosegear Landing and Taxi Lights -- Adjustment/Test Figure 501/33-41-01-990-804

WJE ALL

33-41-01

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#### NOSE GEAR LANDING/TAXI LIGHT SWITCH - REMOVAL/INSTALLATION

## 1. General

- A. This procedure contains task card data.
- B. Refer to Service Letter MD80-SL-33-101.

#### TASK 33-41-01-901-801

## 2. Nose Gear Landing/Taxi Light Switch Replacement

NOTE: This procedure is a scheduled maintenance task.

#### A. References

Reference	Title
33-41-03 P/B 401	LANDING AND TAXI LIGHT SWITCHES -
	REMOVAL/INSTALLATION

## B. Nose Gear Landing/Taxi Light Switch Replacement

SUBTASK 33-41-01-901-001

(1) Remove and replace the nose gear landing/taxi light switch. (LANDING AND TAXI LIGHT SWITCHES - REMOVAL/INSTALLATION, PAGEBLOCK 33-41-03/401)

NOTE: Refer to service letter MD80-SL-33-101 for applicable part numbers.

------ END OF TASK -------

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#### WING LANDING LIGHTS SECTOR GEAR WORM PINION - SERVICING

## 1. General

- A. This procedure contains task card data.
- B. Refer to latest revision of Grimes (Honeywell) Technical Information Letter No. 372.

## TASK 33-41-02-640-801

#### 2. Lubrication of the Wing Landing Lights Sector Gear Worm Pinion

NOTE: This procedure is a scheduled maintenance task.

A. References
---------------

Reference	Title
24-40-00 P/B 001	EXTERNAL POWER - DESCRIPTION AND OPERATION
Teele/Equipment	

## B. Tools/Equipment

Reference	Description
STD-858	Tag - DO NOT OPERATE

## C. Consumable Materials

NOTE: Equivalent replacements are permitted for the items that follow.

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

Reference	Description	Specification
D60039	Lubricant - Grease, Pneumatic	DPM 333 (AMS-G-4343)

## D. Prepare for the Lubrication of the Wing Landing Light

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

#### SUBTASK 33-41-02-865-001

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

## LOWER EPC, LIGHTS - LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
Μ	35	B1-821	AUTOLAND LIGHT RETRACT

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

Row	<u>Col</u>	<u>Number</u>	Name
K	12	B1-13	LEFT WING LANDING

K 13 B1-14 LEFT WING LANDING LIGHT CONTROL

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
L	12	B1-15	RIGHT WING LANDING
L	13	B1-16	RIGHT WING LANDING LIGHT CONTROL

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SUBTASK 33-41-02-861-001

(2) Apply external electrical power. (EXTERNAL POWER - DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)

SUBTASK 33-41-02-860-002

- **CAUTION:** WHEN YOU DO A TEST OF THE LANDING LIGHTS, DO NOT OPERATE THE LIGHTS MORE THAN 10 EXTEND-RETRACT CYCLES DURING EACH 10 MINUTES. IF YOU DO MORE THAN 10 CYCLES, THE LANDING LIGHT MOTORS WILL NOT HAVE THEIR USUAL SERVICE LIFE.
- (3) Extend the wing landing lights as follows:
  - (a) On the overhead panel, put the L LDG LT and RT LDG LT switches to the EXT OFF position.
    - 1) Make sure that the two wing landing lights extend from the wing.
    - 2) Make sure that the two wing landing lights are off.
  - (b) Put a DO NOT OPERATE tag, STD-858 on the LT LDG LT AND RT LDG LT switches.
- E. Lubrication of the Wing Landing Lights Sector Gear Worm Pinion.

SUBTASK 33-41-02-640-001

(1) Service the wing landing light as follows: (Ref Figure 301

**WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1404, LUBRICANT/GREASE/PNEUMATIC (DPM 333)

HAZMAT 1000, REFER TO MSDS

(a) Apply a thin layer of pneumatic lubricant grease, D60039 to the gear teeth.

#### F. Job Close-up

SUBTASK 33-41-02-942-001

- **CAUTION:** WHEN YOU DO A TEST OF THE LANDING LIGHTS, DO NOT OPERATE THE LIGHTS MORE THAN 10 EXTEND-RETRACT CYCLES DURING EACH 10 MINUTES. IF YOU DO MORE THAN 10 CYCLES, THE LANDING LIGHT MOTORS WILL NOT HAVE THEIR USUAL SERVICE LIFE.
- (1) Retract the wing landing lights as follows:
  - (a) Remove the DO NOT OPERATE tag, STD-858 from the LT LDG LT and RT LDG LT switches.
  - (b) On the overhead panel, put the L LDG LT and RT LDG LT switches to the RET position.
    - 1) Make sure that the two wing landing lights retract into the wing.
- (2) Remove all the tools and equipment from the work area. Make sure the area is clean.
- (3) Remove electrical power if no longer needed (EXTERNAL POWER DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001).

—— END OF TASK ———

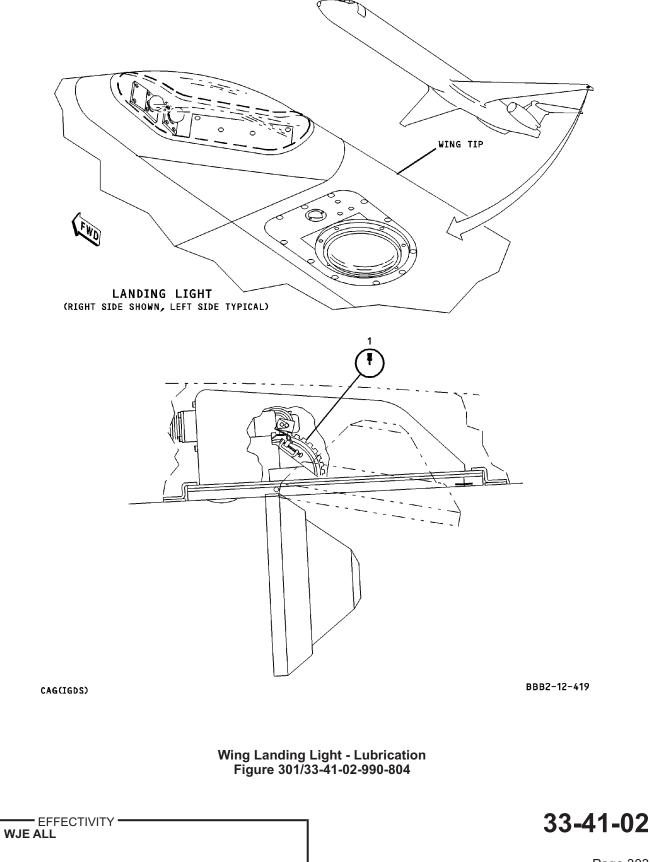
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## WING LANDING LIGHTS - REMOVAL/INSTALLATION

## 1. General

A. The removal and installation procedures for the left and right wing landing lights are identical. The light assembly and operating mechanism are attached to a dust cover, and are removed as a unit. A new light assembly should be preassembled and bench-adjusted before installation. Lamp replacement can be performed by removing the retaining ring. A flux valve is located in each wingtip adjacent to the wing landing light.

Work must not be performed on the lights during testing of the flux valve.

## 2. Equipment and Materials

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

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

Name and Number	Manufacturer
Promoter, Adhesion, Silicone DPM 3202	
Sealant, Silicone Two-part, General Purpose DMS 1799	
Cleaner, Hand Wipe DPM 6380-3	
Wipers, Cleaning DMS 1820 T1A1	
Eye protection	

## 3. Removal/Installation Wing Landing Lights

**CAUTION:** TO PREVENT INTERFERENCE WITH CALIBRATED POSITION OF FLUX VALVE, DO NOT SUBSTITUTE HARDWARE WHEN INSTALLING COMPONENTS ADJACENT TO FLUX VALVE. STAINLESS STEEL, NONMAGNETIC HARDWARE MUST BE USED TO INSTALL LANDING LIGHT.

#### A. Remove Light

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

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

Row	<u>Col</u>	<u>Number</u>	Name
K	12	B1-13	LEFT WING LANDING
K	13	B1-14	LEFT WING LANDING LIGHT CONTROL

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

Row	<u>Col</u>	<u>Number</u>	Name
L	12	B1-15	RIGHT WING LANDING
L	13	B1-16	RIGHT WING LANDING LIGHT CONTROL

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NOTE: Perform the steps that follow to remove the lamp from the landing light. Proceed to Paragraph 3.A.(5) to remove landing light as a unit (Figure 401).

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (2) Remove the eight screws from the retaining ring.
- (3) Remove the retaining ring and gasket.
- (4) Hold the lamp and remove the two screws that attach the two wires to the lamp.

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (5) Remove attaching screws and lift landing light and gasket from wingtip.
- (6) Disconnect electrical connector from landing light.
- B. Install Light
  - (1) If necessary, install a new gasket onto the landing light lamp retaining ring as follows: (Figure 401).
    - NOTE: For aircraft without Honeywell/Grimes S/B 45-0057-33-003 perform (Paragraph 3.B.(1)(a)), for aircraft with Honeywell/Grimes S/B 45-0057-33-003 perform (Paragraph 3.B.(1)(b)).
    - **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
    - (a) Examine the gasket for damage and deterioration. (Figure 401 (Sheet 1))
      - 1) If the gasket is damaged or deteriorated, discard the gasket and prepare the surface for a new gasket.
      - 2) Clean the retaining ring mating surface with cleaning wipes dampened with hand wipe cleaner.
      - 3) Apply a coat of silicone adhesion promoter to the retaining ring mating surface.
      - 4) Let the retaining ring air dry for 30 minutes minimum.
      - 5) Apply silicone sealant to the mating surfaces of the gasket and retaining ring.
      - 6) Install the gasket on the retaining ring and let dry for 4 hours minimum.
    - WARNING: YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
    - (b) Examine the gasket for damage and deterioration. (Figure 401 (Sheet 2))
      - 1) If the gasket is damaged or deteriorated, discard the gasket.
      - 2) Install the gasket on retaining ring and pull the twenty gasket pull-tabs thru the retaining ring holes and trim off the protruding pull tab.
        - <u>NOTE</u>: Ensure that enough of the tab remains to ensure retention of the gasket on the retaining ring.
  - (2) If necessary, install lamp into landing light as follows: (Figure 401).

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- (a) Hold the lamp and install the two screws that attach the wires to the lamp.
- (b) Install the lamp with the filament parallel to the light assembly hinge.
- (c) Position retaining ring and secure it with the eight attaching screws. Tighten the screws in a cross/opposite pattern.
- (d) Make sure that these circuit breakers are open and have safety tags:

()					
	UPPER EPC, LIGHTS - LEFT AC BUS				
	<u>Row</u>	<u>Col</u>	<u>Number</u>	Name	
	K	12	B1-13	LEFT WING LANDING	
	К	13	B1-14	LEFT WING LANDING LIGHT CONTROL	
		FDC		IGHT AC BUS	
	UFFER	EFC,		IGHT AC BUS	
	<u>Row</u>	<u>Col</u>	<u>Number</u>	Name	
	L	12	B1-15	RIGHT WING LANDING	
	L	13	B1-16	RIGHT WING LANDING LIGHT CONTROL	
(e)	Connec	t electr	ical connect	tor to landing light.	
(f)	Position	i gaske	et and landin	g light on wingtip. Secure with attaching screws.	
(g)	Remove	e the sa	afety tags ar	nd close these circuit breakers:	
	UPPER	EPC,	LIGHTS - L	EFT AC BUS	
	<u>Row</u>	<u>Col</u>	<u>Number</u>	Name	
	К	12	B1-13	LEFT WING LANDING	
	К	13	B1-14	LEFT WING LANDING LIGHT CONTROL	

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
L	12	B1-15	RIGHT WING LANDING
L	13	B1-16	RIGHT WING LANDING LIGHT CONTROL

# **CAUTION:** DO NOT ALLOW LANDING LIGHTS TO REMAIN ON MORE THAN TEN MINUTES IN STILL, AMBIENT AIR. PROLONGED USE WILL CAUSE DAMAGE TO LIGHT ASSEMBLY.

- C. Place appropriate switch in the ON position to check proper operation of lights.
  - (1) Allow motor to cool after first extension for a period of 1 1/2 minutes before retracting assembly. Further operation requires a 3 1/2 minute cooling period between each subsequent operation, either extend or retract.

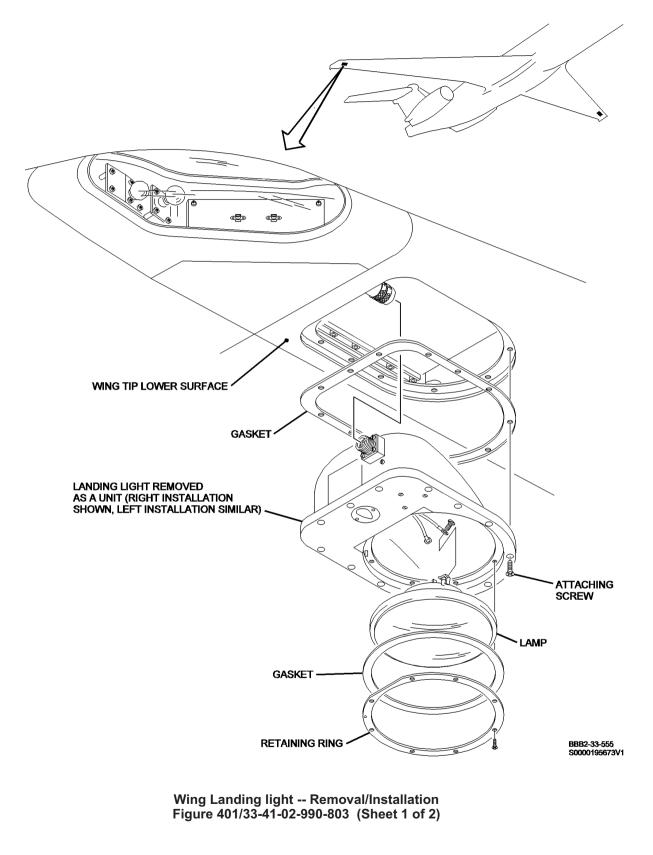
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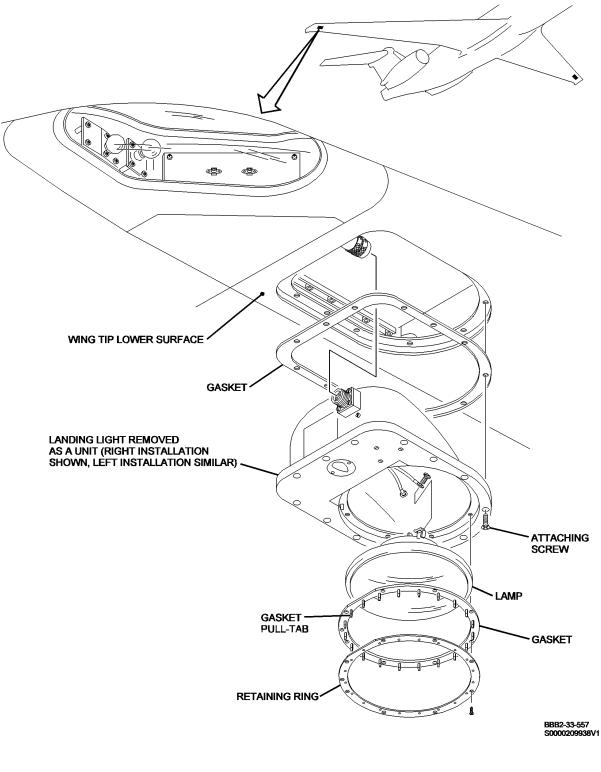
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Wing Landing light -- Removal/Installation Figure 401/33-41-02-990-803 (Sheet 2 of 2)

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## WING LANDING LIGHTS - ADJUSTMENT/TEST

## 1. General

A. The wing landing lights are located in the lower surface of the wing tips. A flux valve is installed adjacent to each landing light. Work must not be performed on the lights during testing of the valve. Adjustment/test procedures for the left and right lights are identical. The lights can be adjusted while installed. Allow motor to cool after first extension for a period of 1 1/2 minutes before retracting assembly. Further operation requires a 3 1/2 minute cooling period between each subsequent operation, either extend or retract.

## 2. Adjustment/Test Wing Landing Lights

- A. Adjust Wing Landing Lights
  - **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
  - **CAUTION:** DO NOT ALLOW LANDING LIGHT TO REMAIN ON MORE THAN 10 MINUTES IN STILL, AMBIENT AIR. PROLONGED USE WILL CAUSE DAMAGE TO LIGHT ASSEMBLY.
  - (1) With light in retracted position, adjust retract limit adjusting screw so retaining ring fairs with dust cover.
  - **CAUTION:** DO NOT ATTEMPT TO ADJUST LIGHT PAST FLUSH, OR MOTOR WILL DRIVE LIGHT AGAINST STOP AND MAY DAMAGE LIGHT ASSEMBLY OPERATING MECHANISM.
  - (2) With light in extended position, adjust extend limit adjusting screw to obtain measurement of 11.38 inches (.289 meters)(92 1/4 degrees) between heel line indicated in Figure 501 and inside edge of landing light dust cover.
  - (3) Check that light comes on during extension between .38 (9.53 mm) and 1.38 inches (34.93 mm)(5 and 12 degrees) from retracted position.
  - (4) Check that applicable light goes off and then retracts when L WING LDG LTS or R WING LDT LTS switch is placed in RET position.
- B. Test Wing Landing Lights

**WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- **CAUTION:** DO NOT ALLOW LANDING LIGHT TO REMAIN ON MORE THAN 10 MINUTES IN STILL, AMBIENT AIR. PROLONGED USE WILL CAUSE DAMAGE TO LIGHT ASSEMBLY.
- (1) Place L WING LDG LTS switch, located on glareshield, in EXT ON position. Check that left wing landing light extends and comes on.
- (2) Place L WING LDG LTS switch in EXT OFF position. Check that left wing landing light goes off but remains extended.
- (3) Place L WING LDG LTS switch in RET position. Check that left wing landing light retracts.
- (4) Place R WING LDG LTS switch in EXT ON position. Check that right wing landing light extends and comes on.
- (5) Place R WING LDG LTS switch in EXT OFF position. Check that right wing landing light goes off but remains extended.

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(6) Place R WING LDG LTS switch in RET position. Check that right wing landing light retracts.

WARNING: NORMAL ELECTRICAL POWER SUPPLY TO VARIOUS SYSTEMS WILL BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.

(7) Open these circuit breakers:

```
UPPER EPC, L AC BUS

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

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

K 30 B1-23 LEFT GROUND CONTROL RELAY

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884,

886, 887, 891-893

K 33 B1-23 LEFT GROUND CONTROL RELAY
```

#### WJE ALL

- (8) Attach jumper wire from aircraft structure to terminal 3C of left ground control relay (R2-283) located on Sta. 110 relay panel.
- (9) Close these circuit breakers:

```
UPPER EPC, L AC BUS

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

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

K 30 B1-23 LEFT GROUND CONTROL RELAY

WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884,

886, 887, 891-893

K 33 B1-23 LEFT GROUND CONTROL RELAY
```

#### WJE ALL

- (10) Place L WING LDG LTS switch in EXT ON position. Check that left wing landing light extends and comes on.
- (11) Place R WING LDG LTS switch in EXT ON position. Check that right wing landing light extends and comes on.
- (12) Open these circuit breakers:

UPPER EPC, L AC BUS						
Row	<u>Col</u>	<u>Number</u>	Name			
WJE 417, 419, 421, 423, 865, 869, 871, 872						
K	30	B1-23	LEFT GROUND CONTROL RELAY			
WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893						
K	33	B1-23	LEFT GROUND CONTROL RELAY			

#### WJE ALL

**WARNING:** MOVE LANDING GEAR CONTROL LEVER FROM DETENT ONLY. DO NOT ALLOW LEVER TO MOVE TOWARD UP POSITION.

- (13) With landing gear down and locked, move landing gear control lever just out of detent position (do not retract gear).
- (14) Check that left and right wing landing lights go off and retract.
- (15) Place landing gear control lever to down detent position.

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- (16) Check that left and right wing landing lights extend and come on.
- (17) Place R WING LDG LTS switch in RET position. Check that right wing landing light goes off and retracts.
- (18) Place L WING LDG LTS switch in RET position. Check that left wing landing light goes off and retracts.
- (19) Remove jumper wire from aircraft structure and terminal 3C of left ground control relay (R2-283).
- (20) Close these circuit breakers:

UPPER	EPC,	L AC BUS				
Row	<u>Col</u>	<u>Number</u>	Name			
WJE 417, 419, 421, 423, 865, 869, 871, 872						
K	30	B1-23	LEFT GROUND CONTROL RELAY			
WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884 886, 887, 891-893						
K	33	B1-23	LEFT GROUND CONTROL RELAY			

#### WJE ALL

(21) Return aircraft to required configuration.

- C. Automatic Retraction Test Wing Landing Lights
  - <u>NOTE</u>: The alternate test of the wing landing lights is to be accomplished only during a normal engine run.
  - **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
  - **CAUTION:** DO NOT ALLOW LANDING LIGHT TO REMAIN ON MORE THAN 10 MINUTES IN STILL, AMBIENT AIR. PROLONGED USE WILL CAUSE DAMAGE TO LIGHT ASSEMBLY.
  - (1) Place L WING LDG LTS switch, located on glareshield, in EXT ON position. Check that left wing landing light extends and comes on.
  - (2) Place L WING LDG LTS switch in EXT OFF position. Check that left wing landing light goes off but remains extended.
  - (3) Place L WING LDG LTS switch in RET position. Check that left wing landing light retracts.
  - (4) Place R WING LDG LTS switch in EXT ON position. Check that right wing landing light extends and comes on.
  - (5) Place R WING LDG LTS switch in EXT OFF position. Check that right wing landing light goes off but remains extended.
  - (6) Place R WING LDG LTS switch in RET position. Check that right wing landing light retracts.
  - (7) Place L WING LDG LTS switch in EXT ON position. Check that left wing landing light extends and comes on.
  - (8) Place R WING LDG LTS switch in EXT ON position. Check that right wing landing light extends and comes on.

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- **WARNING:** NORMAL ELECTRICAL POWER SUPPLY TO VARIOUS SYSTEMS WILL BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.
- (9) Open these circuit breakers:

UPPER EPC, L AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> WJE 417, 419, 421, 423, 865, 869, 871, 872 K 30 B1-23 LEFT GROUND CONTROL RELAY WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893 K 33 B1-23 LEFT GROUND CONTROL RELAY

#### WJE ALL

(10) Check that landing gear ground lockpins are installed.

**WARNING:** MOVE LANDING GEAR CONTROL LEVER FROM DETENT ONLY. DO NOT ALLOW LEVER TO MOVE TOWARD UP POSITION.

- (11) With landing gear down and locked, move landing gear control lever just out of detent position (do not retract gear).
- (12) Set left engine to idle and set right engine to  $1.31(\pm .07)$  EPR.
- (13) Check that left and right wing landing lights go off and retract.
- (14) Set both engines to idle.
- (15) Check that left and right wing landing lights extend and come on.
- (16) Set left engine to  $1.31(\pm .07)$  EPR.
- (17) Check that left and right wing landing lights go off and retract.
- (18) Set both engines to idle.
- (19) Place landing gear control lever to down detent position.
- (20) Check that left and right wing landing lights extend and come on.
- (21) Place R WING LDG LTS switch in RET position. Check that right wing landing light goes off and retracts.
- (22) Place L WING LDG LTS switch in RET position. Check that left wing landing light goes off and retracts.
- (23) Close these circuit breakers:

UPPER EPC, L AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> WJE 417, 419, 421, 423, 865, 869, 871, 872 K 30 B1-23 LEFT GROUND CONTROL RELAY WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893 K 33 B1-23 LEFT GROUND CONTROL RELAY

#### WJE ALL

(24) Return aircraft to required configuration.

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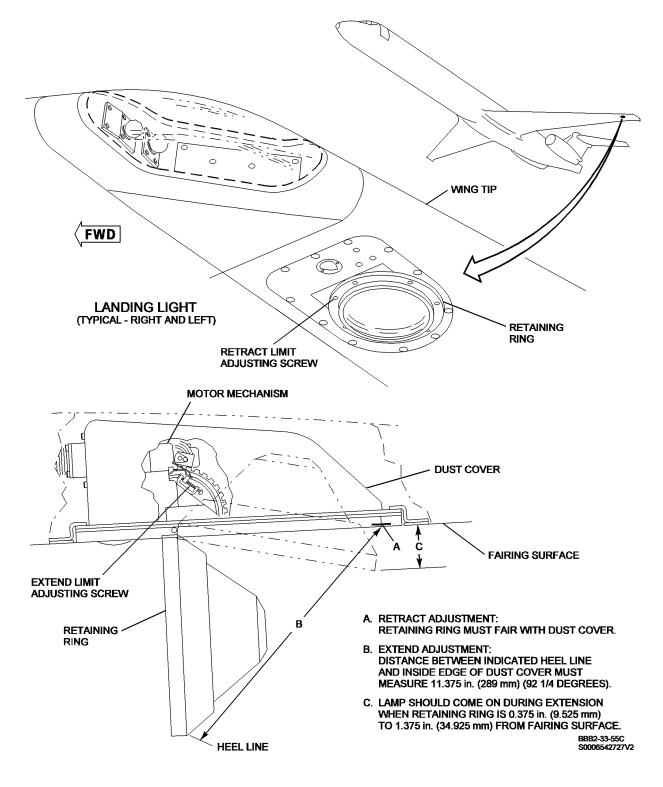
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Wing Landing Lights -- Adjustment/Test Figure 501/33-41-02-990-802

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## WING LANDING LIGHTS - CHECK

## 1. General

- A. Check procedures for the left and right wing landing lights are identical. If either light fails to meet the requirements indicated below, refer to the adjustment/test procedure for corrective action.
- B. After the first extension of a wing landing light, allow the motor to cool for a period of 1 1/2 minutes before retraction. Each subsequent operation, either extend or retract, requires a 3 1/2 minute cooling period.

## 2. Check Wing Landing Lights

- A. Check Wing Landing Lights
  - **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
  - **CAUTION:** DO NOT ALLOW LANDING LIGHT TO REMAIN ON MORE THAN 10 MINUTES IN STILL, AMBIENT AIR. PROLONGED USE WILL CAUSE DAMAGE TO LIGHT.
  - (1) With light in retracted position, check that light retaining ring fairs with dust cover.
  - **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
  - **CAUTION:** DO NOT ATTEMPT TO ADJUST LIGHT PAST FLUSH, OR MOTOR WILL DRIVE LIGHT AGAINST STOP AND MAY DAMAGE LIGHT OPERATING MECHANISM.
  - (2) With light in extended position, check measurement between heel line indicated and inside edge of landing light dust cover. Measurement should be 11.375 inches (289 mm) (92 1/4 degrees). (Figure 601)
  - **WARNING:** YOU MUST WEAR EYE PROTECTION WHEN WORKING IN THE AREA OF THE NOSEGEAR AND WING LANDING LIGHTS. THE LIGHTS CAN EXPLODE AND CAUSE SERIOUS INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT.
  - (3) Check that light comes on during extension when retaining ring is 0.375 inch (9.525 mm) to 1.375 (34.925 mm) inches (5 to 12 degrees) from fairing surface of lower wingtip.
  - (4) Check that applicable light goes off and then retracts when L WING LDG LTS or R WING LDG LTS switch is placed in RET position.

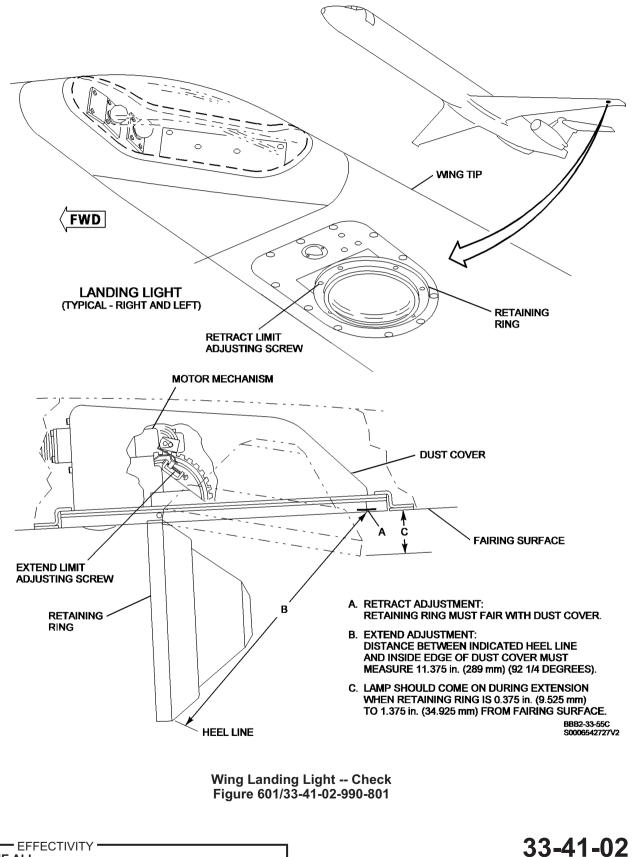
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#### LANDING AND TAXI LIGHT SWITCHES - REMOVAL/INSTALLATION

## 1. General

A. This chapter provides removal/installation procedures for the landing and taxi light switches. The landing and taxi light switches are located in the left side of the glareshield. The procedure as written is for the NOSE LTS switch but the procedure is the same for the R WING LDG LTS and L WING LDG LTS switches.

## 2. Removal/Installation

A. Remove Switch

#### WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

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

#### Row Col Number Name

Κ	12	B1-13	LEFT WING LANDING
Κ	13	B1-14	LEFT WING LANDING LIGHT CONTROL
Κ	14	B1-19	LEFT NOSE GEAR LANDING & TAXI
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL

## UPPER EPC, LIGHTS - RIGHT AC BUS

Row	Col	Number	Name
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L	12	B1-15	RIGHT WING LANDING
L	13	B1-16	RIGHT WING LANDING LIGHT CONTROL

- L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI
- (2) Remove screws from handles on NOSE LTS, R WING LDG LTS and L WING LDG LTS switches.
- (3) Remove all three switch handles.
- (4) Remove screws from the light plate.
- (5) Remove light plate.
- (6) Remove lock-nut on L WING LDG LTS switch.
- (7) Remove screw from switch cover.
- (8) Lower L WING LDG LTS switch from glareshield and remove switch cover and washer.
- (9) Remove lock-nut from NOSE LTS switch.
- (10) Remove NOSE LTS switch from the glareshield.

# **CAUTION:** WIRES MUST BE LABLED TO PREVENT INCORRECT PLACEMENT WHEN SWITCH IS INSTALLED.

- (11) Disconnect wires from NOSE LTS switch terminals.
- B. Install Switch

## **WARNING:** TAG AND SAFETY CIRCUIT BREAKERS.

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

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

#### Row Col Number Name

K 12 B1-13 LEFT WING LANDING

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(Continued)

## UPPER EPC, LIGHTS - LEFT AC BUS

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

Κ	13	B1-14	LEFT WING LANDING LIGHT CONTROL
K	14	B1-19	LEFT NOSE GEAR LANDING & TAXI
Κ	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
L	12	B1-15	RIGHT WING LANDING
L	13	B1-16	RIGHT WING LANDING LIGHT CONTROL
L	14	B1-20	RIGHT NOSE GEAR LANDING & TAXI

**CAUTION:** BE SURE TO CONNECT CORRECT WIRE TO EACH TERMINAL. IMPROPER CONNECTIONS COULD DAMAGE EQUIPMENT.

- (2) Connect wires to NOSE LTS switch terminals.
- (3) Install NOSE LTS switch in glareshield and tighten lock-nut.
- (4) Install washer on L WING LDG LTS switch and insert switch into switch cover.
- (5) Install L WING LDG LTS switch in glareshield.
- (6) Install lock-nut on L WING LDG LTS switch but do not tighten.
- (7) Install screw in switch cover.
- (8) Tighten lock-nut on L WING LDG LTS switch.
- (9) Install light plate.
- (10) Install screws in light plate.
- (11) Install handles on NOSE LTS, R WING LDG LTS and L WING LDG LTS switches.
- (12) Install screws in switch handles.
- (13) Remove the safety tags and close these circuit breakers:

## UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	Col	<u>Number</u>	Name
K	12	B1-13	LEFT WING LANDING
K	13	B1-14	LEFT WING LANDING LIGHT CONTROL
K	14	B1-19	LEFT NOSE GEAR LANDING & TAXI
K	18	B1-306	INTEGRAL LIGHTS CENTER INST PANEL

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

Row Col Number Name

- L 12 B1-15 RIGHT WING LANDING
- L 13 B1-16 RIGHT WING LANDING LIGHT CONTROL
- L 14 B1-20 RIGHT NOSE GEAR LANDING & TAXI
- (14) Place NOSE LTS switch to DIM, then BRT, then OFF; check that NLG Landing and Taxi Lights dim and brighten properly.

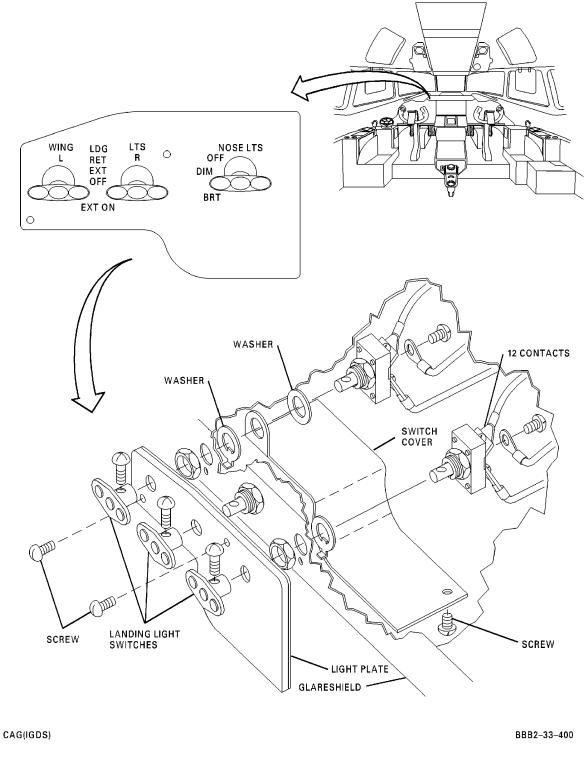
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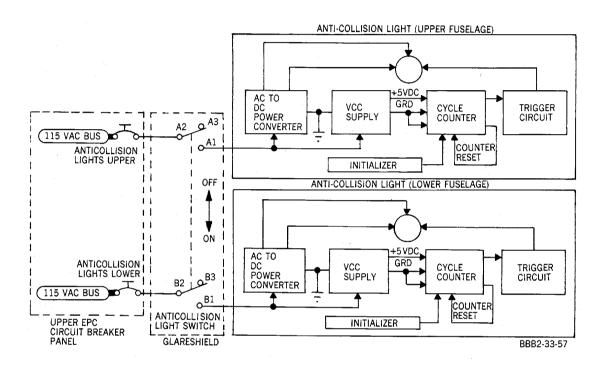
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#### **ANTICOLLISION LIGHTS - DESCRIPTION AND OPERATION**

#### 1. General

- A. The anticollision lights consist of two lights; one on the upper fuselage surface and the other on the lower fuselage surface.
- B. The anticollision lights consist of a flash tube encircling a reflector and electronic circuitry to convert ac to dc for the flash tube and a trigger pulse to fire the flash tube. A trigger pulse fires the flash tube at the rate of 60 times per minute. The lights are controlled by a single on/off switch on the glareshield. A red lens covers the light.



Anticollision Lights -- Simplified Schematic Figure 1/33-42-00-990-801

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#### **ANTICOLLISION LIGHTS - MAINTENANCE PRACTICES**

#### 1. General

- A. This maintenance practice covers the removal/installation of the upper and lower anticollision lights.
- B. Access to the upper anticollision light is through access door 5824C, located in the cabin ceiling.
- C. Access to the lower anticollision light is from outside the aircraft.
- D. When relamping is required, replacement of capacitors is recommended. It is not recommended to relamp or replace capacitors on the aircraft.

#### 2. Equipment and Materials

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

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

Name and Number	Manufacturer
Sealant PR-1422 QPL 2082	Techcon Systems, Inc. Carson, CA
Drycleaning Solvent P-D-680 DPM 518	Standard Oil of California
Detergent DPM 3673	Proctor & Gamble Mfg. Co. Cincinnati, OH

#### Table 201

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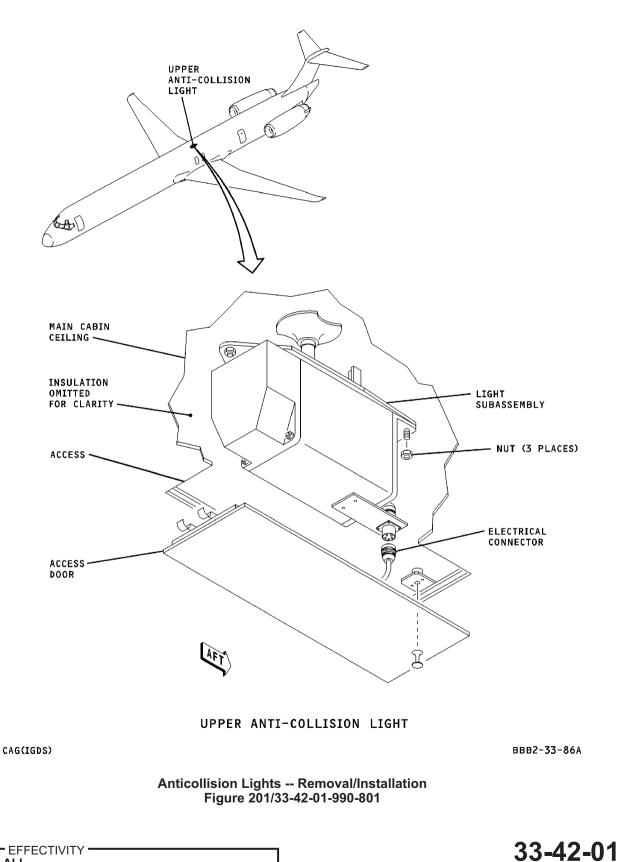
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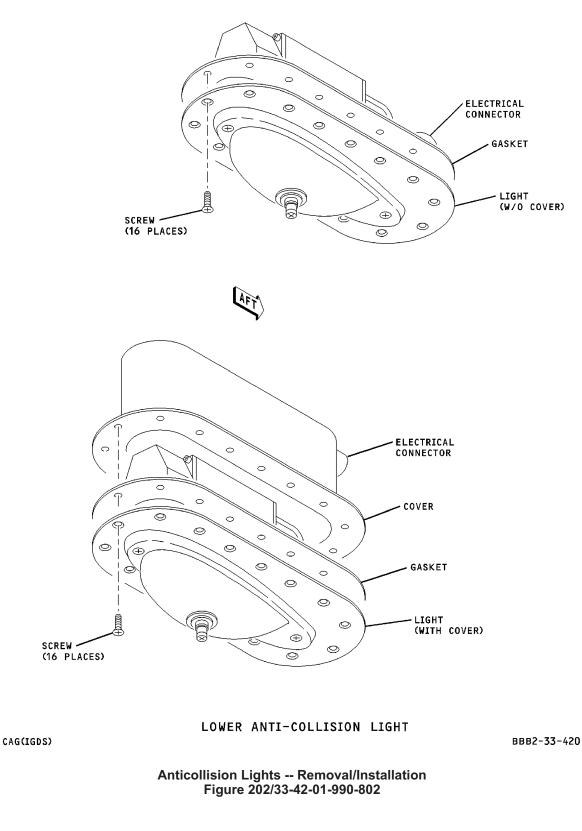


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#### 3. Removal/Installation Upper Anticollision Light

A. Remove Upper Anticollision Light

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

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

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

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

- L 11 B1-99 UPPER ANTI-COLLISION
- (2) Open access door 5824C.

WARNING: DANGEROUS VOLTAGE. ALLOW 2 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. MAKE CERTAIN THAT DUST COVER IS INSTALLED ON ELECTRICAL RECEPTACLE DURING REMOVAL/INSTALLATION. CONTACT WITH RECEPTACLE PIN CAN CAUSE INJURY.

- (3) Disconnect electrical connector from light.
- (4) Remove electronic housing and light from mounting flange as a single unit.
- B. Install Upper Anticollision Light

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

(1) Make sure that this circuit breaker is open and has safety tag:

## UPPER EPC, LIGHTS - RIGHT AC BUS

## Row Col Number Name

- L 11 B1-99 UPPER ANTI-COLLISION
- **WARNING:** LIQUID DETERGENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID DETERGENT IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

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#### (WARNING PRECEDES)

- (2) If existing lens is retained for use, clean inside of lens with solution of mild detergent and water. Wipe clean with lint free cloth.
  - <u>NOTE</u>: Upper anti-collision lights are shipped with a serviceable red lens installed. The lens is included with each unit to protect the flash tube and reflector. The serviceable red lens provides an available lens, should the existing lens require replacement. If the lens from the serviceable light is not needed, install lens on unserviceable unit to protect flash tube and reflector during shipping.
- (3) Install electronic housing and light on mounting flange.
- (4) Connect electrical connector to light.
- (5) Remove the safety tag and close this circuit breaker:

#### UPPER EPC, LIGHTS - RIGHT AC BUS

<u>Row Col Number Name</u>

L 11 B1-99 UPPER ANTI-COLLISION

**WARNING:** DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.

(6) Place ANTICOLLISION LIGHT switch, located on glareshield, in ON position.

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

(7) Check that upper anticollision light comes on and flashes 60 flashes per minute.

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- (8) Place ANTICOLLISION LIGHT switch in OFF position.
- (9) Check that lights go off.

## 4. Removal/Installation Upper Anti-Collision Light Lens

A. Remove Upper Anti-Collision Light Lens

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

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

## UPPER EPC, LIGHTS - RIGHT AC BUS

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

- L 11 B1-99 UPPER ANTI-COLLISION
- (2) Open access door 5824C (Figure 201).

#### WARNING: DANGEROUS VOLTAGE. ALLOW 2 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. MAKE CERTAIN THAT DUST COVER IS INSTALLED ON ELECTRICAL RECEPTACLE DURING REMOVAL/INSTALLATION. CONTACT WITH RECEPTACLE PIN CAN CAUSE INJURY.

- (3) Disconnect electrical connector from upper anti-collision light.
- (4) Remove nuts and electronic housing/light from mounting flange as single unit. (Figure 203)
- (5) Remove screws from light lens mounting flange; remove upper anti-collision light lens and gasket, and discard gasket.

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- B. Install Upper Anti-Collision Light Lens
  - <u>NOTE</u>: When relamping is required, replacement of the capacitor is recommended. It is not recommended to relamp or replace capacitor on the aircraft.

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

(1) Make sure that this circuit breaker is open and has safety tag:

UPPER EPC, LIGHTS - RIGHT AC BUS				
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>	
L	11	B1-99	UPPER ANTI-COLLISION	

- (2) Use nonmetallic scraper to remove any existing sealant from fuselage skin and mounting flange.
- WARNING: P-D-680 TYPE 1 SOLVENT IS AN AGENT THAT IS FLAMMABLE AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN P-D-680 TYPE 1 SOLVENT IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET P-D-680 TYPE 1 SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (3) Clean surface around mounting flange with (PD-680) solvent.
- (4) Position gasket on mounting flange.

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

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

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#### (WARNING PRECEDES)

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (5) If existing lens is retained for use, clean inside of lens with solution of mild detergent and water. Wipe clean with lint free cloth.
  - <u>NOTE</u>: The upper anti-collision light is shipped with a serviceable red lens installed. The lens is included with the flash tube and reflector. A serviceable red lens is provided should the existing lens require replacement. If the lens from the serviceable light is not needed, install lens on the unserviceable unit to protect flash tube and reflector during shipping.
- (6) Position upper anti-collision light lens on mounting flange. (Figure 203)
- WARNING: INTEGRAL FUEL TANKS SEALING COMPOUND (POLYSULFIDE SEALANT B1/2 AND B2) IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN INTEGRAL FUEL TANKS SEALING COMPOUND IS USED.
  - GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET INTEGRAL FUEL TANKS SEALING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (7) Apply (PR-1422) sealant to threads of screws and install screws into mounting flange. Wait five minutes and tighten screws to assure proper installation.
- (8) Apply peripheral seal of (PR-1422) sealant, faired at approximately 45° angle around mounting flange.
- (9) Install anti-collision light unit, with nuts removed in Paragraph 4.A.(4). (Figure 203)
- (10) Connect electrical connector to upper anti-collision light unit.
- (11) Install access cover. (Figure 201)

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

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

Row Col Number Name

L 11 B1-99 UPPER ANTI-COLLISION

## 5. <u>Test Upper Anti-Collision Light</u>

- A. Test Upper Anti-Collision Light
  - (1) Place ANTICOLLISION LIGHT switch located on overhead switch panel to ON position.

**WARNING:** DO NOT STARE FIXEDLY AT ANTICOLLISION LIGHTS. TEMPORARY IMPAIRMENT OF VISION CAN OCCUR.

- (2) Check that upper anti-collision light comes on and flashes 60 flashes per minute.
- (3) Place ANTI-COLLISION LIGHT switch to OFF position.
- (4) Check that upper anti-collision light is off.

## 6. <u>Removal/Installation Lower Anticollision Light</u>

A. Remove Lower Anticollision Light

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

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

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

Row Col Number Name

K 11 B1-98 LOWER ANTI-COLLISION

(2) Remove light and gasket from fuselage.

NOTE: Light unit and lens comes out secured to mounting plate.

- WARNING: DANGEROUS VOLTAGE. ALLOW 2 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. MAKE CERTAIN THAT DUST COVER IS INSTALLED ON ELECTRICAL RECEPTACLE DURING REMOVAL/INSTALLATION. CONTACT WITH RECEPTACLE PIN CAN CAUSE INJURY.
- (3) Disconnect electrical connector from light.
- B. Install Lower Anticollision Light

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

(1) Make sure that this circuit breaker is open and has safety tag:

UPPER EPC, LIGHTS - LEFT AC BUS

Row Col Number Name

- K 11 B1-98 LOWER ANTI-COLLISION
- (2) Use a nonmetallic scraper to remove any existing sealant from fuselage skin and mounting plate.

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- WARNING: P-D-680 TYPE 1 SOLVENT IS AN AGENT THAT IS FLAMMABLE AND POISONOUS. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN P-D-680 TYPE 1 SOLVENT IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET P-D-680 TYPE 1 SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (3) Clean surfaces with drycleaning solvent (P-D-680 or equivalent).
- (4) Position gasket on mounting flange.

NOTE: On units with cover installed, position gasket between light and cover flanges.

- (5) Connect electrical connector to light.
- WARNING: INTEGRAL FUEL TANKS SEALING COMPOUND (POLYSULFIDE SEALANT B1/2 AND B2) IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN INTEGRAL FUEL TANKS SEALING COMPOUND IS USED.
  - GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET INTEGRAL FUEL TANKS SEALING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (6) Install light and gasket on fuselage and seal attachment screws with (PR-1422) sealant. Wait five minutes and retighten screws to assure proper clamp-up.
- (7) Wipe lens with clean, lintless cloth.

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(8) Apply a peripheral seal of (PR-1422) sealant, faired at approximately a 45 degree angle around mounting plate.

**CAUTION:** TO PREVENT DAMAGE TO LOWER LIGHT, MAKE CERTAIN THAT MOISTURE DRAIN SETSCREW IS REMOVED FROM LENS.

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

UPPER EPC, LIGHTS - LEFT AC BUS				
Row	<u>Col</u>	<u>Number</u>	Name	
К	11	B1-98	LOWER ANTI-COLLISION	

(10) Place ANTICOLLISION LIGHT switch in ON position.

WARNING: DO NOT STARE FIXEDLY AT ANTICOLLISION LIGHTS. TEMPORARY IMPAIRMENT OF VISION CAN OCCUR.

- (11) Check that lower anticollision light comes on and flashes 60 times per minute.
- (12) Place ANTICOLLISION LIGHT switch in OFF position.
- (13) Check that lights go off.

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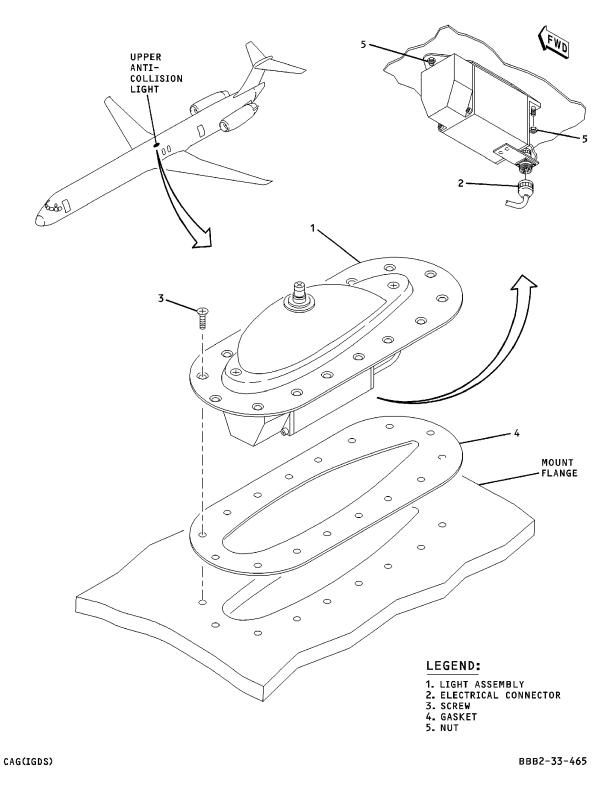
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## Anticollision Lights - Removal/Installation Figure 203/33-42-01-990-804

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## **ANTICOLLISION LIGHTS - ADJUSTMENT/TEST**

### 1. General

A. This procedure contains MSG-3 task card data.

### TASK 33-42-01-710-801

## 2. Operational Check of the Anti-Collision Lights

A. Operational Check Anti-Collision Lights

SUBTASK 33-42-01-710-002

# **WARNING:** DO NOT LOOK AT THE LIGHTS FOR A LONG TIME. THE LIGHTS CAN CAUSE INJURIES TO YOUR EYES.

- (1) Do an operational check anti-collision lights.
  - (a) Place anti-collision switch on the glareshield to ON.
    - 1) Check upper and lower anti-collision lights flashes.
  - (b) Place anti-collision switch to OFF.

------ END OF TASK -------

EFFECTIVITY

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#### FORWARD AND AFT POSITION LIGHTS SYSTEM - DESCRIPTION AND OPERATION

#### 1. General

A. The forward and aft position and strobe lights are used to identify direction of travel as well as position of the air-craft at night. The lights are installed in the leading and trailing edge of each wingtip. Position and strobe lights are controlled by a 3-position position/strobe lights switch placarded OFF, POS and BOTH. The strobe lights are limited through a ground control relay to prevent operation on the ground.

#### WJE ALL PRE MD80-33-112

B. The forward position lights, located in the leading edge of each wingtip, consist of two fixed position lights which come on the same time. A colored filter is installed over each of the forward position lights with the left wingtip red; the right wingtip green.

#### WJE ALL POST MD80-33-112

C. Each light assembly has two lamps, only one operates at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns out or is removed.

#### WJE ALL

- D. The forward position lights are visible over an area from straight up to straight down and from a line straight forward in the line of flight through an angle outboard and aft of 110 degrees. The position lights have power available from the 115-volt ac ground service bus. A step-down transformer located in each wingtip reduces the voltage to the position lights.
- E. The forward strobe light is a self-contained unit powered from the 115-volt ac bus. It is visible over an area from 30 degrees up and down and from a line straight forward in the line of flight through an angle outboard and aft of 110 degrees. The forward strobe lights on the right and left wingtip flash simultaneously at a rate of 60 flashes per minute. The position and strobe lights are covered by a single clear plastic lens.
- F. The aft lights, located in the trailing edge of each wingtip, consist of a single unit incorporating one strobe light and two fixed position lights. The unit also contains a step-down transformer to reduce the voltage to the position lights. The aft strobe light is visible over an area from 30 degrees up and down and through an angle of 70 degrees on each side of a line straight aft in the line of flight. The aft strobe lights on the right and left wingtips flash simultaneously at the rate of 60 flashes per minute. The fixed position lights are visible over an area from straight down and through an angle of 70 degrees on each side of a line straight aft in the line of flight. The aft strobe lights on the right and left wingtips flash simultaneously at the rate of 60 flashes per minute. The fixed position lights are visible over an area from straight up to straight down and through an angle of 70 degrees on each side of a line straight aft in the line of flight. Power is available to the position lights from the ground service bus to the strobe light from the 115-volt ac bus.

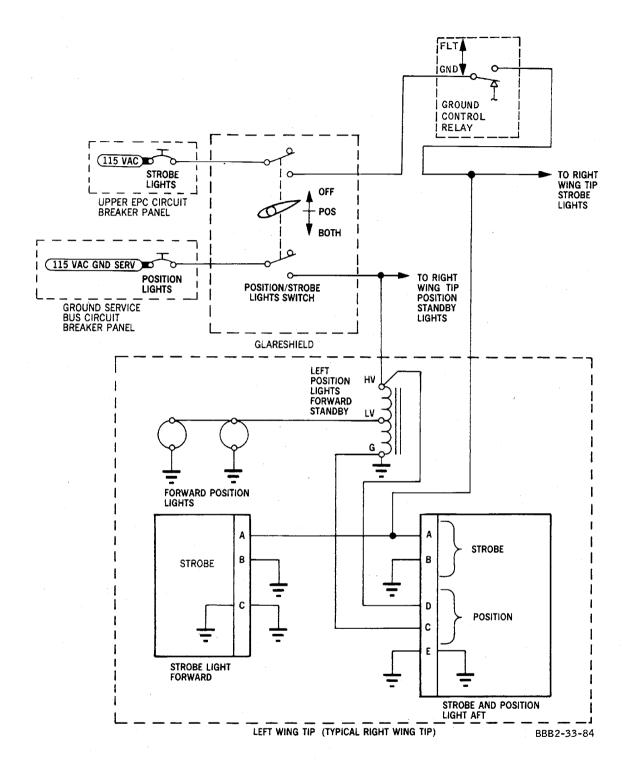
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33-43-00

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MD-80 AIRCRAFT MAINTENANCE MANUAL



Forward and Aft Position Lights -- Simplified Schematic Figure 1/33-43-00-990-805

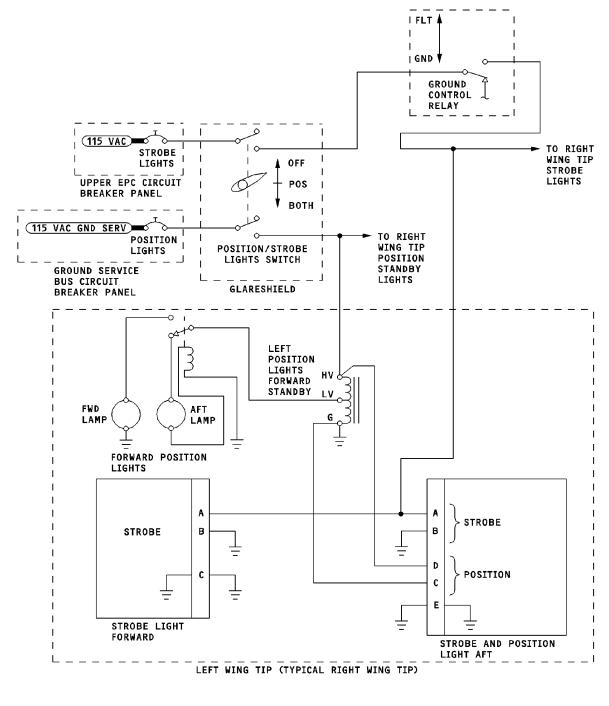
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MD-80 AIRCRAFT MAINTENANCE MANUAL



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WJE ALL POST MD80-33-112

33-43-00

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#### FORWARD AND AFT POSITION LIGHTS - MAINTENANCE PRACTICES

#### 1. General

- A. The removal and installation procedures for the left and the right position and strobe lights are identical. It is not necessary to remove the forward position lights lens to relamp or remove the forward position lights. Forward position lamp replacement is accomplished by removing the access panel on the surface of the wingtip and opening the hinged socket support bracket.
- B. When lamp replacement has been accomplished, actuate the appropriate switch to verify proper operation of the lights.

#### 2. Equipment and Materials

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

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

Name and Number	Manufacturer
Sealant, 93-006 DPM 5697	Dow Corning Midland, MI
Catalyst, 93-006-1 DPM 5697	Dow Corning Midland, MI
High Speed Tape, Scotch 425 DPM 2215	3M Co.
Torque wrench 0-50 inch-pounds (0-5 N·m)	
Sealing compound, low adhesion #PR1773, Class B-1/2 & Class B-2 DMS 2410	PRC-DeSoto International Glendale, CA & Mojave, CA
Sealant, Polysulfide, Aluminized #AC-632, B-2 DMS 1819	Advanced Chemistry and Technology Garden Grove, CA

Table 201

#### 3. Removal/Installation Forward Position and Strobe Lights

A. Remove Forward Position and Strobe Lights. (Figure 201 or Figure 202 or Figure 203 or Figure 204)

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

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

LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

B1-437 POSITION LIGHTS

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

Row Col Number Name

K 10 B1-727 STROBE

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



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TP-80MM-WJE



**WARNING:** DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.

- (2) If removing forward position lamps, perform following:
  - (a) Remove lamp access panel from lower surface of wingtip.
  - (b) Remove terminal block cover.
  - (c) Disconnect electrical wiring from terminal block.
  - (d) Remove retainer.
  - (e) Remove lamp and attached wires.

#### WARNING: THIS LAMP COULD SHATTER IF SCRATCHED OR DAMAGED. USE APPROPRIATE PROTECTION WHEN HANDLING, USING, OR DISPOSING OF LAMP.

- (f) Remove lamp holder.
- (g) Remove lamp holder.
- (h) Remove lamp access panel from lower surface of wingtip.
- **WARNING:** THIS LAMP COULD SHATTER IF SCRATCHED OR DAMAGED. USE APPROPRIATE PROTECTION WHEN HANDLING, USING, OR DISPOSING OF LAMP.
- (3) Remove lamp from lamp holder.
- (4) If removing forward strobe lamp, perform following:
  - (a) Remove forward position light lens from wingtip.
    - <u>NOTE</u>: Clean lens inside surface if lens is removed for any reason, or when darkening or staining of lens is noted. Clean lens with soap and water only. Do not allow petroleum based solvents to contact lens or crazing and cracking could result.
  - (b) Remove aft end plate from strobe light.
    - <u>NOTE</u>: It is not necessary to remove end plate if lamp is held by hinged retainer mechanism.
  - (c) Remove lamp.
- (5) If removing forward strobe light unit, perform following:
  - (a) Disconnect electrical connector from strobe light through access panel provided.
  - (b) Remove strobe light unit with brackets from wingtip.
  - (c) Remove brackets from strobe light and retain for installation with serviceable strobe light.
- B. Install Forward Position and Strobe Lights. (Figure 201 or Figure 202 or Figure 203 or Figure 204)

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TP-80MM-WJE



**WARNING:** AVOID PROLONGED GROUND USE OF NAV LIGHTS TO REDUCE OVERHEATING OF INSIDE LENS SURFACES. HEAT EMBRITTLEMENT AND SHRINKAGE OF POLYCARBONATE CAUSES CRAZING AND CRACKING OF LENS DIRECTLY ABOVE LAMP.

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

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

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row Col Number Name</u>

B1-437 POSITION LIGHTS

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

Row Col Number Name

K 10 B1-727 STROBE

- (2) If installing forward position lamps, perform following:
  - (a) Install lamp holder.
  - (b) Install lamp and attached wires.

NOTE: Pins in lamp mate with lamp holder for alignment.

(c) Install retainer.

**CAUTION:** DURING STROBE LAMP INSTALLATION, AVOID EXCESSIVE SIDE PRESSURE ON TRIGGER BAND CONTACT SPRING. EXCESSIVE PRESSURE CAN CAUSE SPRING DISTORTION AND SUBSEQUENT FAILURE.

- (d) Connect electrical wiring.
- (e) Install terminal block cover.
- (f) Install lamp access panel.
- (g) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name B1-437 POSITION LIGHTS

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

<u>Row Col Number Name</u>

- K 10 B1-727 STROBE
- (h) Place appropriate switch in POS position to check proper operation of lights.

## WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 POST MD80-33-112

(3) If installing forward position lamps, perform as follows:

- (a) Install lamp in lamp holder.
- (b) Install lamp access panel.

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



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WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 POST MD80-33-112 (Continued)

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

LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> B1-437 POSITION LIGHTS

## UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
K	10	B1-727	STROBE

- (d) Place appropriate switch in POS position to check proper operation of lights.
  - <u>NOTE</u>: Each light assembly has two lamps, only one is in operation at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns out or is removed.

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

- (4) If installing forward strobe lamp, perform following:
  - (a) Install lamp in strobe light.
  - (b) Clean lamp surface of fingerprints and contaminants.
  - (c) Install aft end plate on strobe light, if previously removed.
  - WARNING: NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.
  - (d) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-437	POSITION LIGHTS

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
К	10	B1-727	STROBE

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MD-80 AIRCRAFT MAINTENANCE MANUAL

- WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPEN. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.
- WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (5) Open these circuit breakers and install safety tags:

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

 K
 30
 B1-23
 LEFT GROUND CONTROL RELAY

 WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893
 LEFT GROUND CONTROL RELAY

 K
 33
 B1-23
 LEFT GROUND CONTROL RELAY

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

WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.

- (a) Place appropriate switch in BOTH position to check proper operation lights.
- (b) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> WJE 417, 419, 421, 423, 865, 869, 871, 872 K 30 B1-23 LEFT GROUND CONTROL RELAY WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893 K 33 B1-23 LEFT GROUND CONTROL RELAY

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 If installing forward strobe light unit, perform following:

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

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

LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> B1-437 POSITION LIGHTS

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

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

K 10 B1-727 STROBE

- (d) Install brackets on strobe light.
- (e) Install strobe light on wingtip.



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For Instructional Use Only



- **CAUTION:** SEQUENCE OF INSTALLATION IS MANDATORY TO AVOID PRELOADING AND SUBSEQUENT CRACKING OF LENS.
- **CAUTION:** PERIODIC RETORQUING OF LENS ATTACHMENTS WITH WORN CUSHIONED WASHERS MAY LEAD TO CRACKING AT ATTACHMENT AREA.
- **CAUTION:** DO NOT ALLOW PETROLEUM SOLVENTS TO CONTACT LENS. CRAZING OR CRACKING MAY RESULT.
- (f) Connect electrical connector to strobe light through access panel.

NOTE: Cracked lens repair procedures are contained in the Approved Repairs section.

(g) Install wing tip lens as follows:

## WJE 875-879; WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-57-203

NOTE: See paragraph 5. to replace wing tip lens. The lenses will not crack.

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

(h) Check lens for cleanliness and wash with mild detergent and dry with lint free cloth.

#### WJE 401-404

- (i) Check lens attach hole for elongation, cracking, or retainer disbonding.
- (j) Check lens attachment area for elongation, cracking, or disbonding.

# **WARNING:** SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.

- USE IN AN AREA OPEN TO THE AIR.
- · CLOSE THE CONTAINER WHEN NOT USED.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:
  - MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (k) Apply bead of silicone 93-006 sealant to perimeter of wing attachment flang at base of flange.
- **WARNING:** DO NOT OVERTORQUE SCREWS. IF SCREWS BECOME LOOSE, REMOVE AND INSPECT CONDITION OF HOLES AND NUTPLATES. CLEAR ANY OBSTRUCTIONS. REINSTALL SCREWS AND TORQUE TO PROPER VALUE.
- Install lens and sequence wing tip lens attachments by tightening diagonally opposing to and bottom screws to avoid preloading. Recommended torque values are 12 to 15 inchpounds (1.40 to 1.70 N.m)
  - NOTE: Some older configurations of wing tip structure have fourteen nutplates for lens installation. If fourteen nutplates are present, the forward and aft nutplates (two each, top and bottom) are not required to be sued with lenses which have only ten holes.



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#### WJE 401-404 (Continued)

- **WARNING:** SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:
  - MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (m) Apply fillet silicone 93-006 sealant to attachment area. Wipe edge of lens to remove excess sealant.
- (n) Allow sealant to cure. If inclement weather or dispatch is required prior to cure, apply speedtape to attachment area and around edge of lens. Tape should not extend beyond 1.00 inch (25.4mm) of lens edge.

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

**WARNING:** DO NOT OVERTORQUE SCREWS. IF SCREWS BECOME LOOSE, REMOVE AND INSPECT CONDITION OF HOLES AND NUTPLATES. CLEAR ANY OBSTRUCTIONS. REINSTALL SCREWS AND TORQUE TO PROPER VALUE.

- (o) Sequence wing tip lens attachments by tightening diagonally opposing top and bottom screws to avoid preloading. Recommended torque values are 12 to 15 inch-pounds (1.40 to 1.70 N.m).
  - <u>NOTE</u>: Some older configuration of wing tip structure have fourteen nutplates for lens installation. If fourteen nutplates are present, the forward and aft nutplates (two each, top and bottom) are not required to be used with lenses which have only ten hole.

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

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

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-437	POSITION LIGHTS

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

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
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K 10 B1-727 STROBE



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MD-80 AIRCRAFT MAINTENANCE MANUAL

WARNING: NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.

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

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

 UPPER EPC, LAC BUS

 Row
 Col
 Number
 Name

 WJE 417, 419, 421, 423, 865, 869, 871, 872
 K
 30
 B1-23
 LEFT GROUND CONTROL RELAY

 WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893
 LEFT GROUND CONTROL RELAY

 K
 33
 B1-23
 LEFT GROUND CONTROL RELAY

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

WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.

(r) Place appropriate switch on BOTH position to check proper operation of lights.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 POST MD80-33-112

<u>NOTE</u>: Each light assembly has two lamps, only one is in operation at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns to or is removed.

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

Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

<u>Row Col Number Name</u>

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

30 B1-23 LEFT GROUND CONTROL RELAY

WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881,

883, 884, 886, 887, 891-893

Κ

K 33 B1-23 LEFT GROUND CONTROL RELAY

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

(6) Removal/Installation Aft Position and Strobe Lights:

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

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

LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> B1-437 POSITION LIGHTS

EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 33-43-01

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

Row	Col	<u>Number</u>	<u>Name</u>
K	10	B1-727	STROBE

**WARNING:** DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.

- (b) If removing aft position lamps, perform following:
- (c) If removing aft position lamps (aircraft 116-150, 157, 160-290), perform following:
- (d) Remove lens attaching screws and remove lens from light
- (e) If removing aft strobe lamp, perform following:
  - 1) Remove lens attaching screws and remove lens from light.
  - 2) Remove inboard end plate of strobe light.
    - <u>NOTE</u>: It is not necessary to remove end plate if lamp is held by hinged retainer mechanism.
  - 3) Remove strobe lamp.
- (f) If removing aft strobe light unit, perform following:
  - 1) Disconnect electrical connector from light through access panel provided.
  - 2) Remove strobe light unit from wingtip.
- (7) Install Aft Position and Strobe Lights.

#### WARNING: AVOID PROLONGED GROUND USE OF NAV LIGHTS TO REDUCE OVERHEATING OF INSIDE LENS SURFACES. HEAT EMBRITTLEMENT AND SHRINKAGE OF POLYCARBONATE CAUSES CRAZING AND CRACKING OF LENS DIRECTLY ABOVE LAMP.

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

LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name B1-437 POSITION LIGHTS

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

Row Col Number Name

K 10 B1-727 STROBE

- (b) If installing aft position lamps, perform following:
  - 1) Install position lamps in lamp bracket.
  - 2) Clean lamp surface of fingerprints and contaminants.

#### WJE 401-404, 415-427, 429, 861-866, 868, 869, 871, 872, 891

3) Tighten lamp mounting screw.

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

4) Connect terminal lugs to terminals, and tighten terminal screws.

EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 33-43-01

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

LEFT CONSOLE, GROUND SERVICE BUS

<u>Row Col Number Name</u>

B1-437 POSITION LIGHTS

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

<u>Row Col Number Name</u>

K 10 B1-727 STROBE

(d) Place appropriate switch in POS position to check proper operation of lights.

## WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 POST MD80-33-112

<u>NOTE</u>: Each light assembly has two lamps, only one is in operation at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns out or is removed.

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

- (e) Place appropriate switch in OFF position. Light should go off.
- (8) If installing aft strobe lamp, perform following:
  - (a) Make sure that these circuit breakers are open and have safety tags:

#### LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-437	POSITION LIGHTS

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

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

K 10 B1-727 STROBE

- **CAUTION:** DURING STROBE LAMP INSTALLATION, AVOID EXCESSIVE SIDE PRESSURE ON TRIGGER BAND CONTACT SPRING. EXCESSIVE PRESSURE CAN CAUSE SPRING DISTORTION AND SUBSEQUENT FAILURE.
- (b) Install lamp in strobe light.
- (c) Clean lamp surface of fingerprints and contaminants.
- (d) Install lens light unit.
- (e) Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> B1-437 POSITION LIGHTS

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

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
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K 10 B1-727 STROBE

EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 33-43-01

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TP-80MM-WJE



WARNING: NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.

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

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

 UPPER EPC, LAC BUS

 Row
 Col
 Number
 Name

 WJE 417, 419, 421, 423, 865, 869, 871, 872
 LEFT GROUND CONTROL RELAY

 K
 30
 B1-23
 LEFT GROUND CONTROL RELAY

 WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893
 LEFT GROUND CONTROL RELAY

 K
 33
 B1-23
 LEFT GROUND CONTROL RELAY

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

WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.

(g) Place appropriate switch in BOTH position to check proper operation of lights.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 POST MD80-33-112

<u>NOTE</u>: Each light assembly has two lamps, only one is in operation at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns out or is removed.

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

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

#### UPPER EPC, L AC BUS

Row Col Number Name

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

K 30 B1-23 LEFT GROUND CONTROL RELAY

WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881,

883, 884, 886, 887, 891-893

K 33 B1-23 LEFT GROUND CONTROL RELAY

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

- (9) If installing aft strobe light unit, perform following:
  - WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
  - (a) Make sure that these circuit breakers are open and have safety tags:

LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

B1-437 POSITION LIGHTS

33-43-01

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

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

#### K 10 B1-727 STROBE

(b) Install light unit in trailing edge of wing and secure with attaching screws.

**WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1223, SEALANT/POLYSULFIDE ALUMINIZED (DMS QPL 1819)

HAZMAT 1155, SEALANT/LOW ADHESION (DMS QPL 2410; supersedes DPM 256-1)

HAZMAT 1000, REFER TO MSDS

- After the installation of the aft position light housing, the voids between the light housing and wind tip structure shall be filled with sealing compound (DMS 2410). The butt joint shall be sealed with polysulfide sealant (DMS 1819) and the sealant shall be flushed off to the surrounding structure.
- (c) Connect electrical connector to light through access panel.

Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
		B1-437	POSITION LIGHTS

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

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

- K 10 B1-727 STROBE
- WARNING: NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.
- WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (d) Open these circuit breakers and install safety tags:

UPPER <u>Row</u>		L AC BUS <u>Number</u>	Name	
<b>WJE 41</b>	7, 419,	421, 423, 865	5, 869, 871, 872	
K	30	B1-23	LEFT GROUND CONTROL RELAY	
WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893				
K	33	B1-23	LEFT GROUND CONTROL RELAY	

33-43-01

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

WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.

1) Place appropriate switch in BOTH position to check proper operation of lights.

#### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 POST MD80-33-112

<u>NOTE</u>: Each light assembly has two lamps, only one is in operation at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns out or is removed.

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

Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS

Row Col Number Name

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

K 30 B1-23 LEFT GROUND CONTROL RELAY

WJE 401-411, 415, 416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893

K 33 B1-23 LEFT GROUND CONTROL RELAY

- WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
  - WARNING: SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
    - USE IN AN AREA OPEN TO THE AIR.
    - CLOSE THE CONTAINER WHEN NOT USED.
  - **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:
    - MORE PRECAUTIONARY DATA.
    - APPROVED SAFETY EQUIPMENT.
    - EMERGENCY MEDICAL AID.
    - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
  - Apply fillet of silicone 93-006 sealant around trailing edge where it meets lens. Allow 24 hours sealant cure time.
  - Apply fillet of silicone 93-006 sealant around Electrical Disconnect Access Panel. Allow 24 hours sealant cure time.

<u>NOTE</u>: If aircraft is to fly within 24 hours, cover the sealant with High Speed tape to prevent erosion of sealant. Tape may be removed after 24 hours.

## WJE 875-879; WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-57-203

- (10) Wing Tip Lens Installation
  - <u>NOTE</u>: Replace wing tip lens with P/N 5965110-1 for left side and P/N 5965110-2 for right side. Repair node seals and doublers as required.
    - (a) Install wing tip lens as follows:



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WJE 875-879; WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-57-203 (Continued)

- 1) Check lens for cleanliness and wash with mild detergent and dry with lint free cloth.
- 2) Check lens attach holes for elongation, cracking, or retainer disbonding.
- 3) Check lens attachment area for elongation, cracking, or disbonding.

**WARNING:** SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.

- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:
  - MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- 4) Apply bead of silicone 93-006 sealant to perimeter of wing attachment flang at base of flange.
- WARNING: DO NOT OVERTORQUE SCREWS. IF SCREWS BECOME LOOSE, REMOVE AND INSPECT CONDITION OF HOLES AND NUTPLATES. CLEAR ANY OBSTRUCTIONS. REINSTALL SCREWS AND TORQUE TO PROPER VALUE.
- Install lens and sequence wing tip lens attachments by tightening diagonally opposing top and bottom screws to avoid preloading. Recommended torque values are 12 to 15 inch-pounds (1.40 to 1.70 N.m)
  - <u>NOTE</u>: Some older configurations of wing tip structure have fourteen nutplates for lens installation. If fourteen nutplates are present, the forward and aft nutplates (two each, top and bottom) are not required to be used with lenses which have only ten holes.
- 6) Apply fillet silicone 93-006 sealant to attachment area. Wipe edge of lens to remove excess sealant.
- 7) Allow sealant to cure. If inclement weather or dispatch is required prior to cure, apply speedtape to attachment area and around edge of lens. Tape should not extend beyond 1.00 inch (25.4mm) of lens edge.

Remove the safety tags and close these circuit breakers:

LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	Number	<u>Name</u>
		B1-437	POSITION LIGHTS

UPPER EPC, LIGHTS - LEFT AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u>

K 10 B1-727 STROBE

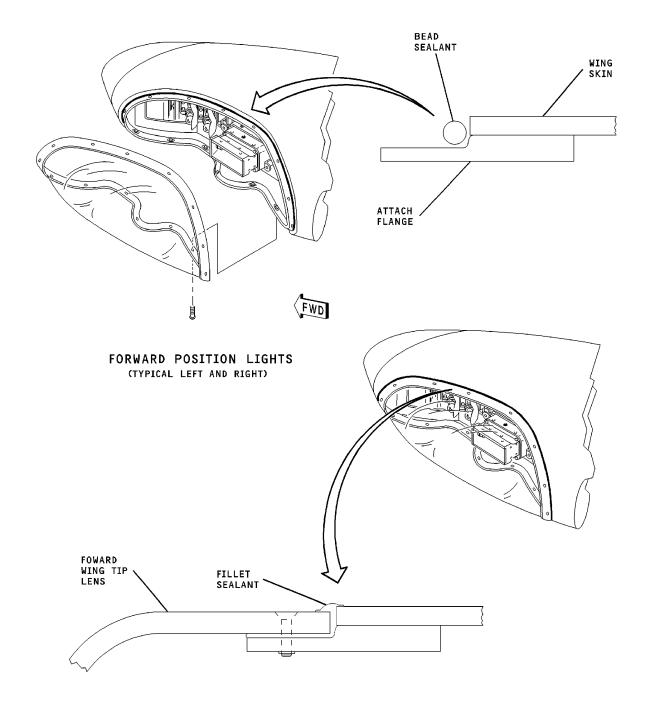


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WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893



CAG(IGDS)

BBB2-33-413

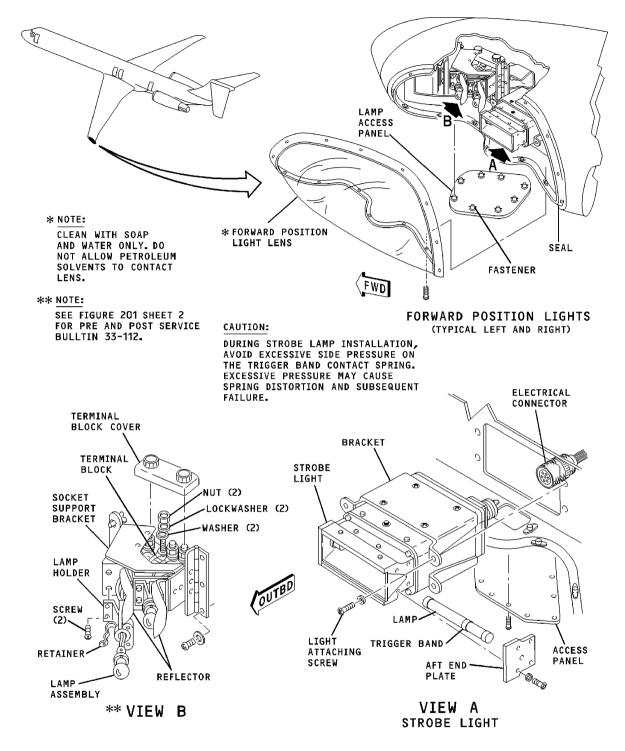
#### Forward Position Lights - Removal/Installation Figure 201/33-43-01-990-818

EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 33-43-01

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MD-80 AIRCRAFT MAINTENANCE MANUAL



CAG(IGDS)

BBB2-33-360A

Forward Position Lights -- Removal/Installation Figure 202/33-43-01-990-813 (Sheet 1 of 2)

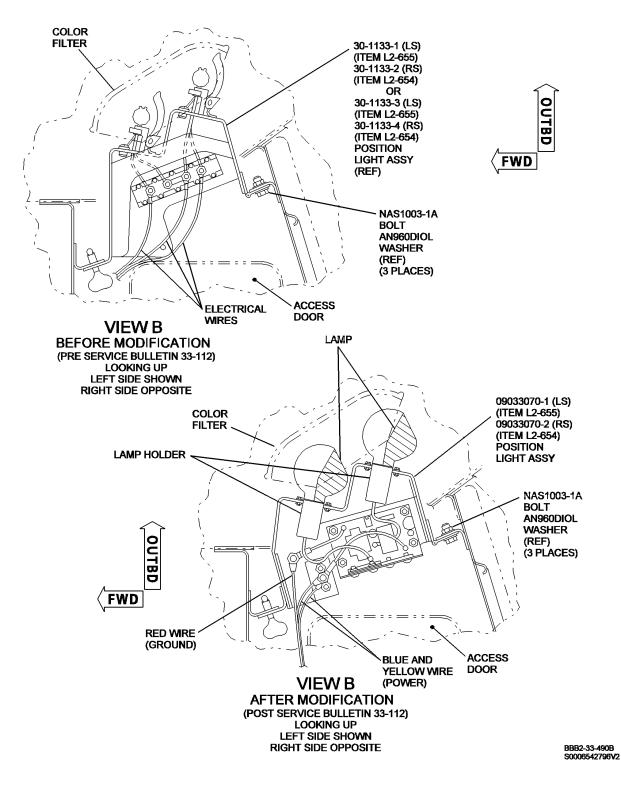
EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 33-43-01

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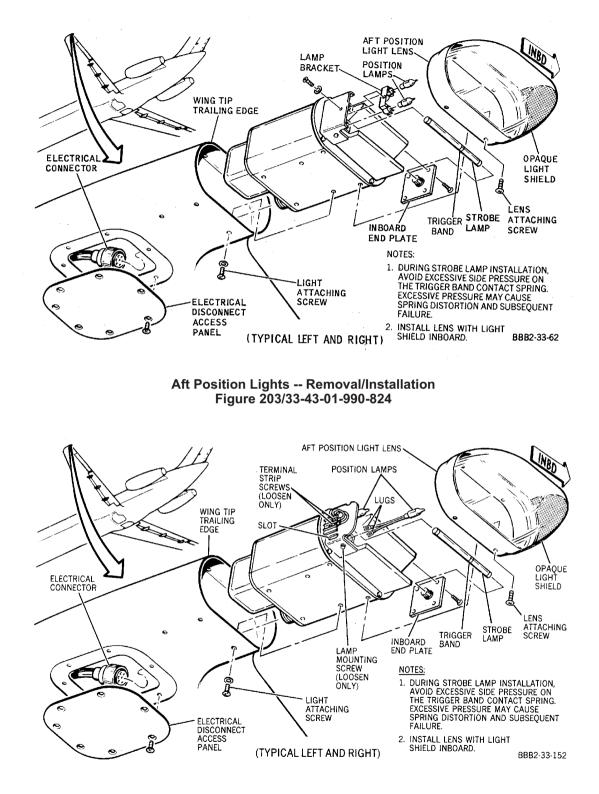


Forward Position Lights -- Removal/Installation Figure 202/33-43-01-990-813 (Sheet 2 of 2)

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MD-80 AIRCRAFT MAINTENANCE MANUAL



#### Aft Position Lights -- Removal/Installation Figure 204/33-43-01-990-825

EFFECTIVITY WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 33-43-01

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#### 4. <u>Removal/Installation Wingtip Lens Seal</u>

- A. It is permissible to replace 12 inch minimum portions of seal per the following instructions.
  - (1) Make cuts midway between retaining tentacles on each end of seal section being replaced. Remove section.
  - (2) If condition of seal is in doubt, replace entire seal.
  - (3) Cut new seal material to length required. Make sure there will be no gap between butted ends of old and new seals. Retain remaining new seal material for future use. Install new seal material by pulling retaining tentacles through appropriate holes provided. Apply small amount of white (RTV732) to the butted seal ends to keep them together, maintaining smooth seal contours.

# WJE 875-879; WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-57-203

#### 5. Wing Tip Lens Installation

Wing Tip Lens Installation

- NOTE: Replace wing tip lens with P/N 5965110-1 for left side and P/N 5965110-2 for right side. Repair node seals and doublers as required in Service Bulletin 57-203 Rev 1. (Figure 205)
- A. Install wing tip lens as follows: (Figure 205)
  - (1) Check lens for cleanliness and wash with mild detergent and dry with lint free cloth.
  - (2) Check lens attach holes for elongation, cracking, or retainer disbonding.
  - (3) Check lens attachment area for elongation, cracking, or disbonding.
  - (4) Apply bead of silicone 93-006 sealant to perimeter of wing attachment flang at base of flange .
  - (5) Install lens and sequence wing tip lens attachments by tightening diagonally opposing top and bottom screws to avoid preloading. Recommended torque values are 12 to 15 inch-pounds (1.40 to 1.70 N·m).
    - NOTE: Some older configurations of wing tip structure have fourteen nutplates for lens installation. If fourteen nutplates are present, the forward and aft nutplates (two each, top and bottom) are not required to be used with lenses which have only ten holes.
  - (6) Apply fillet silicone 93-006 sealant to attachment area. Wipe edge of lens to remove excess sealant. (Figure 205)
  - (7) Allow sealant to cure. If inclement weather or dispatch is required prior to cure, apply speedtape to attachment area and around edge of lens. Tape should not extend beyond 1.00 inch (25.4 mm) of lens edge.
  - (8) Remove the safety tags and close these circuit breakers:

#### LEFT CONSOLE, GROUND SERVICE BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>	
		B1-437	POSITION LIGHTS	

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

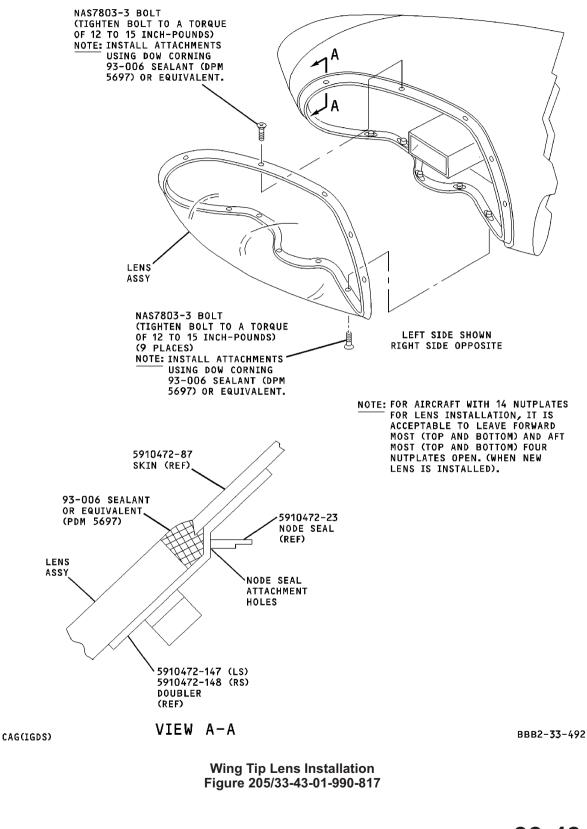
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>		
К	10	B1-727	STROBE		



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MD-80 AIRCRAFT MAINTENANCE MANUAL



EFFECTIVITY WJE 875-879; WJE 401-411, 415-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 886, 887, 891-893 POST DC9-57-203



#### FORWARD AND AFT POSITION LIGHTS - MAINTENANCE PRACTICES

#### 1. General WJE

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- Α. The removal and installation procedures for the left and the right position and strobe lights are WJE identical. It is not necessary to remove the forward position lights lens to relamp or remove the WJE forward position lights. Forward position lamp replacement is accomplished by removing the access WJE panel on the surface of the wingtip and opening the hinged socket support bracket. WJE
- B. When lamp replacement has been accomplished, actuate the appropriate switch to verify proper WJE operation of the lights. WJE

#### 2. Equipment and Materials WJE

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

- NOTE: It is possible that some materials in the Equipment and Materials List cannot be used for some or WJE all of their necessary applications. Before you use the materials, make sure the types, quantities, WJE and applications of the materials necessary are legally permitted in your location. All persons WJE WJE must obey all applicable federal, state, local, and provincial laws and regulations when it is necessary to work with these materials. WJE
- Table 201 W.IF WJE WJE Name and Number Manufacturer WJE Sealant, 93-006 Dow Corning WJE DPM 5697 Midland, MI Dow Corning WJE Catalyst, 93-006-1 WJE DPM 5697 Midland. MI High Speed Tape, Scotch 425 3M Co. WJE **DPM 2215** W.IF Torque wrench 0-50 inch-pounds (0-5 N·m) WJE Sealing compound, low adhesion PRC-DeSoto International W.IF #PR1773, Class B-1/2 & Class B-2 Glendale, CA & Mojave, CA WJE DMS 2410 WJE WJE Sealant, Polysulfide, Aluminized Advanced Chemistry and Technology WJE #AC-632. B-2 Garden Grove, CA DMS 1819 WJE **Removal/Installation Forward Position and Strobe Lights** WJE 3. Α. Remove Forward Position and Strobe Lights (Figure 201 or Figure 202) WJE
  - - WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
  - Open these circuit breakers and install safety tags: (1)
    - LEFT CONSOLE, GROUND SERVICE BUS
      - Row Col Number Name B1-437 **POSITION LIGHTS**
- 썂냬툳 **UPPER EPC, LIGHTS - LEFT AC BUS** WJE

Col Number Row Name

Κ 10 B1-727 STROBE

EFFECTIVITY WJE 412, 414



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WJE WJE		WAF	RNING	<b>G:</b> DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.						
WJE		(2)	If removing forward position lamps, perform following:							
WJE WJE WJE			<u>NOT</u>	<ul> <li><u>E</u>: When a Primary Lamp burns out, the backup lamp should be relocated to the Primary lamp position. A new lamp should then be installed in the backup lamp position. Adherence to this practice will assure maximum lamp life and optimize lamp usage.</li> </ul>						
WJE			(a)	Remove lamp access panel from lower surface of wingtip.						
WJE			(b)	Loosen Primary lamp retaining screw.						
WJE			(c)	Pull lamp from Primary lamp socket.						
WJE			(d)	Loosen backup lamp retaining screw.						
WJE			(e)	Pull lamp from backup lamp socket.						
WJE			(f)	Store serviceable lamps in a safe clean location until needed for assembly.						
WJE		(3)	If rer	noving forward strobe lamp, perform following:						
WJE			(a)	Remove forward position light lens from wingtip.						
WJE WJE WJE WJE				NOTE: Lamp replacement procedure applies to 701363, 702496, or 702536 light assemblies only Lamp replacement for 031100-1 must be accomplished in accordance with BFGoodrich CMM 33-40-12. Lamp replacement for 031100-1 is not recommended due to required testing of assembly after maintenance on unit is performed.						
WJE WJE				<u>NOTE</u> : Clean lens inside surface if lens is removed for any reason, or when darkening or staining of lens is noted. Clean lens with soap and water only. Do not allow petroleum based solvents to contact lens or crazing and cracking could result.						
WJE			(b)	Remove aft end plate from strobe light.						
WJE WJE				<u>NOTE</u> : It is not necessary to remove end plate it lamp is held by hinged retainer mechanism.						
WJE			(c)	Remove lamp.						
WJE		(4)	If rer	noving forward strobe light unit, perform following:						
WJE			(a)	Disconnect electrical connector from strobe light through access panel provided.						
WJE			(b)	Remove strobe light unit with brackets from wingtip.						
WJE			(c)	Remove brackets from strobe light and retain for installation with serviceable strobe light.						
WJE	В.	Insta	all For	ward Position and Strobe Lights (Figure 201 or Figure 202)						
WJE		(1)	If ins	stalling forward position lamps, perform following:						
WJE			(a)	Install removed backup lamp in Primary lamp socket.						
WJE			(b)	Ensure lamp is fully seated, then tighten Primary lamp retaining screw.						
WJE				NOTE: Pins in lamp mate with lamp holder for alignment.						
WJE			(c)	Install new lamp in backup lamp socket.						
WJE WJE			CAU	ITION: DURING STROBE LAMP INSTALLATION, AVOID EXCESSIVE SIDE PRESSURE ON TRIGGER BAND CONTACT SPRING. EXCESSIVE PRESSURE CAN CAUSE SPRING DISTORTION AND SUBSEQUENT FAILURE.						
WJE			(d)	Ensure lamp is fully seated, then tighten Primary lamp retaining screw.						
WJE			(e)	Install lamp access panel.						

EFFECTIVITY -WJE 412, 414 33-43-01

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TP-80MM-WJE



				/		
WJE		(f)	Remov	e the sa	afety tags an	d close these circuit breakers:
<b>MJE</b>			LEFT C	ONSO	LE, GROUN	ID SERVICE BUS
WJE			Row	<u>Col</u>	<u>Number</u>	Name
WJE					B1-437	POSITION LIGHTS
WJE			UPPER	R EPC,	LIGHTS - LE	EFT AC BUS
WJE			<u>Row</u>	Col	<u>Number</u>	Name
WJE			K	10	B1-727	STROBE
WJE		(g)	Place a	ippropri	ate switch in	POS position to check proper operation of lights.
WJE	(2)	lf ins	stalling fo	orward s	strobe lamp,	perform following:
WJE		(a)	Install la	amp in	strobe light.	
WJE		(b)	Clean la	amp su	rface of finge	erprints and contaminants.
WJE		(c)	Install a	aft end p	plate on strol	be light, if previously removed.
WJE		(d)	Remov	e the sa	afety tags an	d close these circuit breakers:
<b>MJE</b>			LEFT C	ONSO	LE, GROUN	ID SERVICE BUS
WJE			Row	<u>Col</u>	<u>Number</u>	Name
WJE					B1-437	POSITION LIGHTS
ЖЛЕ				PPC		EFT AC BUS
WJE			Row	<u>Col</u>	<u>Number</u>	Name
WJE			ĸ	10	B1-727	STROBE
WJE WJE WJE		WAF		INTER OPENE SYSTE	RUPTED WI ED. MAKE C MS ARE IN	RICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS HEN GROUND SENSING CIRCUIT BREAKERS ARE ERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED CORRECT POSITIONS TO PREVENT INADVERTENT HUTDOWN OF EQUIPMENT.
WJE WJE		WAF			OT STARE AT	STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION RESULT.
WJE WJE WJE		WAR		CIRCU	IT BREAKEI	ETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE RS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY D DAMAGE TO EQUIPMENT CAN OCCUR.
WJE		(e)	Open th	nis circu	uit breaker ar	nd install safety tag:
<b>WJE</b>			UPPER	R EPC,	L AC BUS	
WJE			Row	<u>Col</u>	<u>Number</u>	Name
WJE			K	33	B1-23	LEFT GROUND CONTROL RELAY
WJE			Place a	ippropri	ate switch in	BOTH position to verify proper operation of lights.
WJE	(3)	lf ins	stalling fo	orward s	strobe light u	nit, perform following:

EFFECTIVITY -WJE 412, 414 33-43-01

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WJE WJE	WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
MIE MIE MIE	<ul> <li>(a) Open these circuit breakers and install safety tags:</li> <li>LEFT CONSOLE, GROUND SERVICE BUS         <ul> <li><u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u></li> <li>B1-437 POSITION LIGHTS</li> </ul> </li> </ul>
MIE MIE MIE	UPPER EPC, LIGHTS - LEFT AC BUS         Row       Col       Number       Name         K       10       B1-727       STROBE         (b)       Install brackets on strobe light.       Install strobe light on wingtip.
WJE WJE WJE	<ul> <li>(d) Connect electrical connector to strobe light through access panel.</li> <li><u>NOTE</u>: Cracked lens repair procedures are contained in the Approved Repairs section (PAGEBLOCK 33-43-01/801).</li> </ul>
WJE WJE	<b>CAUTION:</b> SEQUENCE OF INSTALLATION IS MANDATORY TO AVOID PRELOADING AND SUBSEQUENT CRACKING OF LENS.
WJE WJE	<b>CAUTION:</b> PERIODIC RETORQUING OF LENS ATTACHMENTS WITH WORN CUSHIONED WASHERS MAY LEAD TO CRACKING AT ATTACHMENT AREA.
WJE WJE	CAUTION: DO NOT ALLOW PETROLEUM SOLVENTS TO CONTACT LENS. CRAZING OR CRACKING MAY RESULT. (e) Install wing tip lens as follows:
WJE	1) Check lens for cleanliness and wash with mild detergent and dry with lint free cloth.
WJE WJE WJE	WARNING: DO NOT OVERTORQUE SCREWS. IF SCREWS BECOME LOOSE, REMOVE AND INSPECT CONDITION OF HOLES AND NUTPLATES. CLEAR ANY OBSTRUCTIONS. REINSTALL SCREWS AND TORQUE TO PROPER VALUE.
WJE WJE WJE	<ol> <li>Sequence wing tip lens attachments by tightening diagonally opposing top and bottom screws to avoid preloading. Recommended torque values are 12 to 15 inch- pounds (1.40 to 1.70 N·m).</li> </ol>
WJE WJE WJE	<u>NOTE</u> : Some older configurations of wing tip structure have fourteen nutplates for lens installation. If fourteen nutplates are present, the forward and aft nutpates (two each, top and bottom) are not required to be used with lenses which have only ten holes.
WJE WJE WJE	<ul> <li>WARNING: SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.</li> <li>USE IN AN AREA OPEN TO THE AIR.</li> <li>CLOSE THE CONTAINER WHEN NOT USED.</li> </ul>

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(WARNING PRECEDES) WJE WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS WJE MSDS FOR: WJE WJE MORE PRECAUTIONARY DATA. APPROVED SAFETY EQUIPMENT. WJE EMERGENCY MEDICAL AID. W.IF TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES W.IF FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT. WJE Mix silicone 93-006 sealant per manufactures instructions. WJE 3) Rapid cure sealants, as specified in Midwest Airlines' EA 51-014, may be WJE a) substituted in lieu of the silicone 93-006 sealant (DPM 5697). WJE Fill and fair the sealant flush with the wing tip forward lens and the wing tip. WJE 4) 5) Encapsulate the wing tip attachment bolt heads. WJE Wipe edge of lens to remove excess sealant. 6) WJE NOTE: It is acceptable to omit the sealant application in event of inclement weather WJE and/or rapid aircraft dispatch provided that speedtape (DPM 2215) is W.IF applied over the gap between the wingtip forward lens and wingtip. WJE Sufficient overlap and tape-to-structure contact is required around tape WJE perimeter to prohibit in flight peeling. Tape should not extend beyond WJE 1.00-inch of lens edge. Reference MD-80 Structural Repair Manual Chapter W.IF 51-02 for additional speedtape provisions. Sealing the assembly in WJE WJE accordance with the associate aircraft maintenance manual procedures shall be conducted prior to completion of the next scheduled service check WJE (75 flight hours). WJE Remove the safety tags and close these circuit breakers: WJE (f) WIE LEFT CONSOLE, GROUND SERVICE BUS WJE Row Col Number Name B1-437 **POSITION LIGHTS** WJE WJE **UPPER EPC, LIGHTS - LEFT AC BUS** WJE Row Col Number Name Κ 10 B1-727 STROBE WJE

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WJE WJE WJE WJE	WARNING: NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.
WJE WJE	WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.
WJE WJE WJE	WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
WJE	(g) Open this circuit breaker and install safety tag:
WJE	UPPER EPC, L AC BUS
WJE	<u>Row Col Number Name</u>
WJE	K 33 B1-23 LEFT GROUND CONTROL RELAY
WJE	Place appropriate switch on BOTH position to verify proper operation of lights.
WJE	<u>NOTE</u> : With Service Bulletin 33-112 incorporated, each light assembly has two lamps,
WJE WJE	only one is in operation at a time. The Fwd lamp which is closest to the camlock will come on first. The Aft lamp will come on only when the Fwd lamp burns out or
WJE	is removed.
WJE	Remove the safety tag and close this circuit breaker:
WJE	UPPER EPC, L AC BUS
WJE	<u>Row Col Number Name</u>
WJE	K 33 B1-23 LEFT GROUND CONTROL RELAY
WJE	4. Removal/Installation Aft Position and Strobe Lights
WJE	A. Remove Aft Position and Strobe Lights.
WJE	WARNING: TAG AND SAFETY CIRCUIT BREAKERS.
WJE	(1) Open these circuit breakers and install safety tags:
WJE	LEFT CONSOLE, GROUND SERVICE BUS
WJE	
	<u>Row Col Number Name</u>
WJE	Row Col Number Name B1-437 POSITION LIGHTS
MNE MNE	B1-437 POSITION LIGHTS
₩JE	B1-437 POSITION LIGHTS UPPER EPC, LIGHTS - LEFT AC BUS
WJE WJE	B1-437 POSITION LIGHTS UPPER EPC, LIGHTS - LEFT AC BUS Row Col Number Name
MJE MJE MJE MJE	B1-437 POSITION LIGHTS UPPER EPC, LIGHTS - LEFT AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> K 10 B1-727 STROBE WARNING: DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE
MJE MJE MJE MJE MJE MJE	B1-437       POSITION LIGHTS         UPPER EPC, LIGHTS - LEFT AC BUS         Row       Col         Number       Name         K       10         B1-727       STROBE         WARNING:       DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.         (2)       If removing aft position lamps, perform the following:         (a)       Remove lens attaching screws and remove lens from light.
MJE MJE MJE MJE MJE MJE MJE	B1-437       POSITION LIGHTS         UPPER EPC, LIGHTS - LEFT AC BUS         Row       Col         Number       Name         K       10         B1-727       STROBE         WARNING:       DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.         (2)       If removing aft position lamps, perform the following:         (a)       Remove lens attaching screws and remove lens from light.         (b)       Loosen (do not remove) terminal screws, and disconnect terminal lugs from terminals.
MJE MJE MJE MJE MJE MJE MJE	B1-437       POSITION LIGHTS         UPPER EPC, LIGHTS - LEFT AC BUS         Row       Col       Number         K       10       B1-727         STROBE         WARNING:       DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.         (2)       If removing aft position lamps, perform the following:         (a)       Remove lens attaching screws and remove lens from light.         (b)       Loosen (do not remove) terminal screws, and disconnect terminal lugs from terminals.         (c)       Loosen (do not remove) lamp mounting screw.
MJE MJE MJE MJE MJE MJE MJE MJE	B1-437       POSITION LIGHTS         UPPER EPC, LIGHTS - LEFT AC BUS         Row       Col         Number       Name         K       10         B1-727       STROBE         WARNING:       DANGEROUS VOLTAGES EXIST IN STROBE LIGHT CIRCUIT. ALLOW 10 MINUTES FOR CAPACITOR DISCHARGE AFTER DEENERGIZING. ELECTRICAL DISCHARGE CAN CAUSE INJURY.         (2)       If removing aft position lamps, perform the following:         (a)       Remove lens attaching screws and remove lens from light.         (b)       Loosen (do not remove) terminal screws, and disconnect terminal lugs from terminals.

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WJE			(a) Remove lens attaching screws and remove lens from light.
WJE			(b) Remove inboard end plate of strobe light.
WJE WJE			NOTE: It is not necessary to remove end plate if lamp is held by hinged retainer mechanism.
WJE			(c) Remove strobe lamp.
WJE		(4)	If removing aft strobe light unit, perform the following:
WJE		(.)	(a) Disconnect electrical connector from light through access panel provided.
WJE			(b) Remove strobe light unit from wingtip.
WJE	В.	Insta	all Aft Position and Strobe Lights.
WJE WJE WJE		<u>WA</u> F	<b>RNING:</b> AVOID PROLONGED GROUND USE OF NAV LIGHTS TO REDUCE OVERHEATING OF INSIDE LENS SURFACES. HEAT EMBRITTLEMENT AND SHRINKAGE OF POLYCARBONATE CAUSES CRAZING AND CRACKING OF LENS DIRECTLY ABOVE LAMP.
WJE WJE WJE		<u>WA</u> F	<b>RNING:</b> TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
WJE		(1)	Make sure that these circuit breakers are open and have safety tags:
WJE			LEFT CONSOLE, GROUND SERVICE BUS
WJE			Row Col Number Name B1-437 POSITION LIGHTS
WJE			BI-437 POSITION LIGHTS
₩JE			UPPER EPC, LIGHTS - LEFT AC BUS
WJE			Row Col Number Name
WJE		$\langle \mathbf{O} \rangle$	K 10 B1-727 STROBE
WJE		(2)	If installing aft position lamps, perform the following:
WJE			<ul><li>(a) Clean lamp surface of fingerprints and contaminants.</li><li>(b) Install lamp into mounting bracket, guiding lamp wires through slot. Ensure lamp is</li></ul>
WJE WJE			(b) Install lamp into mounting bracket, guiding lamp wires through slot. Ensure lamp is seated.
WJE			(c) Tighten lamp mounting screw.
WJE			(d) Connect terminal lugs to terminals, and tighten terminal screws.
WJE			(e) Install lens.
WJE			(f) Remove the safety tags and close these circuit breakers:
<b>WJE</b>			LEFT CONSOLE, GROUND SERVICE BUS
WJE			Row Col Number Name
WJE			B1-437 POSITION LIGHTS
₩JE			UPPER EPC, LIGHTS - LEFT AC BUS
WJE			Row Col Number Name
WJE			K 10 B1-727 STROBE
WJE			WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.
WJE			
WJE			(g) Place appropriate switch in POS position to check proper operation of lamps.

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WJE		(h) Place appropriate switch in OFF. Lights should go off.							
WJE	(3)	If installing aft strobe lamp, perform the following:							
WJE WJE WJE		<b>CAUTION:</b> DURING STROBE LAMP INSTALLATION, AVOID EXCESSIVE SIDE PRESSURE ON TRIGGER BAND CONTACT SPRING. EXCESSIVE PRESSURE CAN CAUSE SPRING DISTORTION AND SUBSEQUENT FAILURE.							
WJE		(a) Install strobe lamp.							
WJE		(b) Clean lamp surface of fingerprints and contaminants.							
WJE		(c) Install lens on light unit.							
WJE		(d) Remove the safety tags and close these circuit breakers:							
WJE		LEFT CONSOLE, GROUND SERVICE BUS							
WJE		<u>Row Col Number Name</u>							
WJE		B1-437 POSITION LIGHTS							
₩JE		UPPER EPC, LIGHTS - LEFT AC BUS							
WJE		<u>Row Col Number Name</u>							
WJE		K 10 B1-727 STROBE							
WJE WJE WJE WJE WJE		<b>WARNING:</b> NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.							
WJE		WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.							
WJE		(e) Place appropriate switch in BOTH position to verify proper operation of lights.							
WJE WJE WJE		<ul> <li>WARNING: TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.</li> <li>(f) Open this circuit breaker and install safety tag:</li> </ul>							
WJE WJE									
WJE WJE		UPPER EPC, L AC BUS <u>Row Col Number Name</u>							
WJE		K 33 B1-23 LEFT GROUND CONTROL RELAY							
WJE	(4)	Place appropriate switch in BOTH position to check proper operation of lights.							
WJE	( )	Remove the safety tag and close this circuit breaker:							
WJE		UPPER EPC, L AC BUS							
WJE		Row Col Number Name							
WJE		K 33 B1-23 LEFT GROUND CONTROL RELAY							
WJE	(5)	If installing aft strobe light unit, perform following:							
WJE		(a) Install light unit in trailing edge of wing and secure with attaching screws.							
WJE		WARNING: USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.							
WJE WJE		THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.							
r	EFFECT	IVITY 33-43-01							
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	when a vier a state and a state my									
	MD-80									
	AIRCRAFT MAINTENANCE MANUAL									
WJE	(WARNING PRECEDES)									
WJE	Hazardous Material Warnings									
WJE	HAZMAT 1223, SEALANT/POLYSULFIDE ALUMINIZED (DMS QPL 1819)									
WJE WJE	HAZMAT 1155, SEALANT/LOW ADHESION (DMS QPL 2410; supersedes DPM 256-1)									
WJE	HAZMAT 1000, REFER TO MSDS									
WJE WJE	<ol> <li>After the installation of the aft position light housing, the voids between the light housing and wind tip structure shall be filled with sealing compound (DMS 2410). The butt joint shall be sealed with polysulfide sealant (DMS 1819) and the sealant shall be flushed off to the surrounding structure.</li> </ol>									
WJE	(b) Connect electrical connector to light through access panel provided.									
WJE	(c) Remove the safety tag and close this circuit breaker:									
WJE	UPPER EPC, L AC BUS									
WJE	Row Col Number Name									
WJE	K 33 B1-23 LEFT GROUND CONTROL RELAY									
WJE WJE WJE WJE	WARNING: NORMAL ELECTRICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS INTERRUPTED WHEN GROUND SENSING CIRCUIT BREAKERS ARE OPENED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.									
WJE WJE	WARNING: DO NOT STARE AT STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION IMPAIRMENT MAY RESULT.									
WJE WJE WJE	<b>WARNING:</b> TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.									
WJE	(d) Open this circuit breaker and install safety tag:									
WJE	UPPER EPC, L AC BUS									
WJE	Row Col Number Name									
WJE	K 33 B1-23 LEFT GROUND CONTROL RELAY									
WJE	<ul> <li>(e) If installing aft strobe light unit, perform following:</li> <li>1) Install light unit in tailing adda of wing and accure with attaching acrows</li> </ul>									
WJE	<ol> <li>Install light unit in tailing edge of wing and secure with attaching screws.</li> <li>Connect electrical connector to light through access panel provided.</li> </ol>									
WJE	Remove the safety tags and close these circuit breakers:									
WJE										
WJE	LEFT CONSOLE, GROUND SERVICE BUS <u>Row Col</u> <u>Number Name</u>									
WJE	B1-437 POSITION LIGHTS									
WJE	UPPER EPC, LIGHTS - LEFT AC BUS									
WJE	<u>Row Col Number Name</u> K 10 B1-727 STROBE									
₩JE										

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WJE WJE WJE WJE			INTERI OPENE SYSTE OPERA	RUPTED W ED. MAKE C MS ARE IN ATION OR S	RICAL POWER SUPPLY FOR VARIOUS SYSTEMS IS HEN GROUND SENSING CIRCUIT BREAKERS ARE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED CORRECT POSITIONS TO PREVENT INADVERTENT SHUTDOWN OF EQUIPMENT. T STROBE LIGHTS WHEN FLASHING. TEMPORARY VISION
WJE WJE	VVAP	KINING:		MENT MAY	
WJE WJE WJE	WAF	<u>RNING</u> :	CIRCU	IT BREAKE	FETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE RS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY D DAMAGE TO EQUIPMENT CAN OCCUR.
WJE	(f)	Open t	his circu	it breaker a	nd install safety tag:
WJE WJE		UPPEF	R EPC, I	LAC BUS	
WJE		<u>Row</u>		<u>Number</u>	Name
WJE		K	33	B1-23	LEFT GROUND CONTROL RELAY
WJE	(g)				BOTH position to check proper operation of lights.
WJE	(h)	Remov	e the sa	afety tag and	d close this circuit breaker:
WJE			-	LAC BUS	
WJE		<u>Row</u>		Number	
WJE		K	33	B1-23	LEFT GROUND CONTROL RELAY
WJE	WAF	RNING:			NT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL
WJE					THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
WJE					A OPEN TO THE AIR.
WJE			• CLU:	SE THE CO	NTAINER WHEN NOT USED.
WJE WJE	WAF	<u>RNING</u> :	REFER FOR:	R TO THE AI	PPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS
WJE			• MOR	E PRECAU	TIONARY DATA.
WJE			<ul> <li>APPF</li> </ul>	ROVED SAF	ETY EQUIPMENT.
WJE			• EME	RGENCY M	IEDICAL AID.
WJE WJE					ELOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR RES TO DISCARD THIS HAZARDOUS AGENT.
WJE WJE	(i)			silicone 93- sealant cur	-006 sealant around the trailing edge where it meets the lens. re time.
WJE WJE		,	•		as specified in Midwest Airlines' EA 51-014, may be the silicone 93-006 sealant (DPM 5697).
WJE WJE	(j)			silicone 93- sealant cur	-006 sealant around the electrical disconnect access panel. re time.



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WJE WJE				cure sealants, as specified in Midwest Airlines' EA 51-014, may be uted in lien of the silicone 93-006 sealant (DPM 5697).
WJE WJE WJE WJE WJE WJE WJE WJE			<u>NOTE</u> :	It is acceptable to omit the sealant application in event of inclement weather and/or rapid aircraft dispatch provided that speedtape (DPM 2215) is applied over the joint of the wingtip and the aft strobe and position light assembly. Sufficient overlap and tape-to-structure contact is required around tape perimeter to prohibit in flight peeling. Tape should not extend onto lens. Reference MD-80 Structural Repair Manual Chapter 51-02 for additional speedtape provisions. Sealing the assembly in accordance with the associate aircraft maintenance manual procedures shall be conducted prior to completion of the next scheduled service check (75 flight hours).
WJE	C.	Wing Tip Le	ens Installati	ion (Figure 203) :
WJE		(1) Install	wing tip len	is as follows:
WJE		(2) Check	k lens for cle	anliness and wash with mild detergent and dry with lint free cloth.
WJE		. ,		holes for elongation, cracking, or retainer disbonding.
WJE		(4) Checl	k lens attach	ment area for elongation, cracking, or disbonding.
WJE WJE		WARNING		E SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL S OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
WJE			USE IN	AN AREA OPEN TO THE AIR.
WJE			CLOSE	THE CONTAINER WHEN NOT USED.
WJE		WARNING	: REFER TO	O THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:
WJE			• MORE F	PRECAUTIONARY DATA.
WJE			APPRO	VED SAFETY EQUIPMENT.
WJE			• EMERG	ENCY MEDICAL AID.
WJE WJE				'ITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE DURES TO DISCARD THIS HAZARDOUS AGENT.
WJE WJE		(5) Apply	bead of silio	cone 93-006 sealant to perimeter of wing attachment flange at base of flange
WJE WJE				sealants, as specified in Midwest Airlines' EA 51-014, may be substituted in licone 93-006 sealant (DPM 5697).
WJE WJE WJE		WARNING	INSPECT	OVERTORQUE SCREWS. IF SCREWS BECOME LOOSE, REMOVE AND CONDITION OF HOLES AND NUTPLATES. CLEAR ANY OBSTRUCTIONS. LL SCREWS AND TORQUE TO PROPER VALUE.
WJE WJE WJE		bottor		equence wing tip lens attachments by tightening diagonally opposing top and avoid preloading. Recommended torques values are 12 to 15 inch-pounds )
WJE WJE WJE		NOTE	installatio	er configurations of wing tip structure have fourteen nutplates for lens n. If fourteen nutplates are present, the forward and aft nutplates (two each, ottom) are not required to be used with lenses which have only ten holes.
WJE WJE		WARNING	PERSON	E SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL S OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
WJE				AN AREA OPEN TO THE AIR.
WJE			CLOSE	THE CONTAINER WHEN NOT USED.

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#### WJE (WARNING PRECEDES)

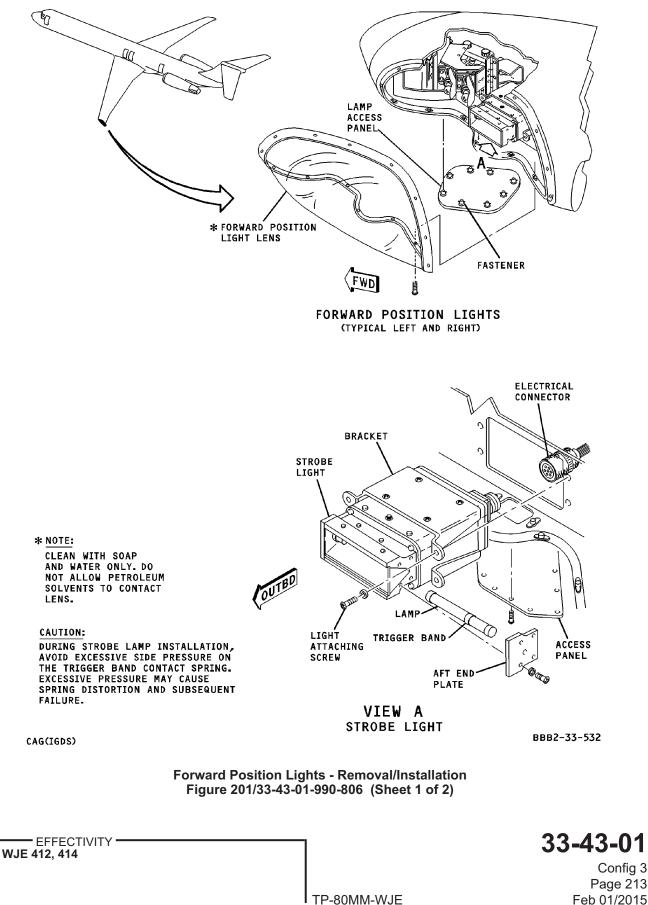
``			,								
WJE	WAF	RNING:	REFER	R TO THE AF	PPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:						
WJE			MORE PRECAUTIONARY DATA.								
WJE			• APPF	ROVED SAF	ETY EQUIPMENT.						
WJE			• EME	RGENCY M	EDICAL AID.						
WJE					LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE TO DISCARD THIS HAZARDOUS AGENT.						
WJE	(7)		Apply fillet silicone 93-006 sealant to attachment area . Wipe edge of lens to remove excess sealant.								
WJE					as specified in Midwest Airlines' EA 51-014, may be substituded in -006 sealant (DPM 5697).						
WJE WJE WJE WJE WJE WJE WJE WJE		Ν	<u>NOTE</u> : It is acceptable to omit the sealant application in event of inclement weather and/or rapid aircraft dispatch provided that speedtape (DPM 2215) is applied over the joint of the wingtip and the aft strobe and position light assembly. Sufficient overlap and tape-to-structure contact is required around tape perimeter to prohibit in flight peeling. Tape should not extend on to lens. Reference MD-80 Structural Repair Manual Chapter 51-02 for additional speedtape provisions. Sealing the assembly in accordance with the associate aircraft maintenance manual procedures shall be conducted prior to completion of the next scheduled service check (75 flight hours).								
WJE	(8)	Remov	ve the sa	afety tags an	d close these circuit breakers:						
MIE MIE MIE		LEFT ( <u>Row</u>	CONSO <u>Col</u>	LE, GROUN <u>Number</u> B1-437	ID SERVICE BUS <u>Name</u> POSITION LIGHTS						
ЖЛЕ		UPPEI	R EPC.	LIGHTS - LE	EFT AC BUS						
WJE		Row	<u>Col</u>	Number	Name						
WJE		Κ	10	B1-727	STROBE						
WJE											

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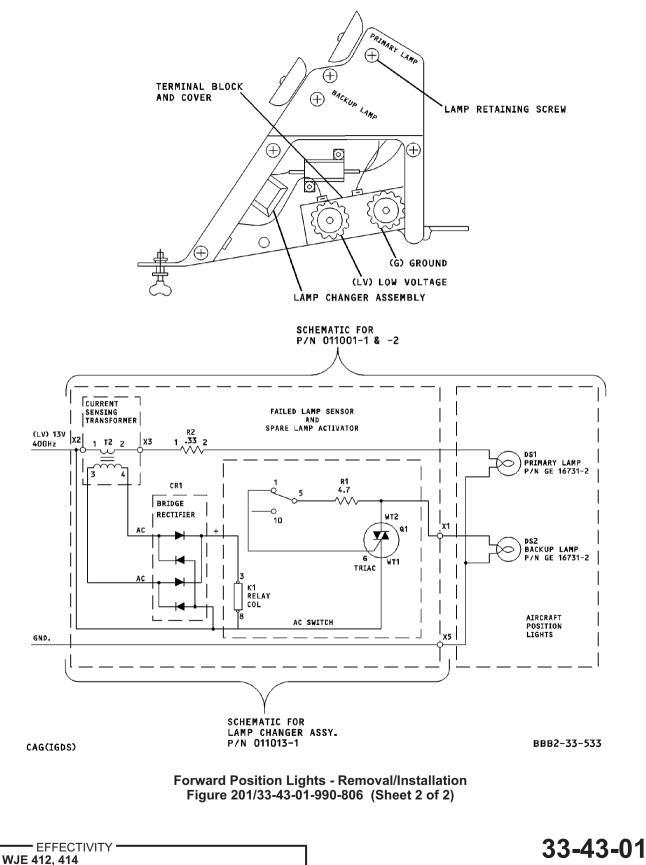
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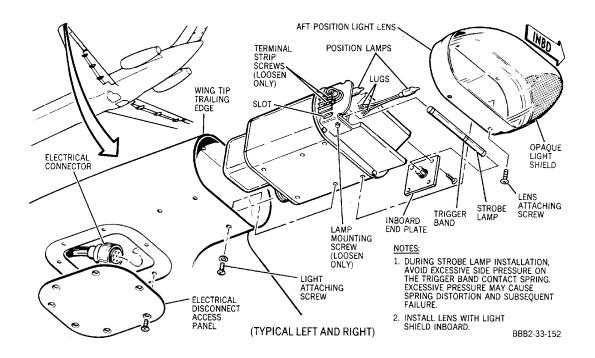
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Aft Position Lights - Removal/Installation Figure 202/33-43-01-990-807

WJE WJE

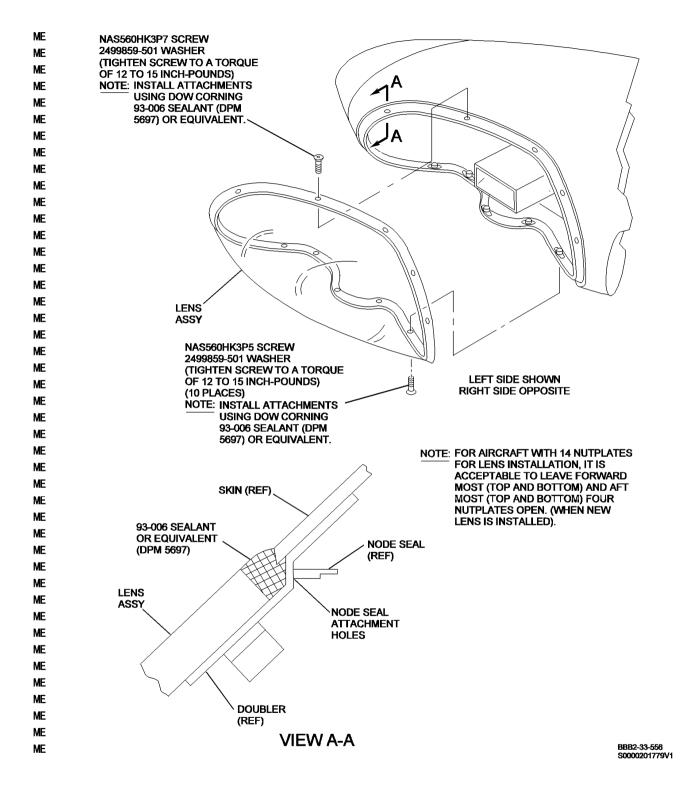
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WJE WJE Wing Tip Lens Installation (Service Bulletin 33-94 Incorporated) Figure 203/33-43-01-990-827

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#### FORWARD AND AFT POSITION LIGHTS - ADJUSTMENT/TEST

#### 1. General

A. This procedure contains MSG-3 task card data.

#### TASK 33-43-01-710-801

#### 2. Operational Check of the Position Lights

#### A. Operational Check of the Position Lights

SUBTASK 33-43-01-710-001

# **WARNING:** DO NOT LOOK AT THE LIGHTS FOR A LONG TIME. THE LIGHTS CAN CAUSE INJURIES TO YOUR EYES.

- (1) Do an operational check of the position lights.
  - (a) Place POS/STROBE switch on the glareshield to POS.
    - 1) Check that both RED lights in the fwd left wing tip come ON.
    - 2) Check that both GREEN lights in the fwd right wing tip come ON.
    - 3) Check that both WHITE lights in each aft wing tip come ON.

<u>NOTE</u>: On some airplanes, only one of the two white lights in each aft wing tip comes on. The off light is a standby and comes on if the active light fails.

- (b) Place POS/STROBE switch to OFF.
- (c) Make sure position lights go OUT.

— END OF TASK — —

#### TASK 33-43-01-710-802

#### 3. Operational Check of the Wing Strobe Lights

A. Operational Check of the Wing Strobe Lights

SUBTASK 33-43-01-710-002

WARNING: NORMAL ELECTRICAL POWER TO VARIOUS SYSTEMS MAY BE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE OPEN. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OF EQUIPMENT.

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

(1) Do an operational check of the wing strobe lights.

Open these circuit breakers and install safety tags:

 Number
 Name

 WJE 417, 419, 421, 423, 865, 869, 871, 872
 LEFT GROUND CONTROL RELAY

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

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 33
 B1-23

 LEFT GROUND CONTROL RELAY

WJE ALL

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#### WJE ALL

(a) Place glareshield POS/STROBE switch to BOTH positions.

**WARNING:** DO NOT LOOK DIRECTLY AT FLASHING STROBE LIGHT FROM CLOSE RANGE. LIGHT FLASHES MAY CAUSE MOMENTARY VISION IMPAIRMENT.

(b) Check that each fwd and aft strobe light in the left and right wingtip flashes.

Remove the safety tags and close these circuit breakers:

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

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 B1-23
 LEFT GROUND CONTROL RELAY

 WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893
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 B1-23
 LEFT GROUND CONTROL RELAY

#### WJE ALL

- (c) Make sure strobes stop operating.
- (d) Place POS/STROBE switch to OFF.

—— END OF TASK ———

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#### FORWARD AND AFT POSITION LIGHTS - INSPECTION CHECK

#### 1. General

- A. This procedure has the forward position light lens inspection criteria.
  - NOTE: The forward position light lens is made from 0.250 in. (6.35 mm) thick polycarbonate material. Disposition defects found in accordance with Damage Criteria chart.
- B. There are two configurations usable as replacements for the forward position light lens.
  - (1) One type of lens is defined by the features that follow:
    - polycarbonate body and edge attachment
    - attachment holes are straight or countersunk
    - attachment holes = 14 or 10
  - (2) The other type of lens is defined by the features that follow:
    - · polycarbonate body
    - notched areas around each attachment hole
    - · fiberglass edge attachment bonded to the polycarbonate
    - · attachment holes are straight
    - attachment holes = 10
  - (3) Both lenses have an abrasion resistant wear coating applied to the exterior surface of the lens.

#### 2. Inspection/Check - Forward Position Light Lens

- A. Inspect the Forward Position Light Lens
  - (1) Crazing/Hazing Do an inspection of the forward position light lens for crazing/hazing as follows:
    - (a) Crazing or hazing is defined as several small cracks or fissures that are perpendicular to the surface, but do not extend completely through the material.
    - (b) Crazing can be caused by contact with non-approved fluids or cleaners. Crazing of the substrate material can be the result of improper cleaning or polishing, exposure to airborne contaminants or pollutants, or localized stresses at the attachments.
    - (c) Crazing/Hazing will decrease the intensity and causes refraction or diffusion of light.
    - (d) Immediate repairs are not necessary. Refurbish the lens at the next maintenance interval. (FORWARD AND AFT POSITION LIGHTS - APPROVED REPAIRS, PAGEBLOCK 33-43-01/801)
  - (2) Scratches Do an inspection of the forward position light lens for scratches as follows:
    - (a) A scratch is defined as a line type defect in the surface of the lens. There are three types of scratches.
      - 1) Hairline scratches can be seen but cannot be felt with the fingernail.
      - 2) Light scratches are less than 0.010 in. (0.25 mm) deep and can be felt with your fingernail.
      - 3) Heavy scratches are more than 0.010 in. (0.25 mm) deep and can be easily felt with your fingernail.
    - (b) Scratches will decrease the intensity and causes refraction or diffusion of light.
    - (c) Immediate repairs are not necessary. Refurbish the lens at the next maintenance interval. (FORWARD AND AFT POSITION LIGHTS - APPROVED REPAIRS, PAGEBLOCK 33-43-01/801)

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- (3) Discoloration Do an inspection of the forward position light lens for discoloration as follows:
  - (a) Discoloration is a noticeable difference in visual appearance of the lens or localized areas of the lens that are darker than surrounding areas.
  - (b) Discoloration will decrease the intensity and causes refraction or diffusion of light.
  - (c) Immediate repairs are not necessary. Refurbish the lens at the next maintenance interval. (FORWARD AND AFT POSITION LIGHTS - APPROVED REPAIRS, PAGEBLOCK 33-43-01/801)
- (4) Cracks Do an inspection of the forward position light lens for cracks follows:
  - (a) Cracks are line type defects through the entire surface and substrate material of the lens. Cracks can start from attachment holes or can occur in the body of the lens.
    - 1) Single cracks can occur anywhere on the lens.
    - 2) Multiple cracks originating from the same or different points of origin can lead to a piece of the lens separating and falling off.
  - (b) Cracks may cause the conditions that follow:
    - 1) Brittleness of the polycarbonate to be evident.
    - 2) The lens may be loose once installed.
    - 3) Pieces of the polycarbonate may separate from the lens.
  - (c) If there are cracks but the lens is not loose and there are no loose missing pieces, refer to FORWARD AND AFT POSITION LIGHTS - APPROVED REPAIRS, PAGEBLOCK 33-43-01/801.
  - (d) If there are loose or missing pieces go to Paragraph 2.A.(5).
- (5) Missing pieces Do an inspection of the forward position light lens for missing pieces as follows:
  - (a) Foreign object damage (FOD) to a lens can break off pieces or multiple cracks running together can cause a piece of a lens to fall off.
  - (b) Sections of the edge attachment or areas of the lens body missing can result in moisture egress into the wing tip lights.
  - (c) If there are missing pieces go to Paragraph 2.B. for temporary repair.
  - (d) If damage is too severe replace the lens completely.
    - NOTE: Whether a temporary repair is feasible has to be evaluated on a case-by-case basis depending on lens condition.
- (6) Seal(s) Do an inspection of the seals for the forward position light lens as follows:
  - (a) Seals are attached to the inside edge of lens to protect against moisture egress into the area of wing tip position lights.
  - (b) Inspect seal for tears, splits, and cuts.

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

(c) Immediate repairs are not necessary. Refurbish the lens seal at the next maintenance interval per FORWARD AND AFT POSITION LIGHTS - MAINTENANCE PRACTICES, PAGEBLOCK 33-43-01/201 Config 1.

#### WJE 412, 414

 (d) Immediate repairs are not necessary. Refurbish the lens seal at the next maintenance interval. (FORWARD AND AFT POSITION LIGHTS - MAINTENANCE PRACTICES, PAGEBLOCK 33-43-01/201 Config 3)

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- B. Temporary Repair
  - (1) If multiple attach holes in upper or lower lens surface are cracked, perform the following:
    - (a) Apply high speed tape around all edges of lens.
    - (b) Overlap lens edge by 1.5 in. (38.1 mm).
    - (c) Check condition of tape prior to each flight until lens is replaced.

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TP-80MM-WJE



#### FORWARD AND AFT POSITION LIGHTS - APPROVED REPAIRS

#### 1. General

- A. Forward position light lens approved repairs consist of procedures for repairing and polishing of lens, dependent upon the severity of damage.
  - <u>NOTE</u>: The forward position light lens is made of 0.25 inch (6.4 mm) thick polycarbonate material. Light to moderate crazing in the edge mounting holes is acceptable provided cracks are not present.

#### 2. Equipment and Materials

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

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

Name and Number	Manufacturer		
Sealant, silicone RTV-738 DPM 5811	Dow Corning Corp. Midland, MI		
Cement, high strength, acrylic epoxy, Weld-On 40 (components A and B) DPM 6000/-1	Industrial Polychemical Service Gardena, CA		
Adhesive, silicone RTV 732-1 DPM 5614-1	Dow Corning Co. Midland, MI		
Cleaning solvent, Naptha DPM 5629	Commercially available		
Isopropyl alcohol (IPA) DPM 530	Commercially available		
Detergent, mild, Joy DPM 3673	Commercially available		
Abrasive, cushioned, Micro-Mesh '0000 range DPM 5760	Micro-Surfaces Finishing Products Wilton, IA		
Optical polish and rubbing compound, Cerox SR-XII DPM 5741	Anomet Inc. Compton, CA		
Polishing compound, No. 720 DPM 5987	Transelco Inc. Penn Yan, NY		
Wax, Simonize DPM 590	Commercially available		
Masking tape	Commercially available		
Cellophane or polyethylene tape	Commercially available		
Paper, abrasive,	Commercially available		
Carborundum, wet or dry, Grades 320, 400, 600			
Cloth, abrasive, wet or dry, Grades 1800, 2400, 3200 3600, 4000, 6000, 8000	Commercially available		
Polycarbonate sheet, .25-inch thick DMS 1713	Commercially available		
High temperature glass plug, Pyrex 1.5-inch diameter	Corning Glass Works		

Table 801

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#### Table 801 (Continued)

Name and Number	Manufacturer
Outing flannel cloth, Wamco 101C	Detro Mfg. Company Rancho Dominguez, CA
Rubber block, 35 +/- shore A hardness or wood block	Commercially available
Buffing wheels (a) felt, 3/8-inch, 4 thru 10-inch diameter (b) flannel, 4 to 10-inch diameter	Commercially available
Drill and drill bits	Commercially available
Hole cutter, adjustable, size 1 3/8-inch shank	Gower
Rubber block, 35 +/- shore A hardness or wood block	Commercially available
Buffing wheels (a) felt, 3/8-inch, 4 thru 10-inch diameter (b) flannel, 4 to 10-inch diameter	Commercially available
Drill and drill bits	Commercially available
Hole cutter, adjustable, size 1 3/8-inch shank	Gower
Brush	Commercially available
Spring Clamps	Commercially available
Squeegee, Plastic	Commercially available
Sand Paper, 36-grit	Commercially available
Emory Cloth, 80-grit	Commercially available
Cleaning Wipers	Commercially available
Cleaning Solvent DPM 518	Commercially available
Reactive Cement DPM 1346, Type 2	Commercially available

#### 3. Approved Repairs - Forward and Aft Position Lights

- A. General Repair Guidelines
  - (1) Cracks of 6 inches (152.4 mm) or less may be stop drilled using number 40 drill and filled using Weld-On 40 acrylic epoxy.
  - (2) Forward two attach holes and aft two attach holes should be plugged using Weld-On 40 acrylic epoxy (Lens with fiberglass edge attachment bonded to the polycarbonate only). Remaining ten attach holes offer sufficient clamp-down to retain lens in position. Two leading and two trailing edge holes induce undue stress on lens body during clamp-down.
    - NOTE: To minimize stress on the surrounding material surface the remaining ten (10) attachments may be installed using a domed washer with (RTV 738) silicone sealant under the washer. This will distribute the load over a larger area and minimize the stress imposed by the fastener.
  - (3) Multiple cracks and cracks in excess of 6.0 inches in fastener area, are permissible.

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- **WARNING:** LIQUID EPOXY RESIN IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID EPOXY RESIN IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET LIQUID EPOXY RESIN IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

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

- (4) Stop drill all cracks using number 40 drill and fill with PS-30 acrylic resin or Weld-on 40.
- (5) Replace any lens repaired per any of these temporary limits at earliest possible convenience.
- B. Repair Forward Position Light Lens Fastener Area
  - (1) Route out crazed and crack area.

NOTE: Retain accurate hole pattern if it is necessary to route out fastener hole.

- (2) Smooth rework area by sanding to eliminate chips and rough surface.
- (3) Roughen faying surfaces with 320 grit wet-or-dry paper.

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

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.
- **WARNING:** PETROLEUM AROMATIC NAPHTHA IS AN AGENT THAT IS FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN PETROLEUM AROMATIC NAPHTHA IS USED.
  - GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET PETROLEUM AROMATIC NAPHTHA IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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#### (WARNING PRECEDES)

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

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

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

- (4) Clean faying surfaces with mild detergent and water solution followed by naptha.
- (5) Let faying surface dry.
- (6) Mask surrounding polycarbonate by covering the surface to within 1/32 inch (0.8 mm) of bonding area with tape.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (7) Prepare Weld-On 40 acrylic epoxy cement for use per manufacturer's instructions.
- (8) Back up repair area with polyethylene tape.
- (9) Pour area full of mixed acrylic epoxy, allowing it to crest to prevent valley.
- (10) If bubbles appear, use pointed object to release air bubbles in epoxy.
- (11) Prior to removal of masking tape, dress crack, file flush to tape surface and prepare for buffing.
- (12) Remove tape and masking.

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

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

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (13) Wash with mild detergent and water solution.
- (14) Sand repaired area surface with progressively finer grit sandpaper 320-400-600 to desired finish (use rubber backed wheel).

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- (15) Smooth to equal blend of surrounding area.
- (16) Locate and drill ten fastener holes .305/.315 in. dia. to match original fastener locations.
  - <u>NOTE</u>: Do not drill two previous forward (one upper and one lower) and two previous aft (one upper and one lower) hole locations. Do not countersink fastener holes.
- **WARNING:** POLISHING COMPOUND IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLISHING COMPOUND IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET POLISHING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (17) Wax and polish entire lens.
- (18) Check finish.
- (19) Protect for stock.
- (20) Tag and place in container for stock.
- C. Repair Forward Position Light Lens Surface Area
  - Route out crazed and crack area. Maximum area to be replaced 16 square inches (103.23 cm<sup>2</sup>).
  - (2) Fabricate polycarbonate plug 0.25 inch (6.4 mm) thick, approximate gap of 1/8 to 3/16 inch (3.2 to 4.8 mm).
  - (3) Smooth rework area and plug by sanding to eliminate chips and rough surface.
  - (4) Rough up faying surfaces with 320 grit wet-or-dry paper.
  - **WARNING:** LIQUID DETERGENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID DETERGENT IS USED.
    - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
    - USE IN AN AREA OPEN TO THE AIR.
    - CLOSE THE CONTAINER WHEN NOT USED.
    - DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
    - DO NOT BREATHE THE GAS.

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#### (WARNING PRECEDES)

- WARNING: PETROLEUM AROMATIC NAPHTHA IS AN AGENT THAT IS FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN PETROLEUM AROMATIC NAPHTHA IS USED.
  - GAS/AIR MIXTURES MORE THAN THE LOWER EXPLOSIVE LIMIT (LEL) CAN CAUSE AN EXPLOSION IF HIGH HEAT, SPARKS, OR FLAMES SUPPLY IGNITION.
  - USE IN AN AREA OPEN TO THE AIR.
  - · CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET PETROLEUM AROMATIC NAPHTHA IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

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

- (5) Clean faying surfaces with mild detergent and water solution followed by naptha.
- (6) Let faying surface dry.
- (7) Mask surrounding polycarbonate by covering surface to within 1/32 inch (0.8 mm) of bonding area with tape.
- **WARNING:** LIQUID EPOXY RESIN IS AN AGENT THAT IS POISONOUS AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID EPOXY RESIN IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET LIQUID EPOXY RESIN IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

# TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (8) Prepare Weld-On 40 acrylic epoxy for use per manufacturer's instructions.
- (9) Back up repair area with polyethylene tape.
- (10) Pour repair periphery full of mixed Weld-On 40, allowing it to crest to prevent valley.
- (11) If bubbles appear, use pointed object to release air bubbles in acrylic epoxy.

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- (12) Prior to removal of masking tape, dress periphery, file flush with tape and prepare for buffing.
- (13) Remove tape and masking.

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

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (14) Wash with mild detergent and water solution.
- (15) Sand repaired area surface with progressive finer grit sandpaper 320-400-600 to desired finish (use rubber backed wheel).
- (16) Smooth to equal blend of surrounding area.
- **WARNING:** POLISHING COMPOUND IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLISHING COMPOUND IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET POLISHING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (17) Wax and polish entire lens.
- (18) Check finish.
- (19) Protect for stock.
- (20) Tag and place in container for stock.
- D. Repair Forward Position Light Lens Hot Spot (Above Lamp) Surface Area
  - (1) Clamp lens cover to drill press table.

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- (2) Protect surface of lens cover from damage as required.
- (3) Drill slightly larger than 3/8 inch (9.5 mm) diameter pilot hole directly above lamp location.
- (4) Use hole cutter applied at 600 rpm with water-soap solution added during cutting operation. Cut 1 1/2" (38.1 mm) diameter section from lens cover.

**WARNING:** ISOPROPYL ALCOHOL IS AN AGENT THAT IS FLAMMABLE, EXPLOSIVE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY ALL OF THE PRECAUTIONS WHEN ISOPROPYL ALCOHOL IS USED.

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

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

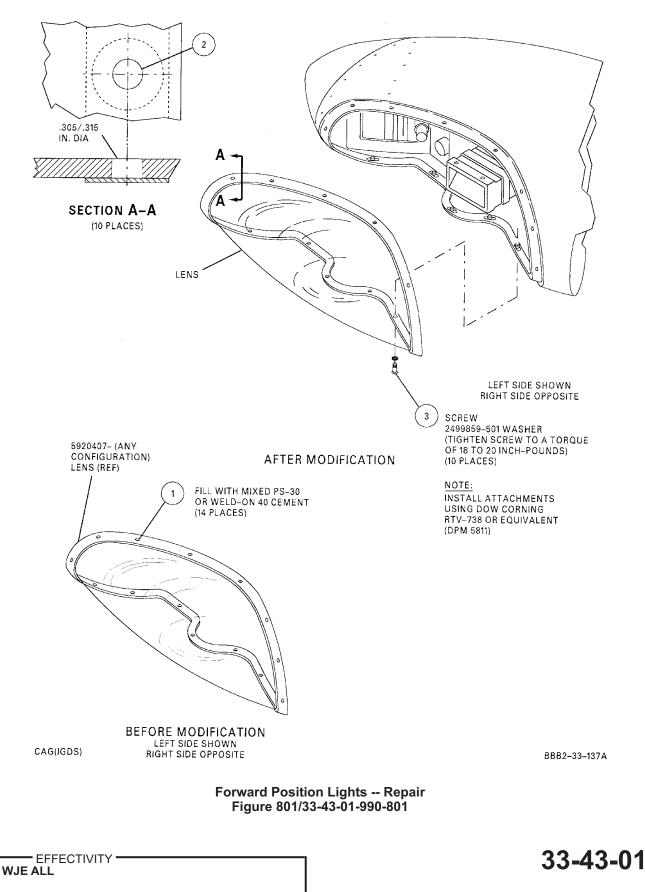
- (5) Sand edges of lens cover cutout with 320 grit sandpaper and clean with isopropyl alcohol.
- (6) Clean edge of high temperature Pyrex glass plug with isopropyl alcohol.
- (7) Clamp lens cover to table.
- (8) Protect surface of lens from damage as required.
- (9) Apply RTV 732-1 clear silicone adhesive to edges of lens cutout and glass plug.
- (10) Place plug into opening.
- (11) Allow adhesive to cure overnight (approximately 16 hours).

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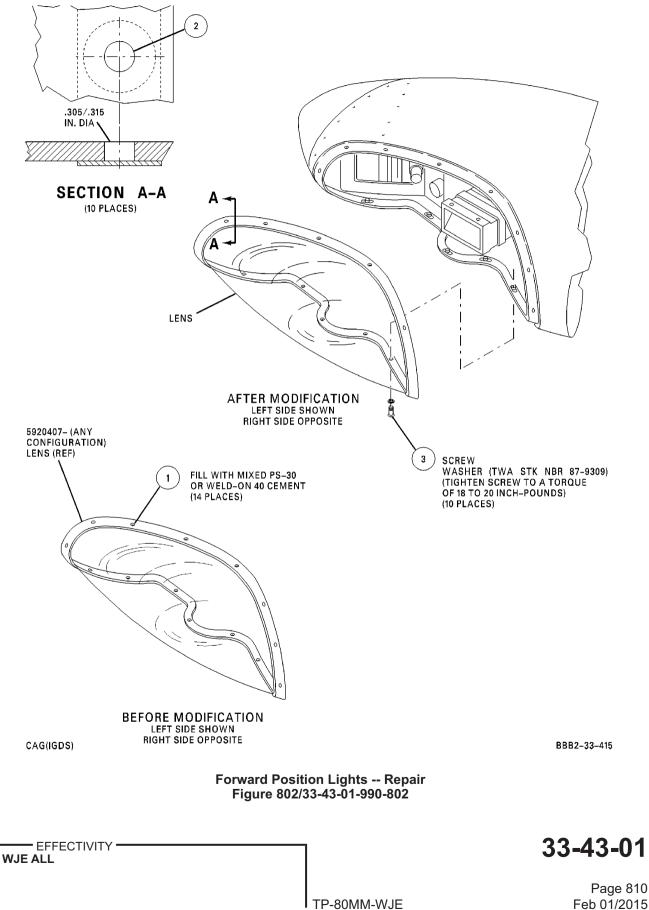
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#### 4. Repair - Forward Position Light Lens - Polishing Procedure

- A. General Guidelines
  - **WARNING:** LIQUID DETERGENT IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN LIQUID DETERGENT IS USED.
    - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
    - USE IN AN AREA OPEN TO THE AIR.
    - CLOSE THE CONTAINER WHEN NOT USED.
    - DO NOT GET LIQUID DETERGENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
    - DO NOT BREATHE THE GAS.

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (1) Clean lens with mild detergent and water solution before starting polishing operation.
- (2) Protect surfaces of lens outside of area being polished.
- (3) Use straight line sanding motion. Alternate at right angles to provide cross sanding pattern.
- (4) Use light pressure to avoid clogging of sanding medium.
- (5) Reduce pressure toward completion of each sanding step.
- (6) Work slightly larger area with each sanding pattern.
- (7) Wipe lens clean with damp cloth after each polishing operation to remove loose grit.
- B. Refurbishing Procedure Phase I
  - <u>NOTE</u>: The procedure used is dependent upon the severity of crazing/scratching damage. Reference paragraph 3.B. for heavy crazing and paragraph 3.C. for light to moderate crazing.
  - (1) For initial sanding use carborundum paper (320 grit minimum) or cushioned cloth wrapped around hard felt or rubber block.
  - (2) Sand area using light pressure.
  - (3) Slight amount of mild detergent and water solution may be used as lubricant to reduce drag and avoid clogging when using finer grades.
  - (4) Use straight line sanding motion and alternate strokes at right angles with subsequent finer grits.
  - (5) If initial sanding includes abrasive paper, use progressively finer grades, eg. 320, 400, 500 and 600. Do not skip grade.
  - (6) Always remove each previous grit sanding pattern.
  - (7) Gradually lighten pressure towards completion of each operation and work slightly larger area with each sanding step.

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- C. Refurbishing Procedure Phase II
  - <u>NOTE</u>: Dependent upon severity of damage operator may wish to proceed to Phase II refurbishment if warranted. Phase II is basically a finish sanding procedure for light to moderate crazing damage.
  - (1) Final finish sand using cushioned abrasive cloth (Micro-Mesh typical) until preceding scratch pattern is removed.
  - (2) Use progressively finer grade cloth, eg. 1800, 2400, 3200, 3600, 4000, 6000 and 8000. Do not skip grade.

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

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

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (3) Slight amount of mild detergent and water solution may be used as lubricant to reduce drag and avoid clogging when using finer grades.
- (4) Cerox SR-XII (cerium oxide polish) or No. 720 (aluminium oxide polish) may be used to remove the 8000 grit pattern for final sanding operation.
- (5) Oxide polishing compounds are applied with outing flannel cloth (Wamco 101C).
- (6) Rinse lens with clean water and dry with clean dry cloth.
- **WARNING:** POLISHING COMPOUND IS AN AGENT THAT IS AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN POLISHING COMPOUND IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET POLISHING COMPOUND IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

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### (WARNING PRECEDES)

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(7) Apply wax and buff to high luster.

#### 5. Repair - Forward Position Light Lens Edge Retainer - Bonding Procedure

A. Bonding Procedure

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

(1) Remove the forward position light lens. (FORWARD AND AFT POSITION LIGHTS -MAINTENANCE PRACTICES, PAGEBLOCK 33-43-01/201 Config 1)

#### WJE 412, 414

(2) Remove the forward position light lens. (FORWARD AND AFT POSITION LIGHTS -MAINTENANCE PRACTICES, PAGEBLOCK 33-43-01/201 Config 3)

#### WJE ALL

- (3) Apply masking tape to the areas of the lens that will not be bonded to the edge retainer.
- (4) Use 36-grit sand paper to remove gloss from the area of the lens that will be bonded to the edge retainer.
- (5) Use 80-grit emory cloth to finish the area that was sanded.

# **WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1118, SOLVENT/DRY CLEANING (DPM 518)

HAZMAT 1000, REFER TO MSDS

- (6) Clean the area with cleaning wipers and cleaning solvent.
- **WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1030, ISOPROPYL ALCOHOL (DPM 530)

HAZMAT 1000, REFER TO MSDS

- (7) Clean the area with isopropyl alcohol.
- **WARNING:** USE THE HAZARDOUS MATERIAL WARNINGS GIVEN BELOW FOR THE STEPS THAT FOLLOW.

THE HAZARDOUS MATERIAL WARNINGS ARE LISTED AFTER THE INTRODUCTION SECTION IN THE FRONT OF THE AMM.

Hazardous Material Warnings

HAZMAT 1773, WELD-ON 28 (3-COMPONENT KIT)

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#### (WARNING PRECEDES)

HAZMAT 1000, REFER TO MSDS

- (8) Mix the cement per the manufacturer instructions.
- (9) Use a clean brush to apply the cement to the faying surfaces of the lens and retainer.

NOTE: The parts must be bonded within 10 minutes after the cement was applied.

- (10) Carefully align the retainer fastener tabs with the cutouts in the lens and attach the retainer to the lens.
- (11) Install spring clamps along the length of the retainer to apply uniform pressure while the lens and retainer bond.

NOTE: The clamps must remain in position for a minimum of three hours.

- (12) If necessary, use a squeegee to remove excess cement. Leave a small fillet of cement along the edge of the retainer.
- (13) After the cement has cured for a minimum of three hours, remove the clamps and masking tape.

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

(14) Install the forward position light lens. (FORWARD AND AFT POSITION LIGHTS -MAINTENANCE PRACTICES, PAGEBLOCK 33-43-01/201 Config 1)

#### WJE 412, 414

(15) Install the forward position light lens. (FORWARD AND AFT POSITION LIGHTS -MAINTENANCE PRACTICES, PAGEBLOCK 33-43-01/201 Config 3)

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#### **POSITION LIGHT TRANSFORMERS - MAINTENANCE PRACTICES**

## 1. <u>General</u>

A. There is one wing position lights transformer located in each wingtip. The removal and installation procedures for the position lights transformers are identical for both the left and the right wing.

### 2. <u>Removal/Installation Position Lights Transformer</u>

A. Remove Transformer

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

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

## LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> B1-437 POSITION LIGHTS

- (2) Gain access to transformer by removing wingtip access panel.
- (3) Remove attaching screws from transformer.
- (4) Disconnect electrical wiring.
- (5) Remove transformer.
- B. Install Transformer

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

(1) Make sure that this circuit breaker is open and has safety tag:

## LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name B1-437 POSITION LIGHTS

- (2) Connect electrical wiring.
- (3) Position transformer in wingtip and secure with attaching screws.
- (4) Install wingtip access panel.
- (5) Remove the safety tag and close this circuit breaker:

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-437 POSITION LIGHTS

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- WARNING: NORMAL ELECTRICAL POWER SUPPLY TO VARIOUS SYSTEMS ARE INTERRUPTED WHEN GROUND CONTROL RELAY CIRCUIT BREAKERS ARE CLOSED. MAKE CERTAIN THAT SWITCHES AND CONTROLS OF AFFECTED SYSTEMS ARE IN CORRECT POSITIONS TO PREVENT INADVERTENT OPERATION OR SHUTDOWN OF EQUIPMENT.
- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (6) Open these circuit breakers and install safety tags:

UPPER EPC, L AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> WJE 417, 419, 421, 423, 865, 869, 871, 872 K 30 B1-23 LEFT GROUND CONTROL RELAY WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893 K 33 B1-23 LEFT GROUND CONTROL RELAY

#### WJE ALL

**WARNING:** DO NOT LOOK DIRECTLY AT FLASHING STROBE LIGHT FROM CLOSE RANGE. LIGHT FLASHES MAY CAUSE MOMENTARY VISION IMPAIRMENT.

- (7) Place POS/STROBE lights switch in BOTH position to check proper operation of circuit.
- (8) Remove the safety tags and close these circuit breakers:

UPPER EPC, L AC BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> WJE 417, 419, 421, 423, 865, 869, 871, 872 K 30 B1-23 LEFT GROUND CONTROL RELAY WJE 401-412, 414-416, 418, 420, 422, 424-427, 429, 861-864, 866, 868, 873-881, 883, 884, 886, 887, 891-893 K 33 B1-23 LEFT GROUND CONTROL RELAY

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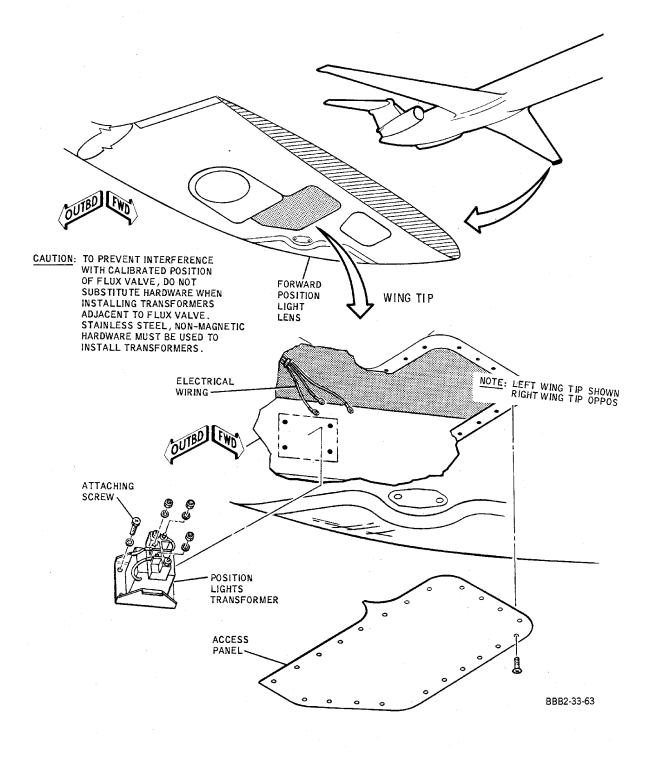
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#### Position Lights Transformer -- Removal/Installation Figure 201/33-43-02-990-804

WJE ALL

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#### FORWARD POSITION LIGHTS ASSEMBLY - REMOVAL/INSTALLATION

### 1. General

A. This section provides removal/installation procedures for the forward position lights assembly. The forward position lights assembly is located on the right and left wing tips.

### 2. Equipment and Materials

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

Table 401

Name and Number	Manufacturer
Soap	
Non abrasive soft cloth	

### 3. <u>Removal/Installation Forward Position Lights Assembly</u>

### WJE ALL PRE MD80-33-112

A. Remove Forward Position Lights Assembly. (Figure 401)

**WARNING:** TAG AND SAFETY CIRCUIT BREAKER.

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

#### LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

Col Number Name B1-437 POSITION LIGHTS

- (2) Remove lamp access panel.
- (3) Remove forward position light lens.
- (4) Remove terminal block cover from socket support bracket.
- (5) Remove nuts, lockwashers, and washers that attach electrical wires. Disconnect electrical wires attached to forward position lights assembly. Identify wires for later installation.
- (6) Remove lamps from lamp holders.
- (7) Remove lamp holders.
- (8) Remove wing nuts from forward position light assembly.
- (9) Remove bolts and washers from the hinge on forward position lights assembly.
- (10) Remove forward position lights assembly.

## WJE ALL POST MD80-33-112

B. Remove Forward Position Lights Assembly (Figure 402) )

WARNING: TAG AND SAFETY CIRCUIT BREAKER.

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

## LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u>

B1-437 POSITION LIGHTS

- (2) Remove lamp access panel.
- (3) Remove forward position light lens.

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#### WJE ALL POST MD80-33-112 (Continued)

- (4) Disconnect electrical wires attached to forward position lights assembly. Identify wires for later installation.
- (5) Remove lamps from lamp holders.
- (6) Remove spring and contact assembly with wire going through lamp holder and light subassembly. Identify wire for later installation.
- (7) Remove lamp holder and washer with screws (socket head cap) from light subassembly.
- (8) Remove bolts (1) with nuts and washers from base of light subassembly and support bracket.
- (9) Remove wing nuts and retaining rings from light subassembly.
- (10) Remove light subassembly with circuit board assembly and terminal board attached.
- (11) If circuit board assembly is removed, do as follows:
  - (a) Disconnect wires if still attached to light subassembly. Tag wires for later installation.
  - (b) Remove nuts (2) and screws (2) with washers and spacers from circuit board assembly and light subassembly.
  - (c) Remove nuts (3) and screws (3) with washers from circuit board assembly and light subassembly.
  - (d) Remove nut (4) and screw (4) with washers and nut attached from light subassembly.
  - (e) Remove circuit board assembly.
- (12) If terminal board is to be removed, do as follows:
  - (a) Remove nuts (5) and screws (5) with washers from terminal board.
  - (b) Remove terminal board.

#### WJE ALL PRE MD80-33-112

C. Install Forward Position Lights Assembly (Figure 401)

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

(1) Make sure that this circuit breaker is open and has safety tag:

## LEFT CONSOLE, GROUND SERVICE BUS <u>Row</u> <u>Col</u> <u>Number</u> <u>Name</u> B1-437 POSITION LIGHTS

- (2) Place forward position lights assembly on support brackets.
- (3) Install bolts and washers to hinge and support bracket.
- (4) Install wing nuts to support bracket and forward position lights assembly.
- (5) Install lamp holder with screws.
- (6) Install lamp assembly with new lamp if original was burnt out.
- (7) Connect electrical wires in locations identified. Install nuts, lockwashers, and washers to hold electrical wires.
- (8) Install terminal block.
- (9) Clean forward position light lens with soap and water.
- (10) Install forward position light lens.

WJE ALL

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#### WJE ALL PRE MD80-33-112 (Continued)

(11) Install lamp access panel.

#### WJE ALL POST MD80-33-112

D. Install Forward Position Lights Assembly. (Figure 402)

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

(1) Make sure that this circuit breaker is open and has safety tag:

#### LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

B1-437 POSITION LIGHTS

- (2) If terminal board is to be installed, do as follows:
  - (a) Place terminal board on light subassembly.
  - (b) Install nuts (5) and screws (5) with washers.
- (3) If circuit board assembly is replaced/installed, do as follows:
  - (a) Circuit board is supplied with all wires attached. To replace, cut existing wires from lamps at splices and remove attaching hardware.
  - (b) Install new circuit board, replacing Sil-pads and shoulder washers.
  - (c) Install nut (4) and screw (4) with washers and nut attached to light subassembly.
  - (d) Install nuts (3) and screws (3) with washers on circuit board assembly and light subassembly.
  - (e) Install nuts (2) and screws (2) with washers and spacers on circuit board assembly and light subassembly.
  - (f) Route wires upper lamp to LP1 on circuit board. (Figure 403)
  - (g) Splice wires and seal with shrink tube.
  - (h) Secure wires with cable ties provided.
- (4) Install light sub-assembly with circuit board assembly and terminal board attached on support bracket.
- (5) Install bolts (1) with nuts and washers on light sub-assembly and support bracket.
- (6) Install wing nuts and retaining rings on light subassembly and support bracket.
- (7) Install lamp holders and washers to light subassembly.
- (8) Install spring and contact assembly with wire going through lamp holder and light subassembly to where attached previously or as identified.
- (9) Install lamp.
- (10) Connect electrical wires attached to forward position lights assembly as identified.
- (11) Clean forward position light lens with soap and water.
- (12) Install forward position light lens.
- (13) Install lamp access panel.

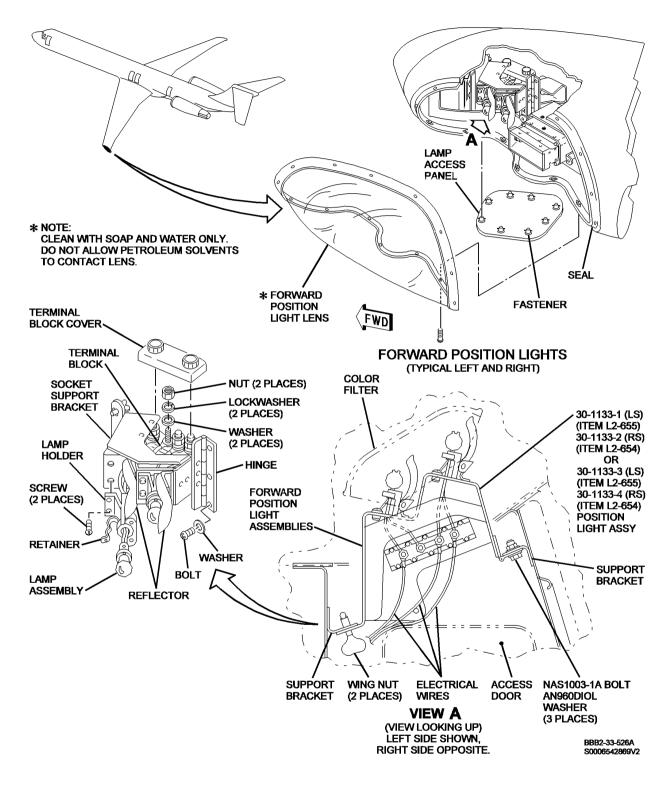
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Forward Position Lights Assembly - Removal/Installation Figure 401/33-43-02-990-801

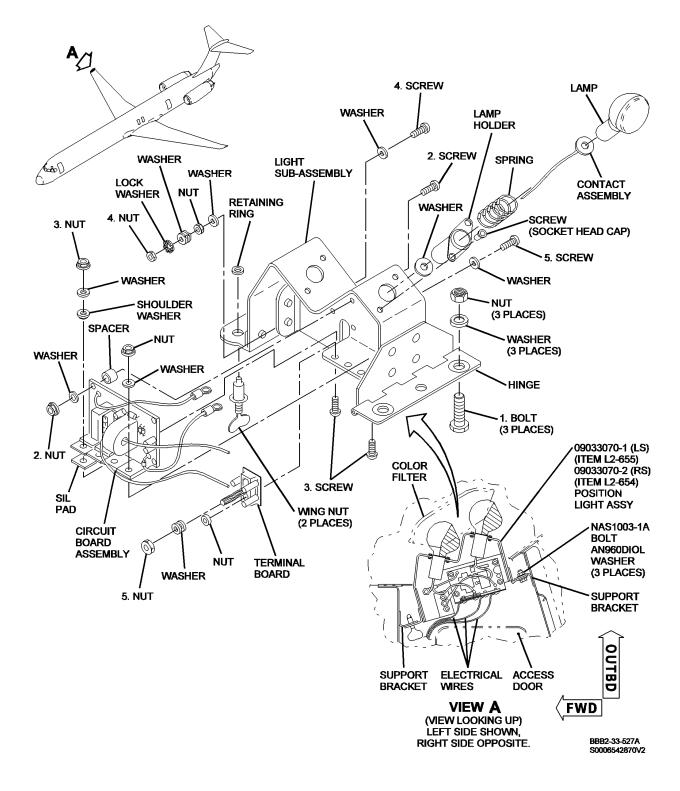
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#### Forward Position Lights Assembly - Removal/Installation Figure 402/33-43-02-990-802

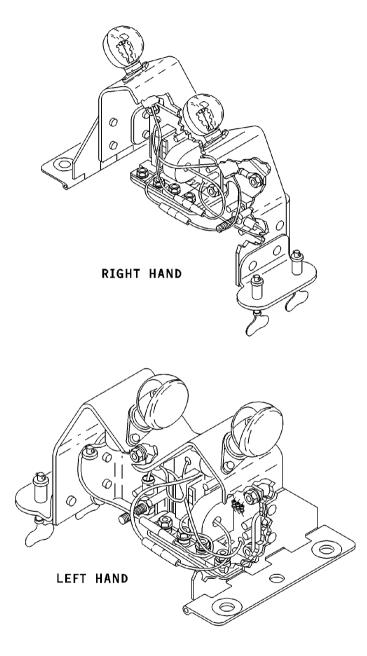
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#### Wire - Installation Figure 403/33-43-02-990-803

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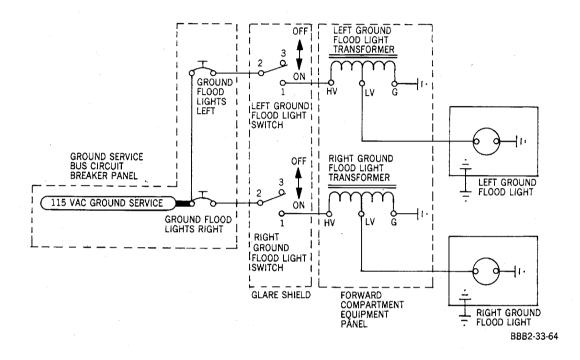
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#### **GROUND FLOODLIGHTS - DESCRIPTION AND OPERATION**

## 1. General

- A. The ground floodlights provide area lighting for ground service and aid side visibility while taxiing.
- B. The ground floodlights consist of two 450-watt fixed position lights installed in the left and right sides of the fuselage forward of the wings. Individual control of the lights is provided by switches located on the glareshield.



Ground Floodlights -- Simplified Schematic Figure 1/33-44-00-990-805

WJE ALL

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### **GROUND FLOODLIGHTS - MAINTENANCE PRACTICES**

#### 1. General

WARNING: A CRACKED OR BROKEN GROUND FLOODLIGHT LENS SHOULD BE REPLACED AS SOON AS POSSIBLE. HEAT GENERATED BY GROUND FLOODLIGHT WITH CRACKED OR BROKEN LENS CAN CREATE A FIRE HAZARD IF LIGHT IS INADVERTENTLY TURNED ON DURING FUELING OPERATIONS.

A. The following procedures are given for removing the left or right ground floodlight lamp, dome, or feed through. The ground floodlight lens refracts the light beam forward at the proper angle for taxiing and care must be taken to insure that the lens is not installed in reverse. An arrow on the lens retainer indicates the proper direction of installation.

#### 2. Equipment and Materials

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

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

Table 201			
Name and Number	Manufacturer		
Sealant, silicone 90-006 DPM 5697	Dow Corning Midland, MI		
Catalyst, 90-006-1 DPM 5697	Dow Corning Midland, MI		
Cleaner, Hand Wipe; Brulin MP 1793, DPM 6380-1	Brulin & Company, Inc. Richmond, CA (2)		
Cleaner, Hand Wipe; EPA 2000, DPM 6380-2 or	DPM 6380-2 is superseded by DPM 6380-4, however the DPM 6380-2 can be used until supplies are depleted.		
Cleaner/Solvent, hand wipe, bulk, DPM 6380-4	Contec, Inc., Spartanburg, SC		
Cleaner, Hand Wipe; PF Degreaser, DPM 6380-3	P-T Technologies, Inc. Safety Harbor, FL (2)		
Primer, RTV-1200 DPM 3202	Dow Corning Midland, MI		
NOTE: For proper curing, mix sealant and accelerator sl	owly until an even color is obtained. After mixing, sealant must		

Table 201

## 3. Removal/Installation Ground Floodlights

be applied within 2 to 6 hours. Curing time is 24 hours.

A. Remove Lamp

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

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

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-17 LEFT GROUND FLOOD LIGHT

B1-18 RIGHT GROUND FLOOD LIGHT

- (2) Remove lens attaching screws and lens.
- (3) Remove lamp retainer attaching screws, lamp retainer, and spacers.

### WJE ALL POST DC9-33-100

NOTE: Remove gasket instead of spacers.

#### WJE ALL

- (4) Disconnect electrical wiring and remove lamp.
- B. Install Lamp

Row

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

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

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	<u>Name</u>
	B1-17	LEFT GROUND FLOOD LIGHT
	B1-18	RIGHT GROUND FLOOD LIGHT

- (2) Connect electrical wiring to lamp.
- (3) Position lamp on mounting ring and install lamp retainer and spacers.
  - (a) On aircraft with SB 33-100 incorporated, place lamp on mounting ring and install lamp retainer.
- (4) Install lens with arrow on retainer pointing forward.
- (5) Remove the safety tags and close these circuit breakers:

## LEFT CONSOLE, GROUND SERVICE BUS

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

B1-17	LEFT GROUND FLOOD LIGHT
B1-18	RIGHT GROUND FLOOD LIGHT

- (6) Actuate ground floodlights switches to check proper operation of lights.
- C. Remove Dome
  - (1) Remove lamp (Paragraph 3.A.).

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- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (2) Open these circuit breakers and install safety tags:

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-17 LEFT GROUND FLOOD LIGHT

B1-18 RIGHT GROUND FLOOD LIGHT

- (3) Gain access to back of dome by removing cargo compartment lining in area of ground floodlight.
- (4) Disconnect electrical wiring from dome.
- (5) Remove attaching rivets and dome.

### D. Install Dome

(1) Remove old sealant from faying surfaces of dome and fuselage panel.

**WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.
- **WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A REDUCER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- **WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, A REDUCER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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#### (WARNING PRECEDES)

- WARNING: HANDWIPE CLEANER/SOLVENT IS AN AGENT THAT IS FLAMMABLE AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER/SOLVENT IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET HANDWIPE CLEANER/SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

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

- (2) Clean faying surfaces with hand wipe cleaner.
- WARNING: SILICONE PRIMER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS LISTED BELOW WHEN SILICONE PRIMER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET SILICONE PRIMER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (3) Apply RTV-1200 primer to faying surfaces and allow to dry for 30 minutes.
- **WARNING:** SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.

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#### (WARNING PRECEDES)

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

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

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(4) Apply silicone sealant (90-006) over one entire faying surface until uniform thickness of approximately 1/64 inch (0.397 mm) is obtained.

NOTE: All air bubbles should be worked out to obtain a quality seal.

- (5) Position dome on fuselage panel and install attaching rivets.
- (6) Fair extruded sealant.

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

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

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-17	LEFT GROUND FLOOD LIGHT
	B1-18	RIGHT GROUND FLOOD LIGHT

- (8) Connect electrical wiring to outside of dome.
- (9) Install cargo compartment lining.
- (10) Install lamp (Paragraph 3.B.).
- (11) Remove the safety tags and close these circuit breakers:

### LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u>	<u>Number</u>	Name
	B1-17	LEFT GROUND FLOOD LIGHT
	B1-18	RIGHT GROUND FLOOD LIGHT

E. Remove Feed Through

Row

Row

(1) Remove lamp (Paragraph 3.A.).

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

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

#### LEFT CONSOLE, GROUND SERVICE BUS

- Row Col Number Name
  - B1-17 LEFT GROUND FLOOD LIGHT
  - B1-18 RIGHT GROUND FLOOD LIGHT
- (3) Remove nuts, washers, and electrical wiring from terminal stud on inside of dome.
- (4) Gain access to back of dome by removing cargo compartment lining in area of ground floodlight.

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- (5) Remove terminal stud from feed through.
- (6) Remove attaching rivets from feed through.
- (7) Remove feed through.
- F. Install Feed Through
  - (1) Remove old sealant from surface of dome where feed through is to be installed.

**WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A SENSITIZER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.
- **WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, A REDUCER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- **WARNING:** HANDWIPE CLEANER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, A REDUCER, AN ASPHYXIANT, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET HANDWIPE CLEANER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: HANDWIPE CLEANER/SOLVENT IS AN AGENT THAT IS FLAMMABLE AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HANDWIPE CLEANER/SOLVENT IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET HANDWIPE CLEANER/SOLVENT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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### (WARNING PRECEDES)

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

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

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

- (2) Clean surface with hand wipe cleaner.
- **WARNING:** SILICONE PRIMER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS LISTED BELOW WHEN SILICONE PRIMER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET SILICONE PRIMER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

- (3) Apply RTV-1200 primer to cleaned surface and allow to dry for 30 minutes.
- (4) Position feed through on dome and install attaching rivets.
- **WARNING:** SILICONE SEALANT IS AN AGENT THAT IS A LOW HAZARD. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
- WARNING: REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIER'S MSDS FOR:
  - MORE PRECAUTIONARY DATA
  - APPROVED SAFETY EQUIPMENT
  - EMERGENCY MEDICAL AID.

TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.

(5) Apply fillet of silicone 90-006 sealant around the perimeter of feed through.

NOTE: All air bubbles should be worked out to obtain a quality seal.

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

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

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

- B1-18 RIGHT GROUND FLOOD LIGHT
- (7) Install terminal stud in feed through and connect electrical wiring.
- (8) Install cargo compartment lining.
- (9) Install nuts, washers, and electrical wiring on terminal stud on inside of dome.
- (10) Install lamp (Paragraph 3.B.).
- (11) Remove the safety tags and close these circuit breakers:

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-17 LEFT GROUND FLOOD LIGHT

B1-18 RIGHT GROUND FLOOD LIGHT

## 4. Adjustment/Test Ground Floodlights

- A. Test Ground Floodlights
  - (1) Place L FLOOD LTS GRD switch, located on glareshield, in ON position. Left floodlight should come on.
  - (2) Place L FLOOD LTS GRD switch in OFF position. Left flood-light should go off.
  - (3) Place R FLOOD LTS GRD switch in ON position. Right flood-light should come on.
  - (4) Place R FLOOD LTS GRD switch in OFF position. Right flood-light should go off.

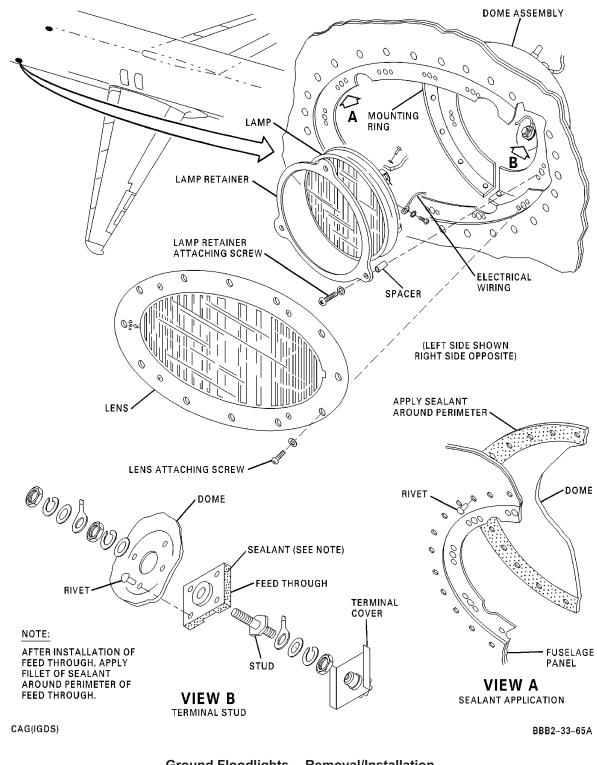
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#### Ground Floodlights -- Removal/Installation Figure 201/33-44-00-990-801

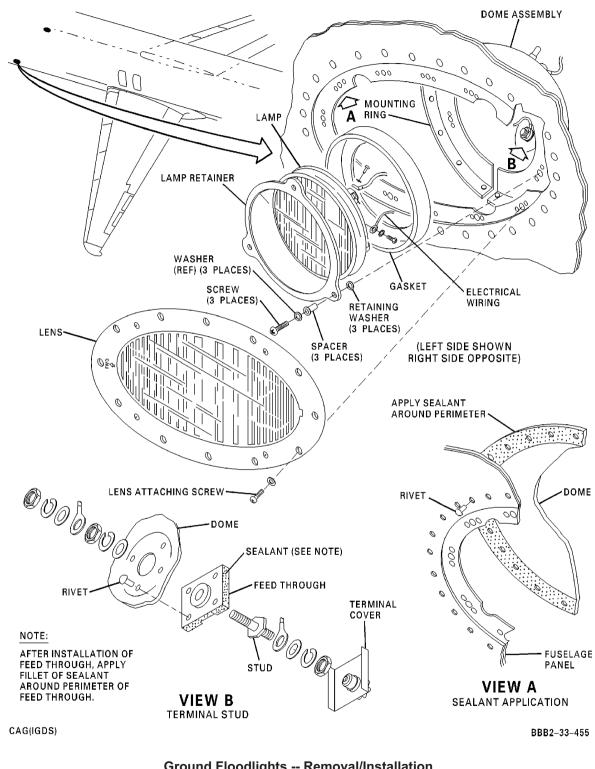
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Ground Floodlights -- Removal/Installation Figure 202/33-44-00-990-803

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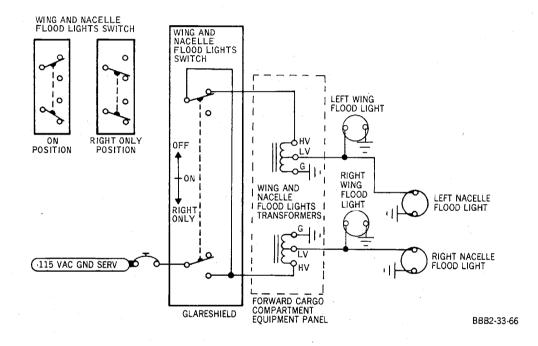
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#### WING AND NACELLE FLOOD LIGHTS - DESCRIPTION AND OPERATION

#### 1. General

- A. The wing and nacelle flood lights are fixed position assemblies in each side of the fuselage and are used to visually check the engine nacelle and wing leading edge for icing conditions. The lights also have sufficient dispersion to facilitate ground fueling operations and to aid in taxiing.
- B. The wing flood lights are identical and consist of a housing, lamp, and lens. Power is supplied from the ground service bus, and voltage is reduced through a stepdown transformer.
- C. The nacelle flood lights are identical and consist of a housing, incandescent lamp, and lens. Power is supplied from the ground service bus, and voltage is reduced through a stepdown transformer.
- D. A 3-position switch, located on the glareshield panel, controls the flood lights. The switch has an ON and OFF position and R ONLY for fueling purposes.



Wing and Nacelle Scanning Lights -- Simplified Schematic Figure 1/33-45-00-990-801

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#### WING AND NACELLE FLOOD LIGHTS - REMOVAL/INSTALLATION

### 1. General

A. The following procedure contains instructions for removing and installing the left and the right wing and nacelle flood lights.

## 2. Removal/Installation Wing and Nacelle Flood Lights

A. Remove Lights

## **WARNING:** TAG AND SAFETY CIRCUIT BREAKER.

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

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number Name

B1-21 WING & NACELLE FLOOD LIGHTS

- (2) Remove lens.
- (3) Remove lamp retainer.
- (4) Pull lamp out to gain access to electrical wiring.
- (5) Disconnect electrical wiring and remove lamp.

B. Install Lights

## WARNING: TAG AND SAFETY CIRCUIT BREAKER.

(1) Make sure that this circuit breaker is open and has safety tag:

### LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

B1-21 WING & NACELLE FLOOD LIGHTS

- (2) Connect electrical wiring to lamp.
- (3) Position lamp and retainer in lamp housing and install attaching screws.

Name

- (4) Position lens on housing and install attaching screws.
- (5) Remove the safety tag and close this circuit breaker:

## LEFT CONSOLE, GROUND SERVICE BUS

Row Col Number

B1-21 WING & NACELLE FLOOD LIGHTS

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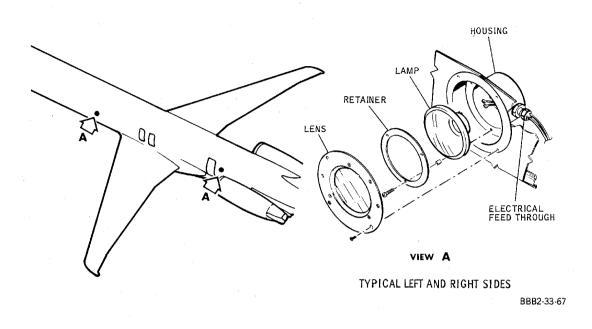
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Wing and Nacelle Flood Lights -- Removal/Installation Figure 401/33-45-00-990-802

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## WING AND NACELLE FLOODLIGHTS - ADJUSTMENT/TEST

## 1. General

A. The following procedures provide an operational test of the wing and nacelle scanning lights circuit.

## 2. Adjustment/Test Wing and Nacelle Floodlights

- A. Wing and Nacelle Floodlights Operational Test
  - (1) Place WING/NACL switch, located on glareshield, in ON position.
  - (2) Check that left and right wing and nacelle floodlights come on.
  - (3) Place switch in R ONLY position.
  - (4) Check that left lights go off and right lights remain on.
  - (5) Place switch to OFF position. Lights should go off.

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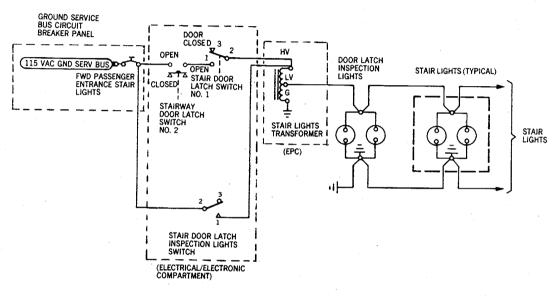
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#### PASSENGER FORWARD ENTRANCE DOOR STAIR LIGHTS - DESCRIPTION AND OPERATION

### 1. General

- A. The passenger forward entrance door stair lights are installed under each step of the stair to illuminate each preceding step.
- B. Each passenger forward entrance door stair light consists of two incandescent lamps in a housing, and a reflector to give adequate distribution of light. Power is supplied by the ground service ac bus, and voltage is reduced through a step-down transformer.
- C. The lights are controlled by switches that are actuated by the stair well door latches.



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Passenger Forward Entrance Door Stair Lights -- Simplified Schematic Figure 1/33-46-00-990-801

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#### PASSENGER FORWARD ENTRANCE DOOR STAIR LIGHTS - MAINTENANCE PRACTICES

#### 1. <u>Removal/Installation Passenger Forward Entrance Door Stair Lights</u>

A. Remove Lights

## WARNING: TAG AND SAFETY CIRCUIT BREAKER.

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

## LEFT CONSOLE, GROUND SERVICE BUS

<u>Col</u> <u>Number</u> <u>Name</u>

B1-168 FWD PASS ENTRANCE STAIR LTS

- (2) With stairs extended loosen fasteners and remove cover from light. (GENERAL, SUBJECT 52-00-00)
- (3) Remove lamp(s).

Row

- (4) Disconnect electrical wire.
- (5) Remove attachments and remove light housing from stair.
- B. Install Lights

WARNING: TAG AND SAFETY CIRCUIT BREAKER.

(1) Make sure that this circuit breaker is open and has safety tag:

## LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

<u>w Coi Number Name</u>

- B1-168 FWD PASS ENTRANCE STAIR LTS
- (2) Position light housing on stair. Secure with attachments.
- (3) Connect electrical wiring.
- (4) Install lamp(s).
- (5) Position cover on light housing. Secure with fasteners.
- (6) Remove the safety tag and close this circuit breaker:

## LEFT CONSOLE, GROUND SERVICE BUS Row Col Number Name

B1-168 FWD PASS ENTRANCE STAIR LTS

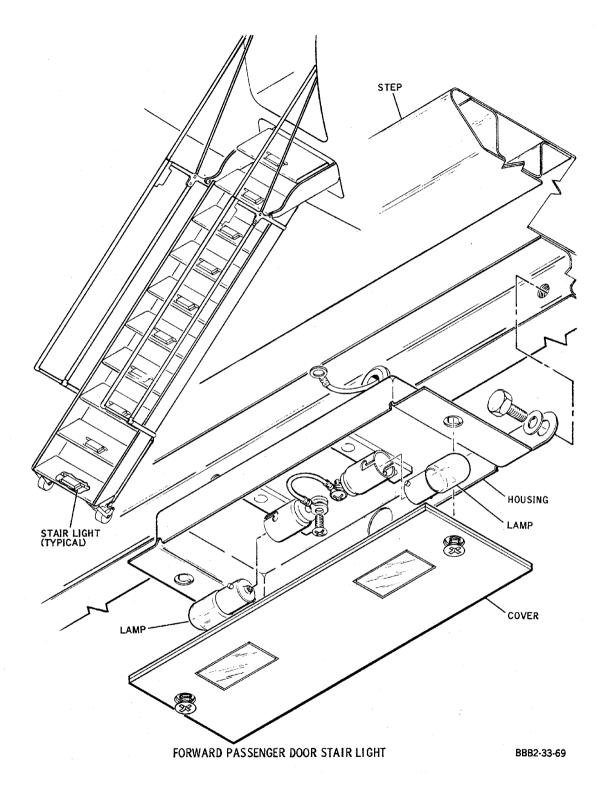
(7) Extend stairs to check proper operation of lights.

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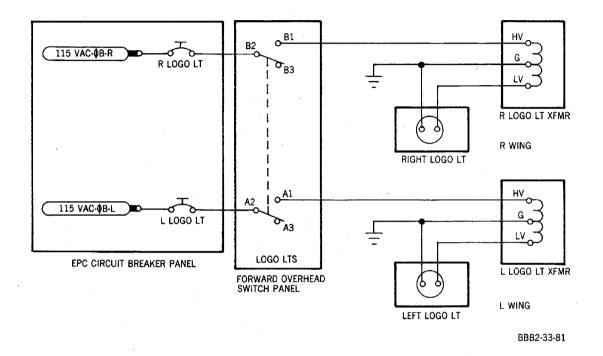
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## LOGO LIGHTS - DESCRIPTION AND OPERATION

### 1. General

- A. The logo lights are sealed beam units installed in the aft edge of both wing tips to provide illumination for the airplane insignia. The units are covered with a louver assembly.
- B. The logo lights receive electrical power from the 115 vac bus through a step-down transformer that is also installed in the wing tip forward of the light. The lights are controlled by a single switch located on the overhead switch panel.



Logo Lights - Simplified Schematic Figure 1/33-47-00-990-801

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



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TP-80MM-WJE



## LOGO LIGHTS - MAINTENANCE PRACTICES

### 1. General

A. The following procedures are given for removal and installation of logo light and transformer and adjusting logo light.

## 2. Equipment and Materials

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

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

Table 201

Name and Number	Manufacturer
SRD-859 Tag - Electrical Wire	
WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 8	372, 875-881, 883, 884, 886, 887, 891
Antiseize compound/ high temperature MIL-A-907 DPM 377	Henkel Loctite Corp.
WJE 412, 414	
Antiseize compound/ high temperature G661	Norvgard Solutions
WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 8	72, 875-881, 883, 884, 886, 887, 891
Silicone primer SS-4004 DPM 3202	General Electric
Silicone compound AS-8660 DPM 209	Dow Corning Corp. (DC-4)
WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 8	372, 875-881, 883, 884, 886, 887, 891
STD-1181 Heat Protective Gloves	

## 3. <u>Removal/Installation Logo Lights</u>

- A. Remove Logo Light (Figure 201)
  - (1) Push LOGO switchlight to OFF position on forward overhead panel.

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- **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
- (2) Open the applicable circuit breaker and install safety tag:

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

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
К	24	B1-747	LEFT LOGO LIGHTS

# UPPER EPC, LIGHTS - RIGHT AC BUS

Row Col Number Name

L 24 B1-746 RIGHT LOGO LIGHTS

# WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; Pre service letter MD-80-DL-33-102

(3) Remove louvre retaining screws and clips and remove louvre.

#### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891

(4) Remove louvre retaining ring and remove louvre.

#### WJE 412, 414

(5) Remove louvre retaining ring and remove louvre.

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

(6) Remove retaining ring, screw, clip, and louvre. Figure 201 (Sheet 3)

# WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITHOUT SERVICE LETTER MD-80-SL-33-102 INCORPORATED

(7) Remove lamp from housing shell.

# WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITH SERVICE LETTER MD-80-SL-33-102 INCORPORATED

- (8) Remove lamp from housing shell as follows:
  - (a) Insert phillips screwdriver through the 0.25 in. (6.35 mm) diameter hole in the housing shell.

## (b) Push the lamp out of the housing shell with the phillips screwdriver.

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

- (9) Install wire tags, STD-859, and remove wires.
- (10) Remove gasket if damaged or deteriorated.
- B. Install Logo Light
  - (1) Make certain LOGO switchlight is in OFF position on forward overhead panel.
  - (2) Make sure that the applicable circuit breaker is open and have safety tag:

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

<u>Row Col Number Name</u>

K 24 B1-747 LEFT LOGO LIGHTS

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



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

- Row Col Number Name
- L 24 B1-746 RIGHT LOGO LIGHTS

#### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891

- **WARNING:** SILICONE PRIMER IS AN AGENT THAT IS FLAMMABLE, POISONOUS, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS LISTED BELOW WHEN SILICONE PRIMER IS USED.
  - DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
  - USE IN AN AREA OPEN TO THE AIR.
  - CLOSE THE CONTAINER WHEN NOT USED.
  - DO NOT GET SILICONE PRIMER IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
  - DO NOT BREATHE THE GAS.

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

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (3) Apply thin film of silicone primer (DPM 3202) to light housing shell in area of gasket installation and allow to dry for 30 minutes.

**WARNING:** HIGH TEMPERATURE ANTISEIZE IS AN AGENT THAT IS POISONOUS. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN HIGH TEMPERATURE ANTISEIZE IS USED.

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

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

- MORE PRECAUTIONARY DATA.
- APPROVED SAFETY EQUIPMENT.
- EMERGENCY MEDICAL AID.
- TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (4) Lightly coat inner surface of gasket with high temperature antiseize compound (DPM 377).

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

- (5) Connect wires to lamp and remove wire tags, STD-859.
- (6) Install lamp in housing shell and make certain that lamp is firmly seated in gasket.

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



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(7) Make certain louvre gasket is installed in louvre.

WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891

**WARNING:** SILICONE SEALANT IS AN AGENT THAT IS POISONOUS, CARCINOGENIC, CORROSIVE, AND AN IRRITANT. MAKE SURE ALL PERSONS OBEY THE PRECAUTIONS WHEN SILICONE SEALANT IS USED.

- DO NOT USE IN AREAS WHERE THERE IS HIGH HEAT, SPARKS, OR FLAMES.
- USE IN AN AREA OPEN TO THE AIR.
- CLOSE THE CONTAINER WHEN NOT USED.
- DO NOT GET SILICONE SEALANT IN THE EYES, ON THE SKIN, OR ON YOUR CLOTHES.
- DO NOT BREATHE THE GAS.
- **WARNING:** REFER TO THE APPLICABLE MANUFACTURER'S OR SUPPLIERS MSDS FOR:
  - MORE PRECAUTIONARY DATA.
  - APPROVED SAFETY EQUIPMENT.
  - EMERGENCY MEDICAL AID.
  - TALK WITH THE LOCAL SAFETY DEPARTMENT OR AUTHORITIES FOR THE PROCEDURES TO DISCARD THIS HAZARDOUS AGENT.
- (a) If louver gasket is replaced, apply thin layer of silicone compound (DPM 209) to gasket and light housing shell. Install gasket with large beads toward inside of housing shell. Allow 24 hours drying time.

# WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; Pre service letter MD-80-DL-33-102

(8) Install louvre over lamp with louvres aligned vertically and secure with retaining clips, ensuring clips are installed under light housing lip, and secured 180 degrees apart using two retaining screws.

#### WJE 401-411, 415-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891

(9) Install louvre over lamp with louvres aligned vertically and secure with retaining ring.

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

- (10) Install louvre over lamp with louvres vertically alligned and install retaining ring. Figure 201 (Sheet 3)
- (11) Position clip between louvre and retaining ring, push down on clip and install screw. Figure 201 (Sheet 3)
- (12) Remove the applicable safety tag and close the circuit breaker:

UPPER EPC, LIGHTS - LEFT AC BUS

 Row
 Col
 Number
 Name

 K
 24
 B1-747
 LEFT LOGO LIGHTS

 UPPER EPC, LIGHTS - RIGHT AC BUS

Row Col Number Name

L 24 B1-746 RIGHT LOGO LIGHTS

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



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(13) Perform adjustment test of logo light. (Paragraph 5.)

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

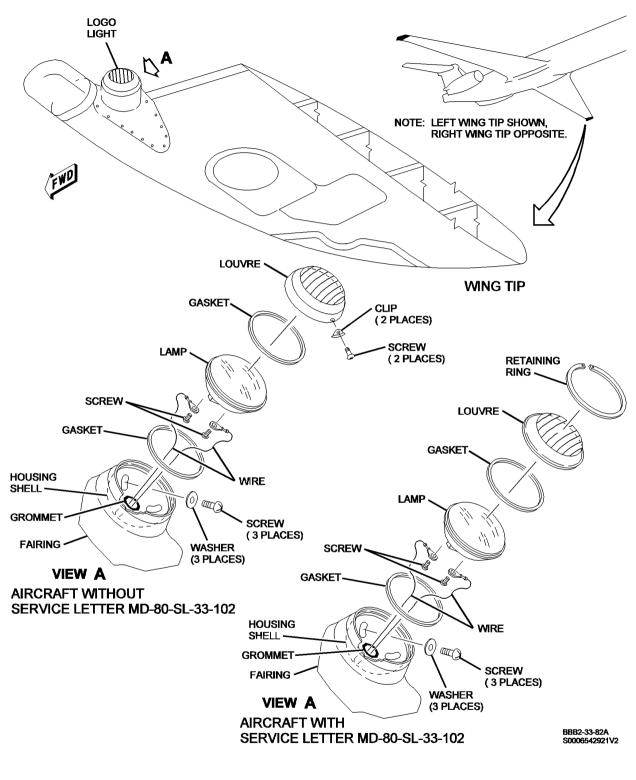
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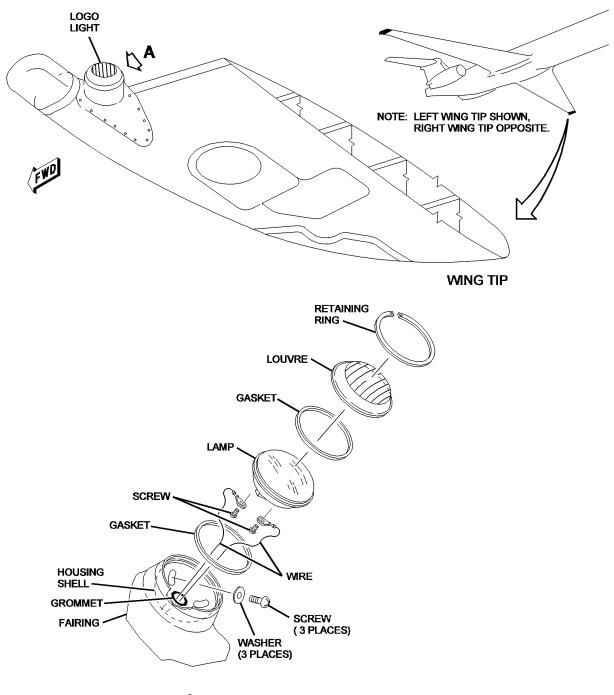


Logo Lights -- Removal/Installation Figure 201/33-47-00-990-802 (Sheet 1 of 3)

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Logo Lights -- Removal/Installation Figure 201/33-47-00-990-802 (Sheet 2 of 3)

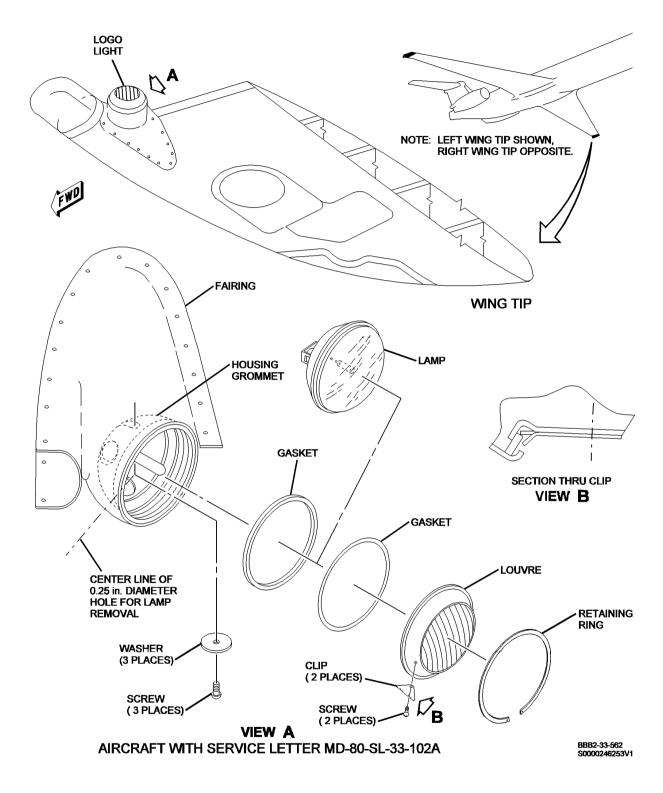
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Logo Lights -- Removal/Installation Figure 201/33-47-00-990-802 (Sheet 3 of 3)

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

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### 4. <u>Removal/Installation Transformer</u>

- A. Remove Transformer (Figure 202)
  - (1) Push LOGO switchlight to OFF position on forward overhead panel.

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

(2) Open the applicable circuit breaker and install safety tag:

UPPER EPC, LIGHTS - LEFT AC BUS					
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>		
K	24	B1-747	LEFT LOGO LIGHTS		

UPPER EPC, LIGHTS - RIGHT AC BUS

<u>Row Col Number Name</u>

L 24 B1-746 RIGHT LOGO LIGHTS

- (3) Open applicable access panel:
  - Left 1146A
  - Right 1207A
- (4) Install wire tags (STD-859) and disconnect electrical wiring from transformer.
- (5) Remove transformer retaining screws and remove transformer.
- B. Install Transformer
  - (1) Make certain LOGO switch is in OFF position on forward overhead panel.

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

(2) Make sure that the applicable circuit breaker is open and has safety tag:

UPPER EPC, LIGHTS - LEFT AC BUS

<u>Row Col Number Name</u>

K 24 B1-747 LEFT LOGO LIGHTS

**UPPER EPC, LIGHTS - RIGHT AC BUS** 

Row Col Number Name

L 24 B1-746 RIGHT LOGO LIGHTS

- (3) Install transformer and secure with retaining screws.
- (4) Connect electrical wiring to transformer and remove wire tags (STD-859).
- (5) Close applicable access panel:
  - Left 1146A
  - Right 1207A
- (6) Remove the applicable safety tag and close this circuit breaker:

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

Row Col Number Name

K 24 B1-747 LEFT LOGO LIGHTS

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



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

Row Col Number Name

L 24 B1-746 RIGHT LOGO LIGHTS

(7) Push LOGO switchlight on overhead switch panel to check proper operation of logo lights.

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

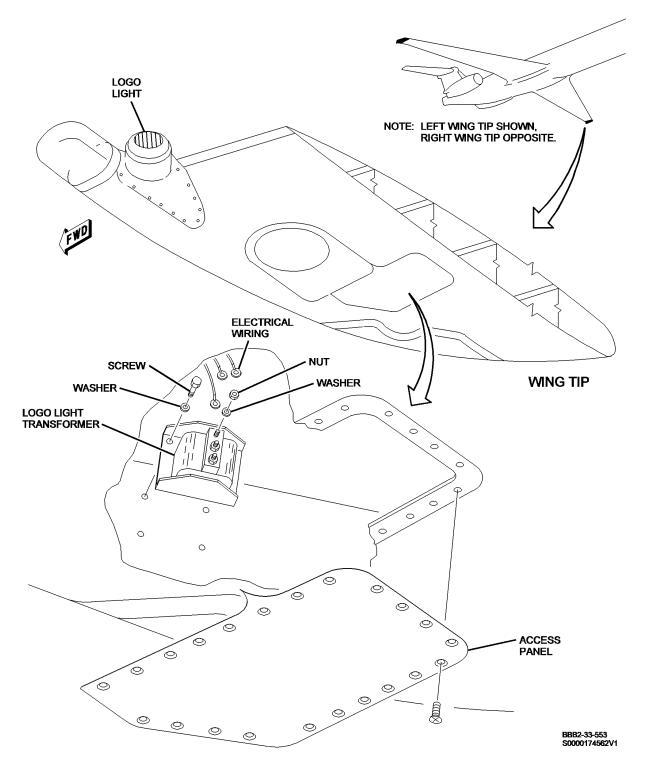
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Logo Lights Transformer -- Removal/Installation Figure 202/33-47-00-990-803

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

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### 5. Adjustment/Test Logo Lights

A. Adjust Light

NOTE: Adjustments should be performed at night or in a darkened hangar.

WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITHOUT SERVICE LETTER MD-80-SL-33-102 INCORPORATED

(1) Remove louvre retaining screws and clips and remove louvre.

# WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITH SERVICE LETTER MD-80-SL-33-102 INCORPORATED

(2) Remove louvre retaining ring and remove louvre.

# WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITHOUT SERVICE LETTER MD-80-SL-33-102 INCORPORATED

(3) Remove lamp from housing shell.

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- (4) Remove lamp from housing shell as follows:
  - (a) Insert phillips screwdriver through the 0.25 in. (6.35 mm) diameter hole in the housing shell.
  - (b) Push the lamp out of the housing shell with the phillips screwdriver.

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

(5) Loosen three housing adjustment screws to permit moving housing shell by hand within fairing while simultaneously providing enough friction to retain housing shell in place.

NOTE: Adjustment screws are readily identifiable by large area washers under screw heads.

- (6) Nest lamp firmly in housing shell and hold with heat protective gloves (STD-1181).
- (7) Push LOGO switchlight to ON, on forward overhead panel.
- (8) Slide or rotate housing shell in fairing for best insignia illumination.
  - <u>NOTE</u>: The lamp provides an elliptical type beam which may be oriented to provide maximum illumination of any particular insignia. Generally best results are obtained with the lamp filaments aligned approximately parallel to the rudder hinge line.
- (9) Push LOGO switchlight to OFF on forward overhead panel.
- (10) Remove lamp from housing shell.
- (11) Tighten housing adjustment screws to secure housing shell firmly in position.
- (12) Replace lamp in housing shell and hold with heat protection gloves (STD-1181).
- (13) Push LOGO switchlight to ON position and check beam pattern.
- (14) Repeat Paragraph 5.A.(8) if pattern is not acceptable.
- (15) Install louvre over lamp. Check that louvre is fully seated behind housing shell flange and that louvres are aligned vertically.

# WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITHOUT SERVICE LETTER MD-80-SL-33-102 INCORPORATED

(16) Secure louvre with retaining screws and clips.

# WJE 401-412, 414-427, 429, 861-866, 868, 869, 871, 872, 875-881, 883, 884, 886, 887, 891; AIRCRAFT WITH SERVICE LETTER MD-80-SL-33-102 INCORPORATED

(17) Secure louvre with retaining ring.



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

- B. Test Light
  - (1) Push LOGO LT switchlight, located on forward overhead switch panel, to ON position. Left and right logo lights should come on.
  - (2) Push LOGO LT switchlight to OFF position. Logo lights should go off.

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

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#### **EMERGENCY LIGHTING - DESCRIPTION AND OPERATION**

#### 1. General

#### WJE 405-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891

A. The emergency lighting system is divided, for descriptive purposes, into three subsystems: flight compartment emergency flood lights, cabin standby lights, and emergency lights. The flight compartment utilizes several of the white floodlights for lighting during emergency conditions. These lights receive power from the dc transfer bus and the emergency dc bus. If ac power failure occurs, one 2.5-volt emergency light is located in the aft overhead switch panel, to provide lighting for the flight compartment.

#### WJE 401-404, 412, 414, 873-879, 892, 893

B. The emergency lighting system is divided, for descriptive purposes, into four subsystems: flight compartment emergency flood lights, cabin standby lights, emergency lights, and emergency aisle floor lights and exit identifiers. The flight compartment utilizes several of the white floodlights for lighting during emergency conditions. These lights receive power from the dc transfer bus and the emergency dc bus. If ac power failure occurs, one 2.5-volt emergency light is located in the aft overhead switch panel, to provide lighting for the flight compartment.

#### WJE ALL

C. The passenger compartment receives light, during emergency conditions, from one of two independently operated lighting systems. The cabin standby lights operate on 28-volt dc power and control is through the emergency power control switch. The alternate system is the emergency light system that operates on special 2.5-volt battery packs in case of total power failure.

#### WJE 401-404, 412, 414, 873-879, 892, 893

D. The emergency aisle floor lights and exit identifiers provide an emergency escape path system designed to aid passengers during emergency evacuation of the aircraft when all sources of illumination above four feet (1.219M) are obscured. The emergency aisle floor lights and exit identifiers are interfaced with the overhead emergency lights. The aisle floor lights and exit identifiers augment the overall emergency lighting system. Operation of the emergency lighting system simultaneously activates the aisle floor lights and exit identifiers.

(EMERGENCY LIGHTS, SECTION 33-53).

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2. Emergency Lighting -- System Schematics

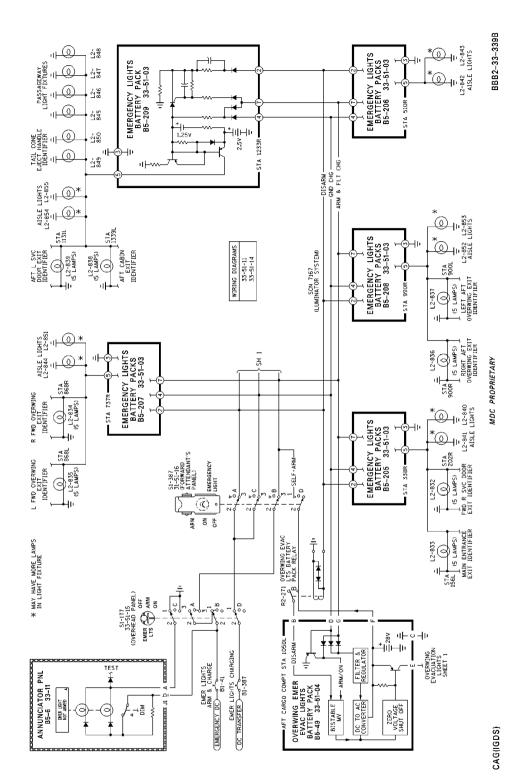
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Emergency Lighting -- System Schematic Figure 1/33-50-00-990-802 (Sheet 1 of 6)

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

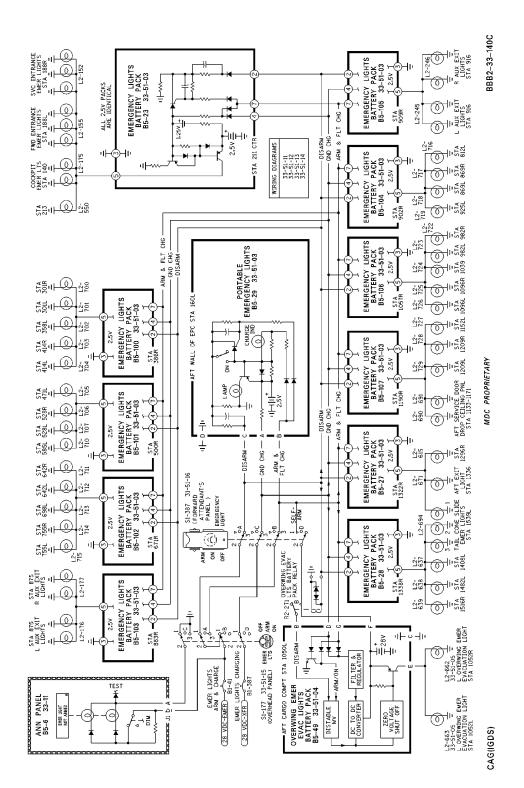


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Emergency Lighting -- System Schematic Figure 1/33-50-00-990-802 (Sheet 2 of 6)

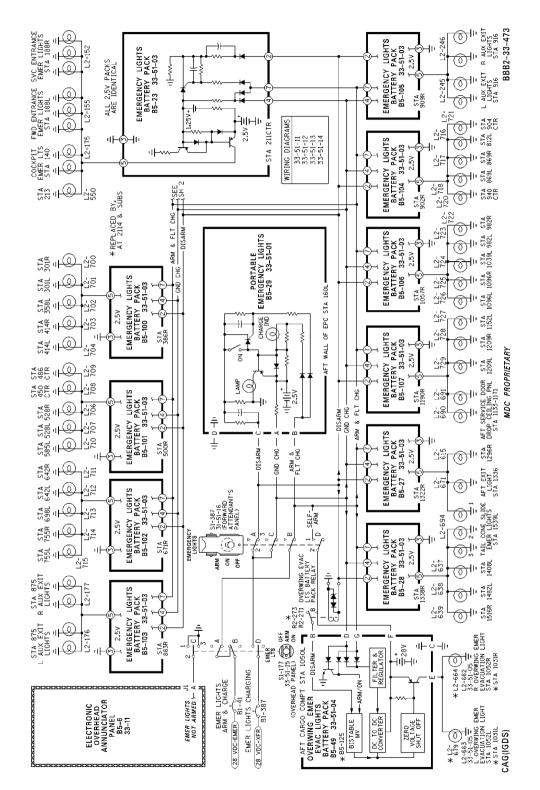
WJE 401-404, 412, 414, 873, 874, 892, 893

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Emergency Lighting -- System Schematic Figure 1/33-50-00-990-802 (Sheet 3 of 6)

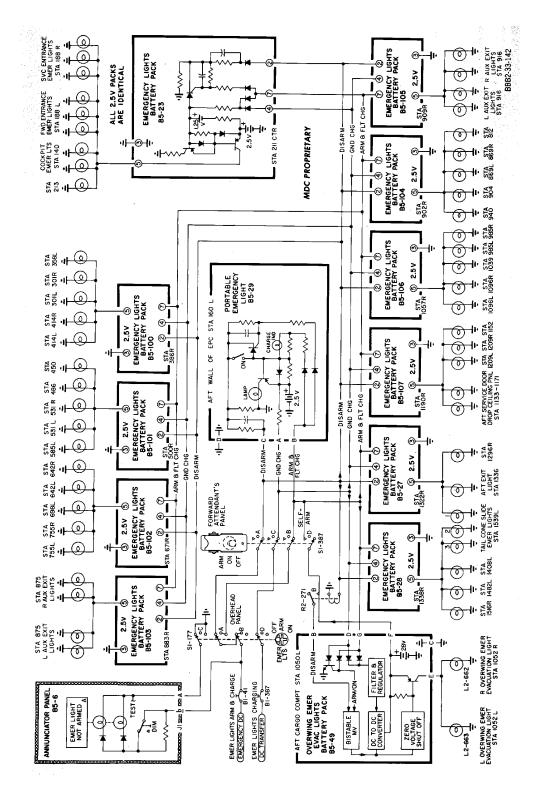
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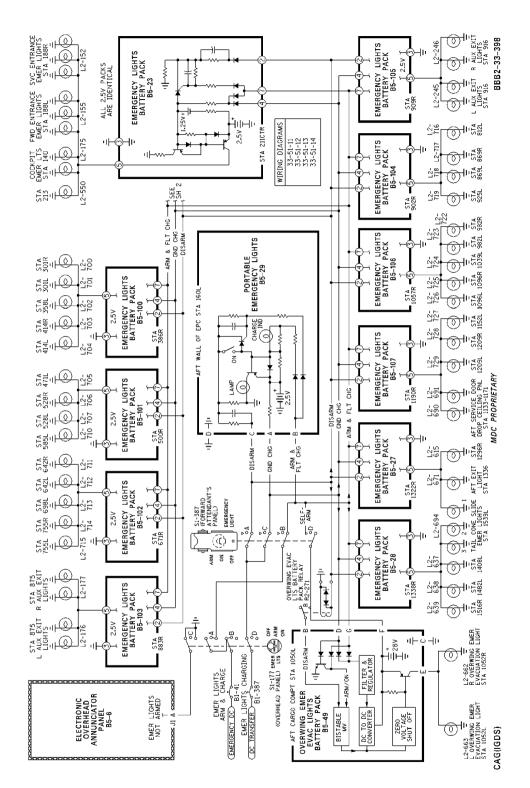
Emergency Lighting -- System Schematic Figure 1/33-50-00-990-802 (Sheet 4 of 6)

EFFECTIVITY WJE 405-411, 416, 422, 425-427, 861, 862, 868, 880, 881, 883, 884 33-50-00

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Emergency Lighting -- System Schematic Figure 1/33-50-00-990-802 (Sheet 5 of 6)

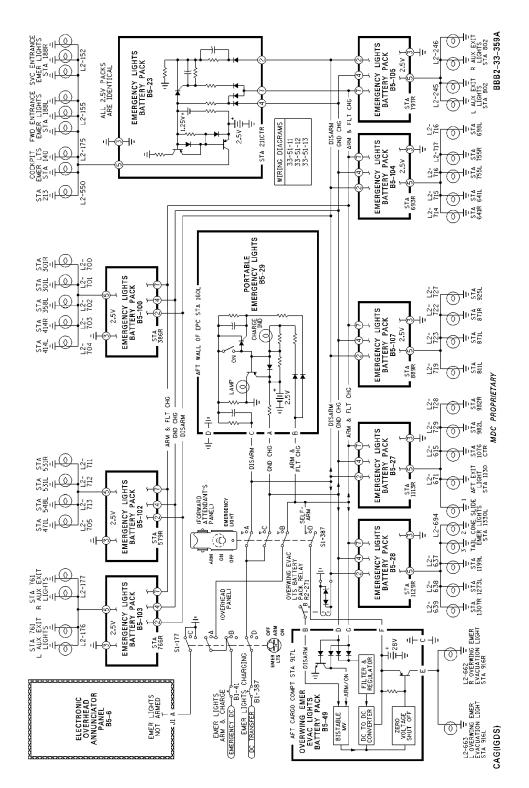
WJE 886, 887

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Emergency Lighting -- System Schematic Figure 1/33-50-00-990-802 (Sheet 6 of 6)

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#### FLIGHT COMPARTMENT EMERGENCY FLOODLIGHTS - DESCRIPTION AND OPERATION

#### 1. General

- A. The instruments and control panels in the flight compartment are lighted by several white floodlights located on the glare-shield, ceiling, and bulkhead of the flight compartment. If ac power failure occurs the dc transfer bus and the emergency dc bus have power available from the 28-volt battery. The white floodlights will then operate until the battery is dis-charged. With the thunderstorm light switch in the on position, the lights are full bright. With the thunderstorm light switch in the off position, the lights can be controlled by the white light dimming rheostats on the light control panels.
- B. Maintenance of the flight compartment emergency floodlights is included under the flight compartment normal lighting systems.

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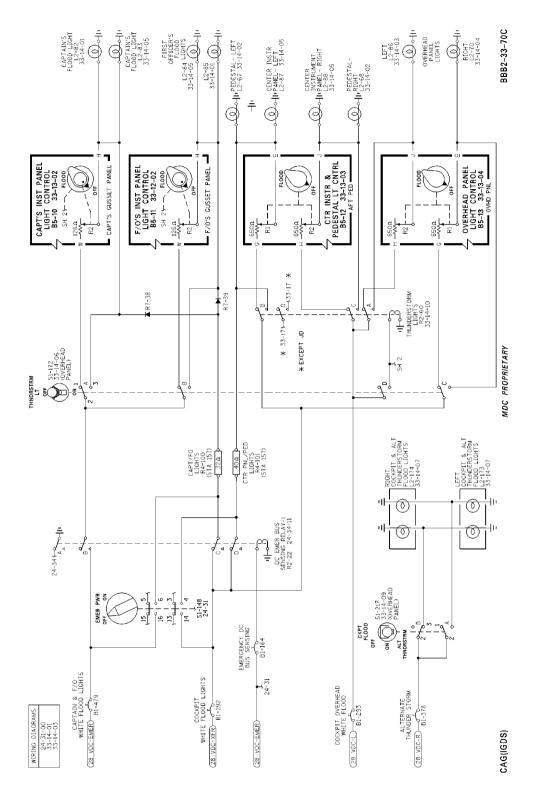
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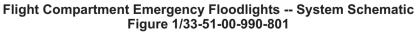
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#### FLIGHT COMPARTMENT EMERGENCY FLOODLIGHTS - ADJUSTMENT/TEST

### 1. General

A. The following procedures provide an operational test of the flight compartment emergency floodlight circuitry.

# 2. Adjustment/Test Emergency Floodlights

A. Test Emergency Floodlights

Μ

- (1) Connect external electrical power to aircraft. (EXTERNAL POWER DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)
  - (a) Make certain left and right AC buses are energized.
- (2) Check that BATT switch on overhead switch panel, is in ON position.
- (3) Open following circuit breakers; captain's, first officer's, left pedestal, and center instrument panel left floodlights should come on at fixed level:

# LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

Row	<u>Col</u>	<u>Number</u>	Name
W	28	B1-378	ALTERNATE THUNDER STORM

#### LOWER EPC, DC PWR FEED

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	37	B1-159	EMERGENCY DC BUS FEED
Ν	38	B1-167	CHARGER & TRANSFER RELAY CONTROL

# LOWER EPC, LIGHTS - LEFT DC BUS

Row Col Number Name

33 B1-293 COCKPIT OVERHEAD WHITE FLOOD

(4) Place EMER PWR switch on overhead switch panel, in ON position: floodlights should remain on.

<u>NOTE</u>: Due to switching transient time, floodlights may flicker momentarily in the above step.

- (5) Rotate FLOOD knob on OVHD CONSOLE LTS control panel, fully clockwise from OFF position; right overhead floodlight should come on dim and become brighter.
- (6) Rotate FLOOD knob on OVHD CONSOLE LTS control panel, counterclockwise to approximately mid position; right overhead floodlight should decrease in intensity.
- (7) Place THNDRSTRM LT switch on overhead switch panel, in ON position; floodlights should increase in intensity.
- (8) Place THNDRSTRM LT switch on overhead switch panel, in OFF position; floodlights should decrease in intensity.
- (9) Rotate FLOOD knob on OVHD CONSOLE LTS control panel, counterclockwise to OFF position; right overhead floodlight should dim and go off.
- (10) Place EMER PWR switch on overhead switch panel, in OFF position.
- (11) Close following circuit breakers; floodlights should go off:

LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS
Row Col Number Name

W 28 B1-378 ALTERNATE THUNDER STORM

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33-51-00

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# LOWER EPC, DC PWR FEED

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Ν	37	B1-159	EMERGENCY DC BUS FEED
Ν	38	B1-167	CHARGER & TRANSFER RELAY CONTROL

# LOWER EPC, LIGHTS - LEFT DC BUS

Row	Col	Number	Name
	<u></u>		

M 33 B1-293 COCKPIT OVERHEAD WHITE FLOOD

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33-51-00

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#### FLIGHT COMPARTMENT EMERGENCY FLOODLIGHTS - ADJUSTMENT/TEST

#### 1. General

A. This procedure contains MSG-3 task card data.

#### TASK 33-51-00-710-801

#### 2. Operational Check of the Cockpit Flood Light and Thunderstorm Lights

NOTE: This procedure is a scheduled maintenance task.

#### A. References

Reference	Title
24-00-00 P/B 001	GENERAL - DESCRIPTION AND OPERATION

# B. Prepare for the Operational Check of the Cockpit Flood Light and Thunderstorm Lights

SUBTASK 33-51-00-861-001

(1) Energize the aircraft electrical power system. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 24-00-00/001)

SUBTASK 33-51-00-865-003

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

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

#### LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
W	28	B1-378	ALTERNATE THUNDER STORM

### LOWER EPC, DC PWR FEED

Row	<u>Col</u>	<u>Number</u>	Name
Ν	37	B1-159	EMERGENCY DC BUS FEED
Ν	38	B1-167	CHARGER & TRANSFER RELAY CONTROL

#### LOWER EPC, LIGHTS - LEFT DC BUS

Row	<u>Col</u>	<u>Number</u>	Name
Μ	33	B1-293	COCKPIT OVERHEAD WHITE FLOOD

#### C. Operational Check of the Cockpit Flood Light and Thunderstorm Lights

#### SUBTASK 33-51-00-710-001

- (1) Do an operational check of the cockpit flood light and thunderstorm lights.
  - (a) Place EMER PWR switch on overhead switch panel, in ON position: floodlights should remain on.

<u>NOTE</u>: Due to switching transient time, floodlights may flicker momentarily in the above step.

- (b) Rotate FLOOD knob on OVHD CONSOLE LTS control panel, fully clockwise from OFF position; right overhead floodlight should come on dim and become brighter.
- (c) Rotate FLOOD knob on OVHD CONSOLE LTS control panel, counterclockwise to approximately mid position; right overhead floodlight should decrease in intensity.

WJE ALL

33-51-00

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- (d) Place THNDRSTRM LT switch on overhead switch panel, in ON position; floodlights should increase in intensity.
- (e) Place THNDRSTRM LT switch on overhead switch panel, in OFF position; floodlights should decrease in intensity.
- (f) Rotate FLOOD knob on OVHD CONSOLE LTS control panel, counterclockwise to OFF position; right overhead floodlight should dim and go off.
- (g) Place EMER PWR switch on overhead switch panel, in OFF position.

#### D. Job Close-up

SUBTASK 33-51-00-865-002

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

#### LOWER EPC, DC AIR CONDITIONING & MISCELLANEOUS

Row Col Number Name

W 28 B1-378 ALTERNATE THUNDER STORM

# LOWER EPC, DC PWR FEED

Row	Col	<u>Number</u>	Name
Ν	37	B1-159	EMERGENCY DC BUS FEED
Ν	38	B1-167	CHARGER & TRANSFER RELAY CONTROL

#### LOWER EPC, LIGHTS - LEFT DC BUS

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

M 33 B1-293 COCKPIT OVERHEAD WHITE FLOOD

SUBTASK 33-51-00-862-001

(2) De-energize the aircraft electrical power system. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 24-00-00/001)

—— END OF TASK ———

#### TASK 33-51-00-710-802

# 3. Operational Check of the Cockpit Floodlights by Pulling Emergency Bus Sensing Circuit Breaker

NOTE: This procedure is a scheduled maintenance task.

#### A. References

Reference	Title
24-00-00 P/B 001	GENERAL - DESCRIPTION AND OPERATION

B. Prepare for the Operational Check of the Cockpit Floodlights by Pulling Emergency Bus Sensing Circuit Breaker

SUBTASK 33-51-00-861-002

(1) Energize the aircraft electrical power system. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 24-00-00/001)

SUBTASK 33-51-00-861-003

Y

- (2) Make sure the battery switch is in the ON position.
- (3) Make sure the THNDRSTRM LT switch is in the OFF position.
- (4) Make sure the CKPT FLOOD switch is in the OFF position.

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33-51-00



# C. Operational Check of the Cockpit Floodlights by Pulling Emergency Bus Sensing Circuit Breaker

SUBTASK 33-51-00-710-002

- (1) Do an operational check of the cockpit floodlights by pulling emergency bus sensing circuit breaker.
  - (a) On the captain's gusset panel rotate the captain's instrument panel light control, rotate the FLOOD knob to the OFF position.
  - (b) On the first officers gusset panel rotate the first officers Instrument panel light control, rotate the FLOOD knob to the OFF position.
  - (c) On the aft pedestal, center instrument and pedestal light control, rotate the FLOOD knob to the OFF position.

SUBTASK 33-51-00-865-005

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

(2) Open these circuit breakers:

```
        OVERHEAD EMERGENCY DC BUS

        Row
        Col
        Number
        Name

        WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
        B
        12
        B1-164
        EMERGENCY DC BUS SENSING

        WJE 410
        B
        13
        B1-164
        EMERGENCY DC BUS SENSING
```

#### WJE ALL

(a) Make sure the captain's, first officer's, center pedestal left, and the center instrument panel left floodlights are ON.

#### D. Job Close-up

SUBTASK 33-51-00-865-007

(1) Close these circuit breakers:

 OVERHEAD EMERGENCY DC BUS

 Row
 Col
 Number
 Name

 WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
 B
 12
 B1-164
 EMERGENCY DC BUS SENSING

 WJE 410
 B
 13
 B1-164
 EMERGENCY DC BUS SENSING

#### WJE ALL

SUBTASK 33-51-00-865-006

- (2) Return aircraft to normal configuration.
- (3) De-energize the aircraft electrical power system. (GENERAL DESCRIPTION AND OPERATION, PAGEBLOCK 24-00-00/001)

—— END OF TASK ———

WJE ALL

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#### **CABIN STANDBY LIGHTS - DESCRIPTION AND OPERATION**

#### 1. General

A. During emergency conditions, the passenger compartment is lighted by a number of lights installed in ceiling light fixtures. In the event of ac power failure, the emergency power control switch in the overhead switch panel is placed in the on position to connect the cabin standby light circuit directly to the battery direct bus. The battery direct bus supplies 28-volt power to the standby lights until the battery is discharged. During the interval from the time of ac power failure and the closing of the emergency power control switch; the passenger compartment is lighted by the emergency light system. (EMERGENCY LIGHTS - DESCRIPTION AND OPERATION, PAGEBLOCK 33-53-00/001)

WJE ALL

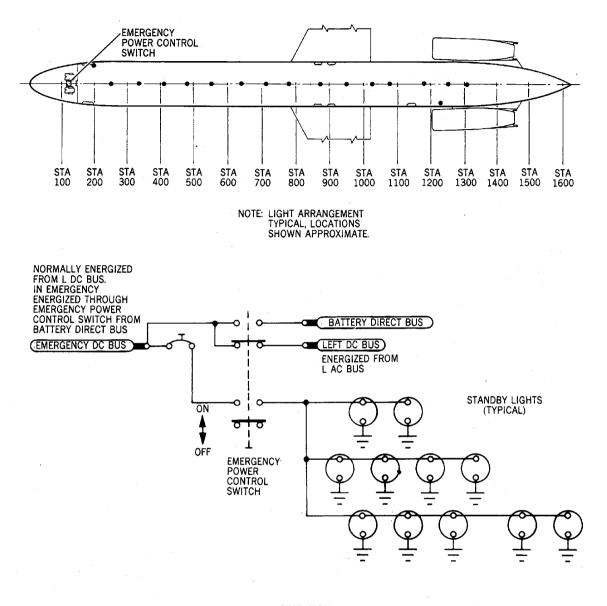
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#### OPERATION

IF THE POWER BUSES BECOME DEENERGIZED, PLACING THE EMERGENCY POWER CONTROL SWITCH TO ON POSITION CONNECTS THE EMERGENCY DC BUS TO THE BATTERY DIRECT BUS AND AUTOMATICALLY TURNS ON THE CABIN STANDBY LIGHTS. THE LIGHTS WILL STAY ON UNTIL THE AIRPLANE BATTERY IS DISCHARGED. THE CABIN STANDBY LIGHTS ARE NOT CONNECTED TO THE EMERGENCY LIGHTS OR TO THE FLIGHT COMPARTMENT EMERGENCY ELOOD LIGHTS COMPARTMENT EMERGENCY FLOOD LIGHTS.

BBB2-33-71

#### **Cabin Standby Lights** Figure 1/33-52-00-990-802

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# CABIN STANDBY LIGHTS - ADJUSTMENT/TEST

# 1. General

A. The following procedures provide an operational test of the cabin standby lights circuitry.

# 2. Adjustment/Test Cabin Standby Lights

- A. Test Standby Lights
  - (1) Make certain EMER PWR control switch on overhead panel is in OFF position.
  - (2) Make sure that these circuit breakers are closed:

OVERHEAD EMERGENCY DC BUS Row <u>Col</u> <u>Number</u> Name WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 А EMERGENCY POWER IN USE LIGHTS 12 B1-165 А 13 B1-42 CABIN STANDBY LIGHTS WJE 410 А 13 B1-165 EMERGENCY POWER IN USE LIGHTS A 14 B1-42 CABIN STANDBY LIGHTS

# WJE ALL

- (3) Place EMER PWR control switch on overhead panel in ON position.
- (4) EMER PWR IN USE light on overhead panel and all cabin standby lights should illuminate.
- (5) Place EMER PWR control switch in OFF position.
- (6) EMER PWR IN USE light and all cabin standby lights should extinguish.

WJE ALL

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# **EMERGENCY LIGHTS - DESCRIPTION AND OPERATION**

#### 1. General

#### WJE 405-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891

A. The emergency lights consist of numerous lights and lighted exit signs distributed throughout the passenger compartment and aft accessory compartment, one light in the aft overhead switch panel in the flight compartment, and the overwing emergency evacuation lights located in the fuselage. The emergency lights go on if total ac power loss occurs, or if power is removed from the emergency dc bus. The lights are powered by rechargable battery packs. To prevent the battery packs energizing the lights by internal power, the emergency lights switches must be placed in the off position before shutting down airplane power. The batteries must be checked periodically and replaced as necessary.

#### WJE 401-404, 412, 414, 873-879, 892, 893

B. The emergency lights, emergency aisle floor lights, and exit identifiers consist of numerous lights and lighted exit signs distributed throughout the passenger compartment and aft accessory compartment, one light in the aft overhead switch panel in the flight compartment, and the overwing emergency evacuation lights located in the fuselage. The emergency lights go on if total ac power loss occurs, or if power is removed from the emergency dc bus. The lights are powered by rechargeable battery packs. To prevent the battery packs energizing the lights by internal power, the emergency lights switches must be placed in the off position before shutting down aircraft power. The batteries must be checked periodically and replaced as necessary.

#### WJE ALL

- C. Each battery pack is transistorized, and contains an etched circuit and rechargable nickel-cadmium batteries. One emergency light, installed on the aft partition of the electrical power center, is a portable, self-contained unit. It operates in the system circuit or can be removed and used as a flash-light. When the unit is used in the airplane circuit with the flight compartment emergency lights switch placed in the arm position, a 28-volt lamp in the unit glows continually to provide a visual indication that the pack is being charged.
- D. There are four operating conditions of the emergency lights circuit. The conditions are described with the attendant's emergency lights switch, located on the attendant's panel, in the off position. The first condition is with the flight compartment emergency lights switches in the off position. The emergency light not armed light on the annunciator panel is on. The battery packs are receiving a trickle charge from the dc transfer bus. The emergency lights are off. The 28-volt lamp in the portable battery pack is off. With power available to the emergency dc bus, the battery pack circuit is disarmed, preventing operation of the emergency lights from the batteries in the packs.
- E. The second condition of the emergency lights circuit is with the flight compartment emergency light switch in the on position. The emergency light not armed light on the annunciator panel is on. The circuit to the emergency dc bus is open. The emergency lights are on. The 28-volt lamp in the portable battery pack is off. With no power available to the battery pack through the emergency light, forward bias in the battery pack circuit turns the emergency lights on. This condition is established by passing momentarily through the ARM position between the OFF and TEST/ON positions.
- F. The third condition of the emergency lights circuit is with the flight compartment emergency lights switch in the arm position, which is the normal in-flight position. The emergency light not armed light on the annunciator panel is off. The emergency lights are off. The battery packs are receiving a trickle charge at a reduced rate from the emergency dc bus. The 28-volt lamp in the portable battery pack is on. With power available to the emergency dc bus, reverse bias in the battery pack circuit prevents operation of the emergency lights from the batteries in the packs. The 28-volt lamp in the portable unit glows to indicate the battery packs are being charged.

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- G. The fourth condition of the emergency lights circuit is with the emergency light switch in the arm position if ac power loss occurs. The emergency lights come on until the emergency dc bus is energized through the emergency power control switch from the battery direct bus, until the emergency power control switch is turned off, or the battery is discharged. When the airplane battery is discharged, or the emergency power control switch is turned off, there is no power and the standby lights go off. With no power available to the battery pack through the emergency light switch, forward bias in the battery pack circuit turns the emergency lights on. The emergency lights will remain on until the 2.5-volt batteries are discharged.
- **CAUTION:** DO NOT LEAVE EMERGENCY LIGHTS SWITCH, ON OVERHEAD SWITCH PANEL, IN ARM OR ON POSITION WHEN RESTORING ATTENDANT PANEL EMERGENCY LIGHT SWITCH TO OFF POSITION. BATTERIES WILL CONTINUE TO DISCHARGE IF PROPER SEQUENCE IS NOT FOLLOWED.
- H. The emergency lights switch on the forward cabin attendant's panel provides an alternate and independent means of energizing the emergency lights. The attendant's switch is normally locked in the off position and used only to override the flight compartment switch during emergency condition. To prevent accidental use of the emergency lights and inadvertent discharge of the emergency light batteries, the attendant's switch is equipped with a switch guard that is secured by a breakaway lockwire. The lockwire breaks when the switch guard is pulled to gain access to the switch. If the flight compartment switch is in the arm position, placing the attendant's switch in the on position will cause the emergency lights to come on. If the flight compartment switch is in the off position momentarily, and releasing to on position, before the emergency lights will come on. When the attendant's switch is used to arm the battery packs, the arming voltage is supplied by the overwing emergency evacuation lights battery packs located in the aft cargo compartment. (LOCKWIRE SAFETYING MAINTENANCE PRACTICES, PAGEBLOCK 20-10-18/201)

#### 2. Care and Maintenance of Emergency Light System Batteries

- A. Optimum performance from the size "D" nickel cadmium (Ni-Cd) cells, in the cabin emergency lighting system, is dependent upon strict adherence to the following practices and methods:
  - (1) New batteries must always be installed in sets and should be at the same initial state-of-charge. It is also desirable that these be of the same approximate age to avoid likelihood of an early loss of capacity and voltage by some of the cells.
  - (2) It is mandatory that cells used in a given battery pack be from the same manufacturer. It is also important that all cells, which are either being charged or discharged in a single string, be from the same manufacturer. Differences in the manufacturer's cell internal designs, operating impedance and performance characteristics do not permit equal charging, equal state of charge, or equal cell volt-ages if they are mixed in battery shop chargers or in the battery pack.
  - (3) When operated in the momentary TEST/ON position, operating time should be less than two (2) minutes in order to conserve battery state-of-charge. 1 1/2 hours (90 minutes) of charging time with emergency lights switch in "ARMED" condition or 1 hour (60 minutes) in "OFF" condition should be allowed for each minute in excess of two (2) operating minutes while supplying power to emergency lamps. Batteries must be recharged in this manner or as specified in applicable sections of this manual prior to returning the aircraft to service.
  - (4) Ni-Cd batteries are inherently subject to a partial, time-dependent reduction of available capacity. A major contributor to reduction is the memory effect, which is due to repetitive identical cycles of operation which include partial-capacity discharges. Significant reductions of both terminal voltage and available capacity have been identified due to this phenomenon.
  - (5) Memory effect can be cause of failed pre-flight test or an observed premature reduction of illumination. This effect can be removed by complete discharge of each cell and recharging per following reconditioning instructions.

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(a) Complete discharge of cell:

**CAUTION:** DO NOT ATTEMPT TO DISCHARGE TWO OR MORE CELLS IN SERIES. PERMANENT DAMAGE CAN BE CAUSED BY POLARITY REVERSAL.

- 1) Individually discharge each cell through circuit load of 0.2 ohms until cell voltage reads less than 0.2 volts while under load.
- (b) Recharge for capacity test or service:
  - 1) Cells may be charged individually or in series. Charge at room temperature at 400 milliamperes maximum for 16 hours or at manufacturers recommended rate/time.

<u>NOTE</u>: Charge current should not exceed 400 milliamperes at any time. Charge voltage shall be 1.40 to 1.48 per cell while under charge.

#### 3. Care and Maintenance of Emergency Lights

- A. Items contributing to reduction of illumination from ceiling emergency lights are dust and accumulation of tar and nicotine from cigarette smoke.
  - (1) Both lenses and reflectors of emergency ceiling lights should be washed reqularly with mild detergent to maintain lighting efficiency of fixture.

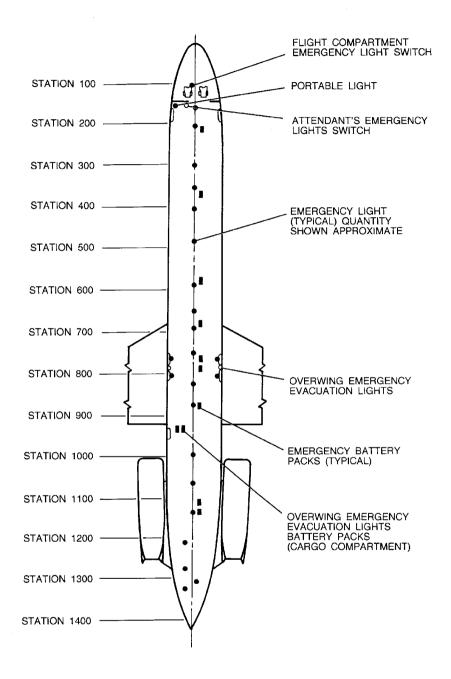
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NOTE: LIGHT AND BATTERY ARRANGEMENT TYPICAL, LOCATIONS SHOWN APPROXIMATE.

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#### Emergency Lights and Battery Packs Locations Figure 1/33-53-00-990-814 (Sheet 1 of 2)

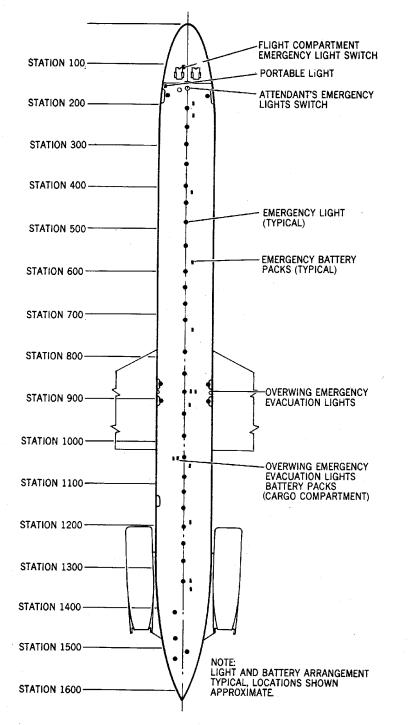
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#### Emergency Lights and Battery Packs Locations Figure 1/33-53-00-990-814 (Sheet 2 of 2)

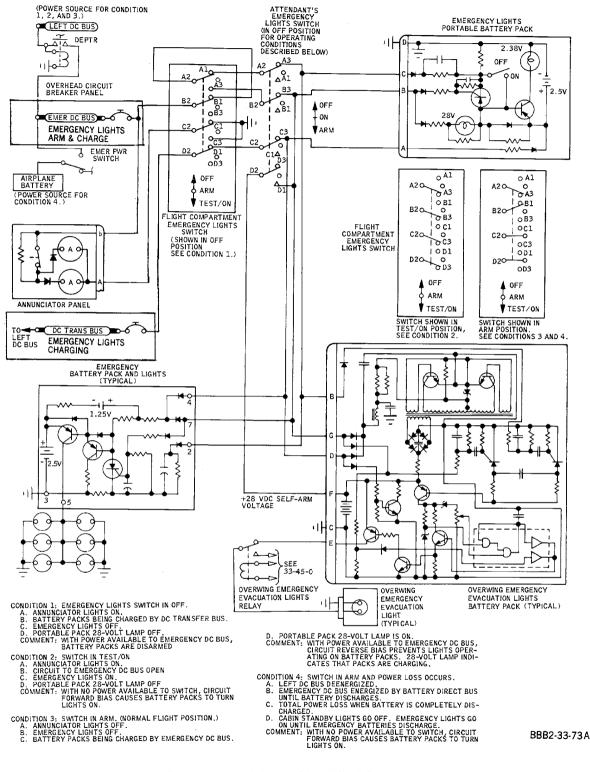
WJE 401-404, 410, 412, 414, 873-879, 892, 893

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#### Emergency Lights -- Simplified Schematic Figure 2/33-53-00-990-816

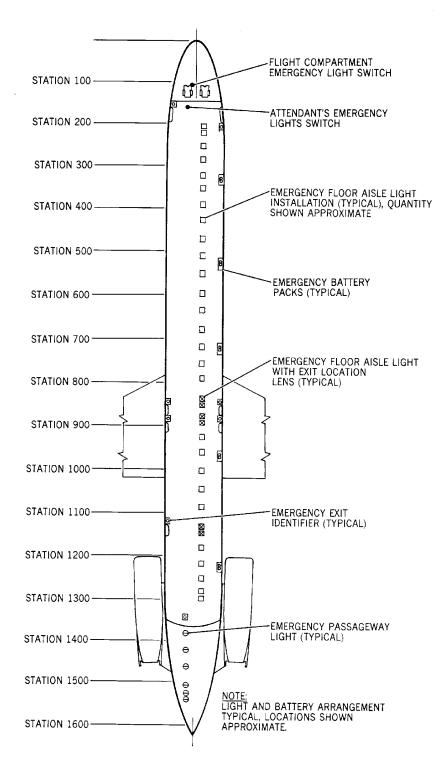
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WJE 401-404, 412, 414, 873-879, 892, 893

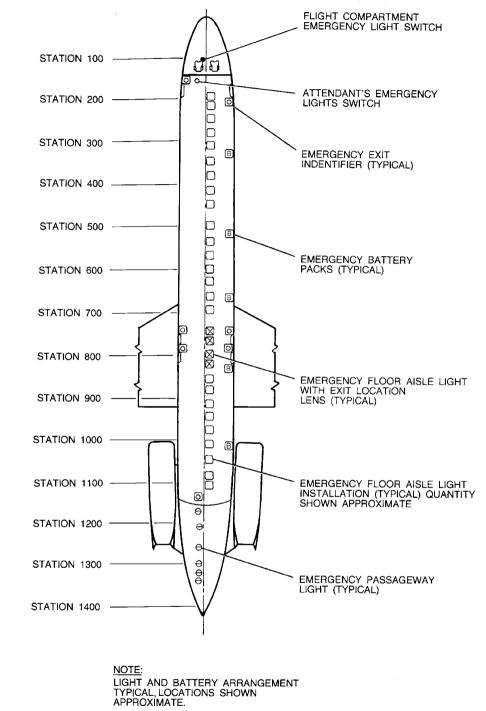
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BBB2-33-314

#### Emergency Aisle Floor Lights, Passageway Lights, Exit Identifiers, and Battery Packs Locations Figure 3/33-53-00-990-818 (Sheet 2 of 2)

WJE 410

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# EMERGENCY LIGHTS - REMOVAL/INSTALLATION

# 1. General

- A. Most of the emergency lights are contained in the normal lighting fixtures. If replacement of a lamp or other fixtures is necessary, refer to the removal/installation procedure for that particular fixture. The following procedures provide instructions for the removal and installation of the overwing emergency exit lights, the cabin emergency light batteries, the cabin emergency lights battery packs located in the cabin, and the overwing emergency evacuation lights emergency battery packs located in the aft cargo compartment.
- **CAUTION:** DO NOT LEAVE EMERGENCY LIGHTS SWITCH, ON OVERHEAD SWITCH PANEL, IN ARM OR ON POSITION WHEN RESTORING ATTENDANT PANEL EMERGENCY LIGHT SWITCH TO OFF POSITION. BATTERIES WILL CONTINUE TO DISCHARGE IF PROPER SEQUENCE IS NOT FOLLOWED.
- B. The emergency lights switch on the overhead switch panel and the emergency lights switch on forward attendant's panel, should be placed in the off position before opening the emergency lights arm and charge circuit breaker to prevent inadvertent operation of the emergency battery packs. For each minute of operation, the batteries must charge approximately 1 hour and 30 minutes to recover.

# **CAUTION:** AVOID CONTACT BETWEEN TERMINAL SCREW AND POSITIVE CONTACT OF BATTERY HOLDER. DAMAGE TO CHARGING CIRCUITRY MIGHT RESULT.

C. Replace cabin emergency lights batteries as necessary. They are located inside of battery packs, two "D" size cells in series per pack. Removal of battery pack is not necessary for battery replacement.

NOTE: Battery manufacturer must be the same for both batteries.

### 2. <u>Removal/Installation Overwing Emergency Exit Lights</u>

Figure 402

A. Remove Lights

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

- **CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION.
- (1) Open these circuit breakers and install safety tags:

#### LOWER EPC, DC TRANSFER BUS

	· —· •,		
Row	<u>Col</u>	<u>Number</u>	Name
Z	37	B1-387	EMERGENCY LIGHTS CHARGING
OVERH <u>Row</u>	EAD E <u>Col</u>	EMERGENC <u>Number</u>	Y DC BUS <u>Name</u>
WJE 401 891-893	I <b>-409</b> , 4	111, 412, 414	-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE
WJE 410	)		
Α	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

WJE ALL

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#### WJE ALL

- (2) Remove emergency exit light cover by pressing up on lower flange.
- (3) Remove lamps.
- (4) Remove support attaching screws.
- (5) Disconnect electrical wiring.
- B. Install Light

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

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

LOWER EPC, DC TRANSFER BUS			
Row	Col	<u>Number</u>	Name
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

# **OVERHEAD EMERGENCY DC BUS**

RowColNumberNameWJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,<br/>891-893A14B1-41EMERGENCY LIGHTS ARM AND CHARGEWJE 410A15B1-41A15B1-41EMERGENCY LIGHTS ARM AND CHARGE

#### WJE ALL

- (2) Connect electrical wiring.
- (3) Position support on brackets and install attaching screws.
- (4) Install lamps.
- (5) Install emergency exit light cover by pressing up on lower flange.
- (6) Remove the safety tags and close these circuit breakers:

# LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

# OVERHEAD EMERGENCY DC BUS

```
        Row
        Col
        Number
        Name

        WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
        A
        14
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE

        WJE 410
        A
        15
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE
```

#### WJE ALL

 (7) Perform operational check to check proper operation of lights (EMERGENCY LIGHTS - CHECK, PAGEBLOCK 33-53-00/601).

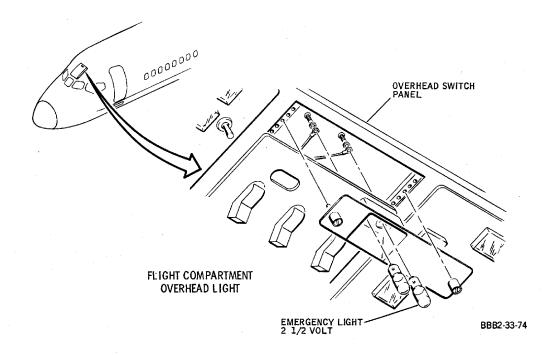
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Forward Fuselage Emergency Lights -- Removal/Installation Figure 401/33-53-00-990-801

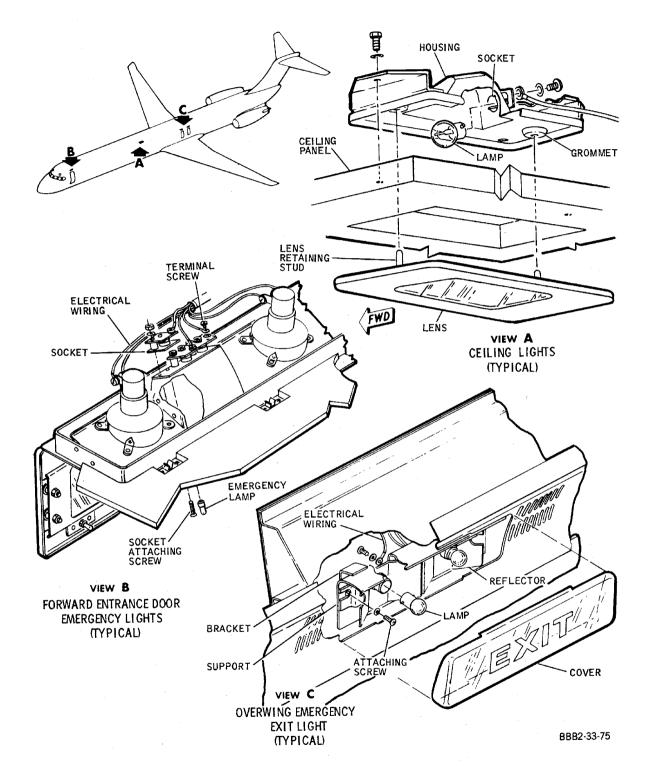
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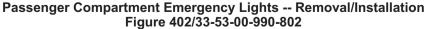
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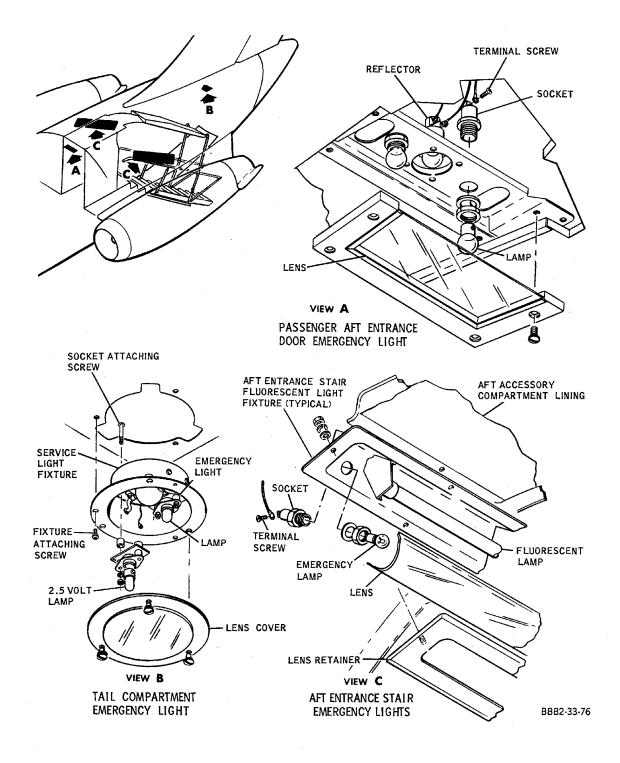
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Aft Fuselage Emergency Lights -- Removal/Installation Figure 403/33-53-00-990-803

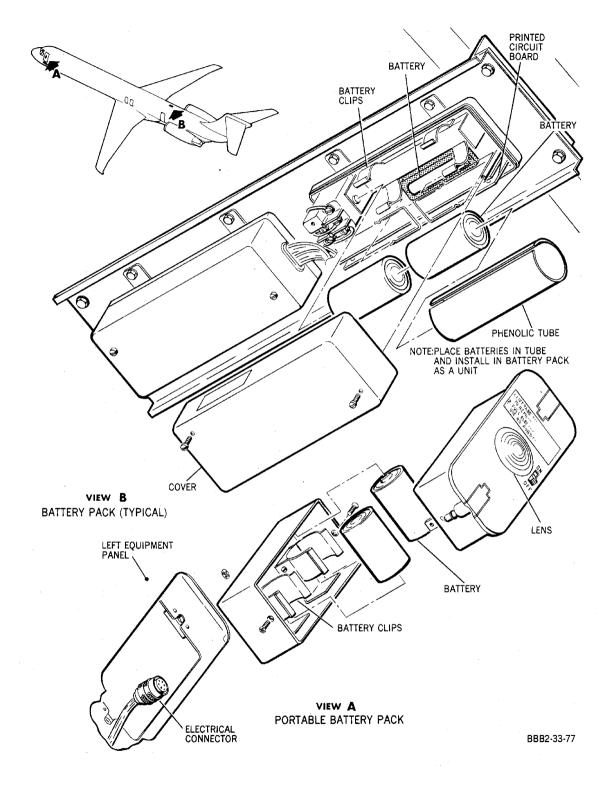
EFFECTIVITY

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Cabin Emergency Lights Battery Packs -- Removal/Installation Figure 404/33-53-00-990-804

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### 3. Removal/Installation Battery Packs

A. Remove Cabin Emergency Lights Battery Pack

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

**CAUTION:** BEFORE OPENING CIRCUIT BREAKERS MAKE CERTAIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION.

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

• • • • • • •			
LOWER <u>Row</u> Z	EPC, <u>Col</u> 37	DC TRANS Number B1-387	FER BUS <u>Name</u> EMERGENCY LIGHTS CHARGING
OVERH	EAD E		Y DC BUS
<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
WJE 401 891-893	-409, 4	11, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE
<b>WJE 410</b> A	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

## WJE ALL

- (2) Gain access to battery packs as follows:
  - (a) Aft battery packs Remove aft right lavatory ceiling panel and disconnect speaker wires from terminal strip on vertical panel.
  - (b) Mid-cabin battery packs Remove access panel in cabin section.
  - (c) Forward battery packs Open cabin forward drop ceiling access door.
- (3) Remove cover attaching screws and lift cover from battery pack.
- (4) Disconnect electrical wiring.
- (5) Remove attaching screws and remove battery pack.
- B. Install Cabin Emergency Lights Battery Pack

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

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

LOWER EPC, DC TRANSFER BUS			
Row	<u>Col</u>	<u>Number</u>	Name
Z	37	B1-387	EMERGENCY LIGHTS CHARGING
OVERH <u>Row</u>	IEAD E <u>Col</u>	MERGENC <u>Number</u>	Y DC BUS <u>Name</u>
WJE 401 891-893	1-409, 4	11, 412, 414	-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

WJE ALL

33-53-00

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

(Contir	nued)		
OVERH	EAD E		SY DC BUS
Row	<u>Col</u>	<u>Number</u>	Name
WJE 410	)		
А	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

### WJE ALL

- (2) Position battery pack on support and install attaching screws.
- (3) Connect electrical wiring to battery pack.
- (4) Position cover on battery pack and install attaching screws.
- (5) Close access as follows:
  - (a) Aft battery packs Connect speaker wires to terminal strip and install right lavatory ceiling panel.
  - (b) Mid-cabin battery packs Install access panel in cabin ceiling.
  - (c) Forward battery packs Close cabin forward drop ceiling access door.
- (6) Remove the safety tags and close these circuit breakers:

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

### OVERHEAD EMERGENCY DC BUS

<u>Row Col Number Name</u>

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

 A
 14
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

 WJE 410
 A
 15
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

#### WJE ALL

- (7) Perform operational check to check proper operation of circuit. (EMERGENCY LIGHTS CHECK, PAGEBLOCK 33-53-00/601)
- C. Remove Overwing Emergency Evacuation Lights Emergency Battery Pack

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

# **CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION.

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

### LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

WJE ALL

33-53-00

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### OVERHEAD EMERGENCY DC BUS

 Row
 Col
 Number
 Name

 WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
 A
 14
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

 WJE 410
 A
 15
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

#### WJE 875-879, 886, 887

- (2) Gain access to battery packs located in aft cargo compartment ceiling (access panel 5719C).
- (3) Disconnect electrical wiring.
- (4) Remove attaching screws and remove battery pack.

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

- (5) On aircraft without an auxiliary fuel tank installed in aft cargo compartment, remove battery pack as follows:
  - (a) Remove aft cargo compartment ceiling (access panel 5719C) to gain access to battery pack

(PAGEBLOCK 25-52-01/201).

- (b) Disconnect electrical wiring connector.
- (c) Remove attaching screws and remove battery pack from mounting support.
- (6) On aircraft equipped with an auxiliary fuel tank installed in aft cargo compartment, remove battery pack as follows:
  - NOTE: On MD-82 and MD-83 aircraft, remove main cabin floor (access panel 5829D) to gain access to battery pack. (FLIGHT AND PASSENGER COMPARTMENT FLOOR PANELS, SUBJECT 53-20-01, Page 201)
  - NOTE: On MD-87 aircraft, remove main cabin floor (access panel 5831E) to gain access to battery pack. (FLIGHT AND PASSENGER COMPARTMENT FLOOR PANELS, SUBJECT 53-20-01, Page 201)
  - (a) Remove attaching hardware from battery pack mounting support.
  - (b) Lift up battery pack mounting support to gain access to battery pack electrical wiring connector.
  - (c) Disconnect electrical connector from battery pack.
  - (d) Remove screws attaching battery pack to mounting support and remove battery pack.

### WJE ALL

D. Install Overwing Emergency Evacuation Lights Emergency Battery Pack

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

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

# LOWER EPC, DC TRANSFER BUS

### Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

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33-53-00

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### **OVERHEAD EMERGENCY DC BUS**

 Row
 Col
 Number
 Name

 WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
 A
 14
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

 WJE 410
 A
 15
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

### WJE 875-879, 886, 887

- (2) Position battery pack on support and install attaching screws.
- (3) Connect electrical wiring.

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

- (4) On aircraft without an auxiliary fuel tank installed in aft cargo compartment, install battery pack as follows:
  - (a) Position battery pack on mounting support and install attaching screws.

**CAUTION:** DAMAGE TO CONNECTOR MAY RESULT BY SHORTING PIN "F" TO WIRING CONNECTOR SHELL IF CONNECTOR ASSEMBLIES ARE NOT ALIGNED WHEN MATED.

- (b) Connect electrical connector making certain connector is keyed to battery receptacle.
- (5) On aircraft equipped with an auxiliary fuel tank installed in aft cargo compartment, install battery pack as follows:
  - (a) Position battery pack on mounting support and install attaching screws.

**CAUTION:** DAMAGE TO CONNECTOR MAY RESULT BY SHORTING PIN "F" TO WIRING CONNECTOR SHELL IF CONNECTOR ASSEMBLIES ARE NOT ALIGNED WHEN MATED.

- (b) Connect electrical connector making certain connector is keyed to battery receptacle.
- (c) Install battery pack mounting support and install attaching hardware.

### WJE ALL

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

LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

### **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,891-893A14B1-41EMERGENCY LIGHTS ARM AND CHARGE

WJE 410 A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

### WJE ALL

(7) Perform operational check to check proper operation of circuit (EMERGENCY LIGHTS - CHECK, PAGEBLOCK 33-53-00/601).

EFF	ECTIVITY
WJE ALL	

33-53-00

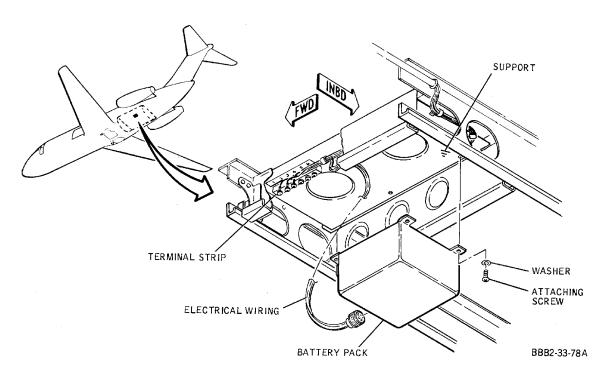
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WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-874, 880, 881, 883, 884, 891-893

(8) Install access panel.

WJE ALL



#### Emergency Battery Pack -- Overwing Emergency Evacuation Lights Figure 405/33-53-00-990-806

# 4. Removal/Installation Aft Evacuation Slide Emergency Light

NOTE: Ref. Figure 406

A. Remove Light

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

**CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHTS SWITCHES ARE IN OFF POSITION.

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

LOWER <u>Row</u>	EPC, <u>Col</u>	DC TRANS <u>Number</u>	FER BUS <u>Name</u>
Z	37	B1-387	EMERGENCY LIGHTS CHARGING
OVERH <u>Row</u>	EAD E <u>Col</u>	MERGENC <u>Number</u>	Y DC BUS <u>Name</u>
WJE 401 891-893	-409, 4	11, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

WJE ALL

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

(Contii	nued)		
OVERH	IEAD E	EMERGENC	SY DC BUS
Row	<u>Col</u>	<u>Number</u>	Name
WJE 410	D		
А	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

#### WJE ALL

- <u>NOTE</u>: Relamping can be accomplished by turning retaining screws one-quarter turn and opening cover and lens unit downward on hinge.
- (2) Remove attaching screws from mounting tabs.
- (3) Disconnect electrical wiring.
- B. Install Light

WARNING: TAG AND SAFETY CIRCUIT BREAKERS.

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

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

LOWER EPC, DC TRANSFER BUS

<u>Row Col Number Name</u>

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

#### OVERHEAD EMERGENCY DC BUS

```
        Row
        Col
        Number
        Name

        WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
        A
        14
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE

        WJE 410
        A
        15
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE
```

#### WJE ALL

- (2) Connect electrical wiring.
- (3) Position light and install attaching screws.
- (4) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS Row Col Number Name Ζ B1-387 EMERGENCY LIGHTS CHARGING 37 **OVERHEAD EMERGENCY DC BUS** Col Number Row Name WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 А 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE **WJE 410** EMERGENCY LIGHTS ARM AND CHARGE А 15 B1-41

	• EFFI	ECTI	VH	Y -
WJE	ALL			

33-53-00



WJE ALL

(5) Perform operational check (EMERGENCY LIGHTS - CHECK, PAGEBLOCK 33-53-00/601).

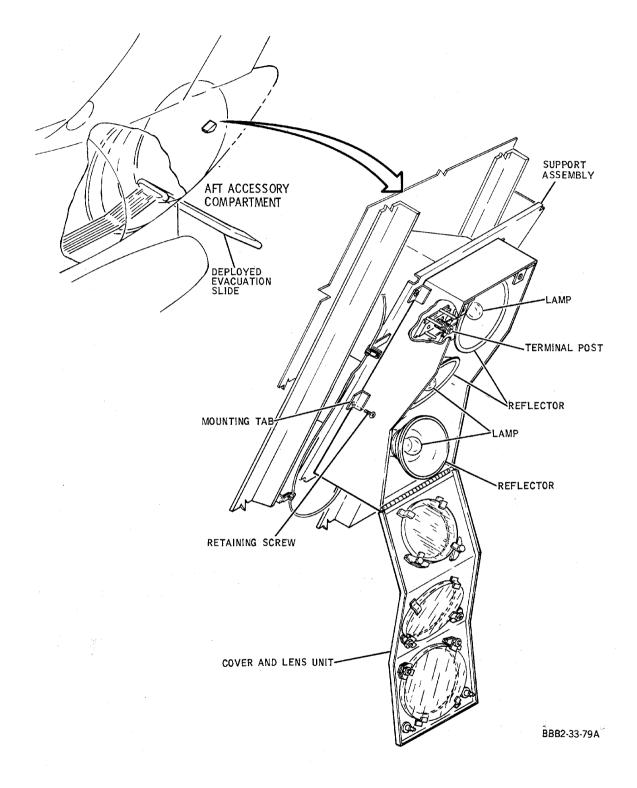
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MD-80 AIRCRAFT MAINTENANCE MANUAL



Aft Evacuation Slide Emergency Light -- Removal/Installation Figure 406/33-53-00-990-808

EFFECTIVITY

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# **EMERGENCY LIGHTS - REMOVAL/INSTALLATION**

## 1. General

A. This procedure contains MSG-3 task card data.

## TASK 33-53-00-902-801

## 2. Restore the Emergency Light Battery Packs

NOTE: This procedure is a scheduled maintenance task.

### A. References

Reference	Title
33-53-00 P/B 401	EMERGENCY LIGHTS - REMOVAL/INSTALLATION
33-53-00 P/B 601	EMERGENCY LIGHTS - CHECK

## B. Restore the Emergency Light Battery Packs

#### SUBTASK 33-53-00-020-001

- (1) Do a restoration of the following emergency light battery packs:
  - (a) Remove the emergency exit battery packs. (EMERGENCY LIGHTS REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)
  - (b) Remove the cabin fuselage battery packs. (EMERGENCY LIGHTS REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)
  - (c) Remove overwing emergency battery packs. (EMERGENCY LIGHTS REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)

#### SUBTASK 33-53-00-510-001

(2) Send the emergency battery packs to the shop for restoration.

### SUBTASK 33-53-00-420-001

- (3) Install the following serviceable emergency battery packs:
  - (a) Emergency exit battery packs. (EMERGENCY LIGHTS REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)
  - (b) Cabin fuselage battery packs. (EMERGENCY LIGHTS REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)
  - (c) Overwing emergency battery packs. (EMERGENCY LIGHTS -REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)

#### SUBTASK 33-53-00-710-002

(4) Do an operational check of the of the emergency lights battery packs. (EMERGENCY LIGHTS - CHECK, PAGEBLOCK 33-53-00/601)

### C. Job Close-up

### SUBTASK 33-53-00-942-001

(1) Remove all the tools and equipment from the work area. Make sure the area is clean.

— END OF TASK ———

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WJE ALL	



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# **EMERGENCY LIGHTS - ADJUSTMENT/TEST**

# 1. General

A. The emergency lighting systems include three dissimilar types of emergency battery packs: emergency exit, cabin fuselage, and overwing emergency evacuation. Basic circuits for each unit include 28 vdc, arm, and off. The entire system is wired in parallel, failure of any one unit will not effect the operation of remaining units.

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

B. System operation is controlled by the positioning of the emergency lights switch located on the overhead switch panel or the cabin fuselage attendants panel (a guarded switch is normally safety wired in off position).

## WJE ALL

C. EMERGENCY LIGHTS ARM & CHARGE circuit breaker located on emergency dc bus section of overhead circuit breaker panel and EMERGENCY LIGHTS CHARGING circuit breaker located on dc transfer bus section of lower EPC circuit breaker panel when energized provide 28 vdc control voltages. Each battery pack contains internal solid-state logic circuits to regulate steady trickle charge automatically and set up response to arm or off condition.

# WJE 405-411, 415-427, 429, 861-866, 868, 869, 871, 872, 880, 881, 883, 884, 886, 887, 891

D. Procedures are given for the emergency lights luminosity test.

# WJE 401-404, 412, 414, 873-879, 892, 893

E. Procedures are given for the emergency lights luminosity test. Luminosity testing is to confirm that the cabin overhead emergency lighting levels meet those required by the FAA. For the test to be effective, the emergency floor lighting system is not to be included. All emergency aisle floor lights, exit identifiers, and passageway lights are to be concealed (covered over by a light blocking material) or deactivated so as not to interfere with the luminosity readings.

### WJE ALL

F. Procedures are given for testing the lighted emergency exit sign system for proper function and operation.

### 2. Equipment and Materials

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

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

Name and Number	Manufacturer
DC milliammeter 0 to 500(±1.0) ma	
Multimeter 2000A	Dana
Ammeter 0 to 10(±0.5) amps	
Standard lamp load (Six No. 1315 lamps connected in parallel, with a pair of 18 gauge wires, 18 inches (457 mm) long attached)	
Emergency lights adaptor assembly (Figure 501)	
Lamp 50 watt 4593 (1.8A Nominal)	General Electric

Table 501

WJE ALL

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# Table 501 (Continued)

Name and Number	Manufacturer
Photometer/Radio-meter J-16	Tektronix
Illuminance probe J-6511	Tektronix
Light Intensity Test Adapter 5953642	Ref. Tool and Equipment List, 33-50-1
Masking Tape	
Stop watch	

# 3. De-energize Emergency Light Circuit

<u>NOTE</u>: The following procedure should be used when necessary to remove a lamp or battery pack from emergency light circuit.

- A. De-energize Light Circuit
  - (1) Place emergency lights switch located on overhead switch panel in off position. Check that attendants emergency lights switch located on attendant's panel is in guarded OFF position.
    - <u>NOTE</u>: If the switch is not positioned to OFF before opening the circuit breakers, emergency lights will come on.
  - **WARNING:** TAG AND USE SAFETY CLIPS TO SAFETY THE CIRCUIT BREAKERS. IF THE CIRCUIT BREAKERS ARE NOT OPENED, TAGGED, AND SAFETIED, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.
  - (2) Open these circuit breakers and install safety tags:

## LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

# **OVERHEAD EMERGENCY DC BUS**

Row	<u>Col</u>	<u>Number</u>	Name
WJE 401- 891-893	-409, 4	11, 412, 414-4	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE
<b>WJE 410</b> A	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

### WJE ALL

- (3) Remove and replace emergency light or battery pack as necessary.
- (4) Remove the safety tags and close these circuit breakers:

LOWER EPC, DC TRANSFER BUS Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

# OVERHEAD EMERGENCY DC BUS

Row Col Number Name

WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893 A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

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

(Continued)

## **OVERHEAD EMERGENCY DC BUS**

<u>Row Col Number Name</u>

WJE 410

A 15 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

### WJE ALL

### 4. Adjustment/Test Emergency Lights

A. System Integrity Test - Battery Pack Installed

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

<u>NOTE</u>: Conduct this portion of test using emergency lights switch located on overhead switch panel. Maintain attendant's emergency lights switch in off guarded and safetied position.

#### WJE ALL

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

 OVERHEAD EMERGENCY DC BUS

 Row
 Col
 Number
 Name

 WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
 A
 14
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

 MJE 410
 A
 15
 B1-41
 EMERGENCY LIGHTS ARM AND CHARGE

### WJE ALL

- **CAUTION:** EMERGENCY LIGHTS MUST NOT REMAIN ON LONGER THAN MINIMUM PERIOD ACTUALLY REQUIRED. NEVER EXCEED 1-MINUTE PERIOD FOR TEST. FOR EACH MINUTE ON, BATTERIES MUST BE ON CHARGE APPROXIMATELY 1 HOUR AND 30 MINUTES TO RECOVER.
- (2) Place EMERGENCY LIGHTS switch on overhead switch panel in ON position. Emergency lights should come on.
- (3) Observe that overwing emergency evacuation lights both left and right are illuminated. If illumination is unsatisfactory, associated battery pack located in aft cargo compartment should be removed and tested according to procedure in Paragraph 4.D..
- (4) At any convenient emergency light between stations 140 and 188 perform following steps:
  - (a) Remove lamp from emergency light fixture.
  - (b) Install lamp in Emergency Lights Adaptor. (Figure 501)
  - (c) Connect multimeter to Emergency Lights Adaptor.
  - (d) Install Emergency Lights Adaptor connector into empty emergency light fixture socket.
- (5) Multimeter should indicate minimum of 1.8-volts.
- (6) Perform Paragraph 4.A.(4) and Paragraph 4.A.(5) at any convenient emergency light between each of following locations:

1	able 502
Y261 to Y374	Y866 to Y980

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### Table 502 (Continued)

Y412 to Y526	Y1017 to Y1136
Y564 to Y677	Y1173 to Y1249
Y715 to Y828	Portable Pack

(7) Place EMERGENCY LIGHTS switch on overhead switch panel in OFF position.

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

(8) Open the following circuit breakers

OVERHE	OVERHEAD EMERGENCY DC BUS				
Row	Col	<u>Number</u>	Name		
WJE 401- 891-893	409, 4 <sup>-</sup>	11, 412, 414-4	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,		
A WJE 410	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE		
A A	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE		

# WJE ALL

- B. Test Battery Charge Battery Pack Cabin Fuselage Units
  - <u>NOTE</u>: This portion of test does not apply to portable battery pack (Paragraph 4.C.) or to overwing emergency evacuation light battery packs (Paragraph 4.D.).
  - (1) Connect 28-volt dc power source and milliammeter in series between positive terminal 4 and negative terminal 3.
  - (2) Normal milliammeter indication should be between 250 and 280 milliamperes.
  - (3) Remove power source and meter. Connect power source and milliammeter in series between positive terminal 7 and negative terminal 3.
  - (4) Charging current should be between 160 and 190 milliamperes.
  - (5) Charge battery continuously for 20 (±1) hours through positive terminal 4 (Paragraph 4.B.(2) above ) or for 30 (±1) hours through positive terminal 7 (Paragraph 4.B.(4) above) to negative terminal 3.
  - (6) Install standard lamp load. (Paragraph 2.)
  - (7) Discharge battery for period of 20 minutes (maximum).
  - (8) Measure voltage between positive terminal 5 and negative terminal 3, initial readings should be 2.2 volts or greater. Meter indication should be 1.9 volts or more at end of 20 minutes.

**CAUTION:** IF VOLTAGE DECREASES BELOW 1.9 VOLTS AT ANY TIME, DISCONTINUE TEST AND RECHARGE BATTERY AS OUTLINED IN PARAGRAPH 4.B.(3) THROUGH PARAGRAPH 4.B.(5).

- (9) Remove standard lamp load.
- (10) Charge battery as outlined in Paragraph 4.B.(3) through Paragraph 4.B.(5).
- (11) Remove milliammeter.

<u>NOTE</u>: Before installation, batteries should be charged at a constant rate of 300 milliamperes for 20 to 24 hours.

C. Test Battery Charge - Battery Pack (Portable)

WJE ALL

33-53-00

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- (1) Place battery pack ON-OFF switch in OFF position.
- (2) Connect 28-volt dc power source and milliammeter between positive pin A and negative pin D.
- (3) Milliammeter should indicate between 170 and 200 milliamperes.
- (4) Remove power source and milliammeter. Connect power source and milliammeter in series between positive pin B and negative pin D.
- (5) The 28-volt lamp should come on and 2.38-volt lamp should remain off.
- (6) Charging current should be between 240 and 300 milliamperes.
- (7) Charge battery for 30 hours continuously. Do not exceed 35 hours charging time.
- (8) Remove power source and milliammeter.
- (9) The 2.38-volt lamp should come on and 28-volt lamp should go off.
- (10) Place ON-OFF switch to ON position and then to OFF position. The 2.38-volt lamp should go off.
- (11) Place ON-OFF switch to ON position, 2.38-volt lamp should come on.
- (12) Discharge battery through 2.38-volt lamp for four hours; lamp should remain on.

**CAUTION:** IF LAMP GOES OFF ANY TIME, DISCONTINUE TEST AND RECHARGE BATTERY AS OUTLINED IN PARAGRAPH 4.C.(4)THROUGH PARAGRAPH 4.C.(7).

- (13) Charge battery as outlined in Paragraph 4.C.(4) through Paragraph 4.C.(7).
- (14) Remove power source and milliammeter.
- (15) The 2.38-volt lamp should come on and 28-volt lamp should go off.
- (16) Connect power source and milliammeter between positive pin C and negative pin D. The 2.38-volt lamp should go off.
- (17) Remove power source. The 2.38-volt lamp should remain off.
- (18) Place ON-OFF switch in OFF position.
- D. Test Battery Charge Overwing Emergency Evacuation Battery Pack (Packs Removed from Aircraft)
  - (1) Check battery packs for visible damage and clean battery terminals and contacts prior to charging. White deposit that may be present on battery terminals or contacts is not abnormal and may be removed with cloth dampened with warm water.
  - (2) Connect 28-volt dc power source and milliammeter in series between positive terminal D and negative terminal C.
  - (3) Normal milliammeter indication should be 700 (±150) milliamperes.
  - (4) Remove power source and meter. Connect power source and milliammeter between positive terminal G and negative terminal C.
  - (5) Charging current should be between 90 and 130 milliamperes.
  - (6) Charge battery continuously for 16 hours.
  - (7) Install 50 watt lamp, between terminals E and C. (Paragraph 2.)
  - (8) Connect ammeter in series between positive terminal E and negative terminal C. Ammeter should indicate zero. Connect voltmeter between terminals E and C.
  - (9) Remove power source. Lamps should illuminate and ammeter indication should indicate 1.8 ampere discharge current. After 16 minutes of discharge voltage measured across positive terminal E and negative terminal C should be not less than 28 volts, and ammeter should read not less than 1.7 amperes.
  - (10) Continue discharge until automatic cutoff occurs at 24 (±1) volt.

WJE ALL	

33-53-00

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- (11) Remove potentiometer and milliammeter.
- (12) Charge battery as outlined in Paragraph 4.D.(4) and Paragraph 4.D.(6). Voltage should read 32.5 (±1.5) volts at end of charge.
- E. Test Overwing Emergency Evacuation Battery Operation
  - (1) Make certain emergency floodlight battery packs in aft cargo compartment are installed and properly connected.
  - (2) Make sure that these circuit breakers are closed:

OVERH	OVERHEAD EMERGENCY DC BUS				
<u>Row</u>	<u>Col</u>	<u>Number</u>	Name		
WJE 401 891-893	-409, 4	11, 412, 414	-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,		
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE		
WJE 410					
А	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE		

#### WJE ALL

(3) Place EMERGENCY LIGHTS switch located on overhead switch panel in ARM position. Place ATTENDANTS EMERGENCY LIGHTS switch located on attendant's panel in ARM position momentarily and release to ON position. Check that both left and right overwing emergency evacuation floodlights come on.

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

- **CAUTION:** DO NOT LEAVE EMERGENCY LIGHTS SWITCH, ON OVERHEAD SWITCH PANEL, IN ARM OR ON POSITION WHEN RESTORING ATTENDANT PANEL EMERGENCY LIGHT SWITCH TO OFF POSITION. BATTERIES WILL CONTINUE TO DISCHARGE IF PROPER SEQUENCE IS NOT FOLLOWED.
- (4) Place ATTENDANTS EMERGENCY LIGHTS switch in OFF position. Both left and right overwing emergency evacuation flood-lights should go off. Safety switch in off position with lockwire.

### WJE ALL

- **CAUTION:** EMERGENCY LIGHTS SWITCHES MUST BE IN OFF POSITION BEFORE REMOVING AIRCRAFT POWER TO PREVENT BATTERY PACKS FROM ENERGIZING EMERGENCY LIGHTS BY INTERNAL POWER.
- (5) De-energize buses.

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WJE /	<b>ALL</b>			

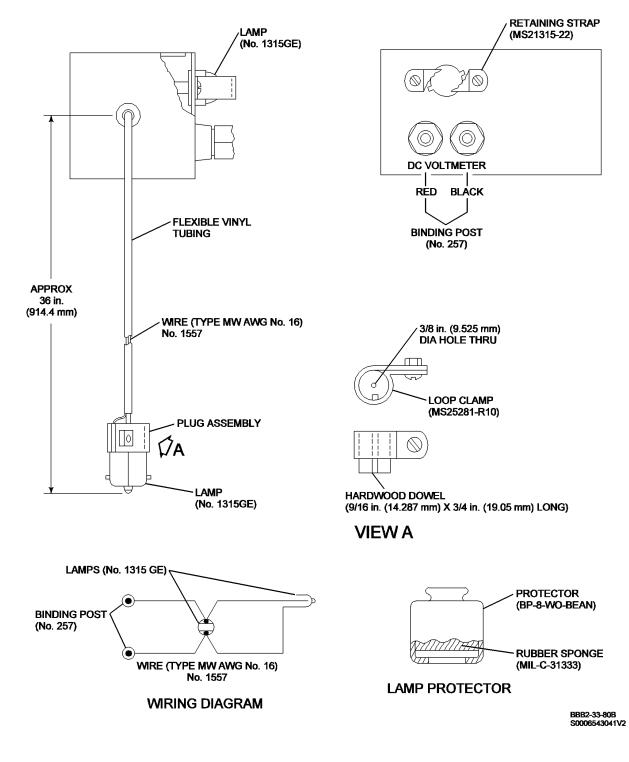
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MD-80 AIRCRAFT MAINTENANCE MANUAL



#### Emergency Lights Adaptor Assembly - Fabrication Figure 501/33-53-00-990-813

WJE ALL

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### 5. Emergency Lights Luminosity Test

A. Cabin Interior Emergency Lights Luminosity Test

### WJE 401-404, 412, 414, 873-879, 892, 893

- <u>NOTE</u>: For the luminosity test to be effective, the emergency floor lighting system is not to be included. Light sources lower than four feet (1.219 m) above the floor are to be concealed by a light blocking material or deactivated so as not to interfere with luminosity readings.
- (1) Conceal or deactivate floor proximity emergency escape path lighting system by performing one of following:
  - (a) Cover all floor lights, exit identifiers, and passageway lights by using light blocking material; or
  - (b) Deactivate all floor lights, exit identifiers, and passageway lights by removing cabin emergency lights battery packs associated with the floor proximity emergency escape path lighting system. (EMERGENCY LIGHTS - REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)

#### WJE ALL

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

OVERHEAD EMERGENCY DC BUS				
Row	<u>Col</u>	<u>Number</u>	Name	
WJE 401 891-893	-409, 4	11, 412, 414	-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,	
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE	
WJE 410	)			
А	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE	

### WJE ALL

- (3) Place EMERGENCY LIGHTS switch on overhead panel to ON position. Check that all cabin emergency lights are operating with equal intensity.
- (4) Place EMERGENCY LIGHTS switch in OFF position. Clean lenses and reflectors of cabin emergency lights if necessary.
- (5) Apply masking tape to floor at fuselage stations. (Paragraph 5.C.(10))
- (6) Close all window curtains in cabin.
- (7) Close entrance door, service doors, and cockpit door. Tape cockpit door sight glass with masking tape.
- (8) Check ambient lighting throughout length of cabin. Photometer/radiometer readings should not register on lower settings.

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

<u>NOTE</u>: Conduct the following portion of this test using emergency lights switch located on overhead switch panel. Maintain flight attendant's emergency lights switch in OFF guarded and safetied position.

### WJE ALL

- (9) Place EMERGENCY LIGHTS switch in ON position.
- (10) Start the stop watch to record total time spent on test.

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<b>NJE</b>	ALL				



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(11) Remove cover from luminance probe and record illuminance at nine positions selected in step 4. Record readings on Paragraph 5.C.(10).

NOTE: Readings should be taken from equivalent height of passenger seat armrest.

(12) Tail cone exit passage way reading must be minimum of 0.074 foot-candles.

NOTE: The average of the nine recorded illuminance readings must be a minimum of 0.074 foot-candles.

- (13) Place EMERGENCY LIGHTS switch in OFF position.
- (14) Stop the stop watch but do not reset.
- B. Tail Cone Evacuation Lights Luminosity Test
  - (1) Clean lenses and reflectors if necessary.
  - (2) Place EMERGENCY LIGHTS switch in ON position.
  - (3) Start the stop watch.
  - (4) Attach light intensity test adapter to lights and take readings with luminance probe attached to end of adapter. Record all three readings on Paragraph 5.C.(10).

<u>NOTE</u>: The average of the three recorded illuminance readings must be a minimum of 0.076 foot-candles.

- (5) Place EMERGENCY LIGHTS switch in OFF position.
- (6) Stop the stop watch but do not reset.
- C. Overwing Evacuation Lights Luminosity Test
  - (1) Clean lenses of overwing evacuation lights if necessary.
  - (2) Place EMERGENCY LIGHTS switch to ON position and check that both left and right overwing evacuation lights are operating.
  - (3) Start the stop watch.
  - (4) Attach light intensity test adapter to lights and take readings with luminance adapter attached to end of adapter. Record both readings on Paragraph 5.C.(10).
    - <u>NOTE</u>: The recorded overwing evacuation lights illuminance readings must be a minimum of 1.78 foot-candles for each side.
  - (5) Place EMERGENCY LIGHTS switch to OFF position.

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

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

OVERH	OVERHEAD EMERGENCY DC BUS				
<u>Row</u>	<u>Col</u>	<u>Number</u>	Name		
WJE 401 891-893	-409, 4	11, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,		
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE		
WJE 410	)				
А	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE		

WJE ALL

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#### WJE ALL

- (7) Stop the stop watch and record total time as recorded on watch on Figure 502.
- (8) Change all emergency lights battery packs or place all battery packs on charge as required. <u>NOTE</u>: For each minute emergency lights are on, battery packs must be on charge approximately 1 hour and 30 minutes for recharge.

### WJE 401-404, 412, 414, 873-879, 892, 893

(9) Remove light blocking material from all floor lights, exit identifiers, and passageway lights or reactivate all floor lights, exit identifiers and passageway lights by installing battery packs associated with floor proximity emergency escape path lighting system. (EMERGENCY LIGHTS - REMOVAL/INSTALLATION, PAGEBLOCK 33-53-00/401)

#### WJE ALL

(10) Illumination Record.

### WJE 401-412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 891-893

AIRPLANE REG	ISTRATION NO.	TOTAL TIME	DATE	
BATTERY IDENTIFICATION	LOCATION (STATION NUMBER)	ILLUMINATION (FOOT- CANDLES)	MINIMUM ALLOWABLE	
B5-23	213 First Light forward drop ceiling			
B5-100	358 * 2			
B5-101	471 * 4			
B5-101	585 * 6			
B5-102	698 * 8			
B5-104	812 * 10			
B5-104	925 * 12			
B5-106	1039 * 14			
B5-107	1152 * 16			
B5-27	1265 * 18			
Cabin Average (Total 10 locations	3)		0.074 foot candles	
B5-28	Tail Cone Exit Passsage-way (Center Light)		0.074 foot candles	
* Ceiling joint No. from header.				
Illumination Record				

Table 503

WJE ALL

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#### WJE 886, 887

Table 504

AIRPLANE R	EGISTRATION NO.	TOTAL TIME	DATE
BATTERY IDENTIFICATION	LOCATION (STATION NUMBER)	ILLUMINATION (FOOT- CANDLES)	MINIMUM
B5-23	211 First Light forward drop ceiling		
B5-100	389 * 2		
B5-102	579 * 4		
B5-104	693 * 6		
B5-103	772 * 8		
B5-105	813 * 10		
B5-107	889 * 12		
B5-27	1113 * 14		
Cabin Average (Total 8 location	ns)		0.074 foot candles
B5-28 Tail Cone Exit Passsage-way (Center Light)			0.074 foot candles
* Ceiling joint No. from header.			·
Illumination Record			

### WJE ALL

#### Table 505

BATTERY IDENTIFICATION	LOCATION (STATION NUMBER)	ILLUMINATION (FOOT- CANDLES)	MINIMUM ALLOWABLE
	Tail Cone Slide		
B5-27	Lower		0.076 foot candles
B5-28	Mid		0.076 foot candles
B5-28	Upper		0.076 foot candles
B5-49	Overwing Lights		
	Left		1.78 foot candles
	Right		1.78 foot candles
Meter Reader		Recorder	
Illumination Record			

# 6. Adjustment/Test - Floor Lighting FWD/AFT Diode

- A. Test Floor Lighting FWD/AFT Diode
  - (1) Place EMER LTS switch, located on Overhead Panel, in ON position.
  - (2) Check that all floor lighting comes on.
  - (3) Place EMER LTS switch in OFF position.

WJE ALL

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

(4) Open this circuit breaker and install safety tag:

## LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (5) Open ceiling panel in forward cabin at Station 338R.
- (6) Disconnect cannon plug from battery pack.
- (7) Remove the safety tag and close this circuit breaker:

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (8) Place EMER LTS switch, located on Overhead Panel in ON position.
- (9) Check that 3/4 of emergency floor lights come on.
- (10) Place EMER LTS switch in OFF position.

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

(11) Open this circuit breaker and install safety tag:

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (12) Connect cannon plug to battery pack at Station 338. Close ceiling panel.
- (13) Open aft cabin ceiling panel at station 1290R.
- (14) Disconnect cannon plug from battery pack.
- (15) Remove the safety tag and close this circuit breaker:

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

37 B1-387 EMERGENCY LIGHTS CHARGING

(16) Place EMER LTS switch in ON position.

7

- (17) Check that 3/4 of the emergency floor lights come on.
- (18) Place EMER LTS switch in OFF position.

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

(19) Open this circuit breaker and install safety tag:

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

(20) Connect cannon plug to battery pack in aft cabin. Close ceiling panel.

WJE ALL

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

LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (22) Place EMER LTS switch in ON position. Check that all floor lights operate normally.
- (23) Place EMER LTS switch in OFF position.

EFFECTIVITY -

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# **EMERGENCY LIGHTS - ADJUSTMENT/TEST**

# 1. General

A. This procedure contains MSG-3 task card data.

# TASK 33-53-00-710-801

# 2. Operational Check of the Emergency Lighting System Operated From the Flight Deck and Flight Attendant Position

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
24-00-00 P/B 001	GENERAL - DESCRIPTION AND OPERATION
24-40-00 P/B 001	EXTERNAL POWER - DESCRIPTION AND OPERATION

# B. Prepare for the Operational Check of the Emergency Lighting System Operated From the Flight Deck and Flight Attendant Position

SUBTASK 33-53-00-861-001

- (1) Energize the aircraft electrical power system. (GENERAL DESCRIPTION AND OPERATION, PAGEBLOCK 24-00-00/001)
  - <u>NOTE</u>: To facilitate the operational check of the emergency lights, all other lights in the airplane should be turned off.
  - <u>NOTE</u>: Turn the emergency lights off as soon as possible to prevent excessive discharge of the emergency batteries.
- (2) It is recommended to perform this check with a team of three technicians, distributed as follows:
  - (a) Cockpit and forward cabin.
  - (b) Mid and aft cabin.
  - (c) Outside of airplane.

# C. Operational Check of the Emergency Lighting System Operated From the Flight Deck and Flight Attendant Position

SUBTASK 33-53-00-710-001

(1) Do an operational check of the emergency lighting system operated from the flight deck and flight attendant position.

<u>NOTE</u>: The ATTENDANTS EMERGENCY LIGHTS switch, located on the attendant's panel, must be in the OFF position while performing the following steps (2) through (9).

- **CAUTION:** EMERGENCY LIGHTS MUST NOT REMAIN ON LONGER THAN MINIMUM PERIOD ACTUALLY REQUIRED. NEVER EXCEED A 1-MINUTE PERIOD PER TEST. FOR EACH MINUTE ON, BATTERIES MUST BE ON CHARGE FROM DC TRANSFER BUS FOR APPROXIMATELY 1 HOUR AND 30 MINUTES TO RECOVER.
- (2) Place EMERGENCY LIGHTS switch, on overhead switch panel, in ON position. EMERGENCY LIGHTS NOT ARMED caution light on annunciator panel and emergency lights should come on.
  - (a) Verify the emergency lights that follow are illuminated:
    - 1) Flight compartment emergency flood lights.
    - 2) Cabin floor and emergency evacuation lights.

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- 3) Tail emergency and evacuation slide lights.
- 4) Overwing, fwd and aft outside emergency door lights (both sides).
- (3) Place EMERGENCY LIGHTS switch in OFF position. Emergency lights should go off and annunciator light should remain on.
- (4) Place PULL TO DIM switch in DIM position. Annunciator light should dim.
- (5) Place PULL TO DIM in BRIGHT position. Annunciator light should brighten.
- (6) Place EMERGENCY LIGHTS switch in ARMED position. Annunciator light should go off and neon lamp in portable emergency light should come on.

<u>NOTE</u>: Neon lamp is located behind lens and adjacent to main lamp. It may be necessary to cup hands around lens to observe light.

Open these circuit breakers and install safety tags:

```
        OVERHEAD EMERGENCY DC BUS

        Row
        Col
        Number
        Name

        WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
        A
        14
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE

        WJE 410
        A
        15
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE
```

WJE ALL

(7) Emergency lights should come on.

Remove the safety tags and close these circuit breakers:

```
        OVERHEAD EMERGENCY DC BUS

        Row
        Col
        Number
        Name

        WJE 401-409, 411, 412, 414-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887, 891-893
        A
        14
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE

        WJE 410
        A
        15
        B1-41
        EMERGENCY LIGHTS ARM AND CHARGE
```

### WJE ALL

- (8) Emergency lights should go off.
- (9) Place EMERGENCY LIGHTS switch in OFF position. Emergency lights should remain off.

<u>NOTE</u>: The EMERGENCY LIGHTS switch, located on the overhead switch panel, must be in the OFF position while performing the following steps (10) through (12).

- (10) Place ATTENDANTS EMERGENCY LIGHTS switch, located on attendant's panel, in ON position. Emergency lights should not come on.
- **CAUTION:** EMERGENCY LIGHTS MUST NOT STAY ON MORE THAN THE MINIMUM PERIOD NECESSARY TO DO THE TEST. DO NOT KEEP THE LIGHTS ON FOR MORE THAN ONE MINUTE. FOR EACH MINUTE THE LIGHTS ARE ON, YOU MUST CHARGE THE EMERGENCY BATTERIES FOR 1 HOUR AND 30 MINUTES FROM THE AIRCRAFT'S POWER SUPPLY.
- (11) Place ATTENDANTS EMERGENCY LIGHTS switch in ARM position momentarily and release to ON position. Emergency lights should come on.

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WJE ALL			



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- **CAUTION:** DO NOT LEAVE EMERGENCY LIGHTS SWITCH, ON OVERHEAD SWITCH PANEL, IN ARM OR ON POSITION WHEN RESTORING ATTENDANT PANEL EMERGENCY LIGHT SWITCH TO OFF POSITION. BATTERIES WILL CONTINUE TO DISCHARGE IF PROPER SEQUENCE IS NOT FOLLOWED.
- (12) Place ATTENDANTS EMERGENCY LIGHTS switch in OFF position. Emergency lights should go off.

#### D. Job Close-up

SUBTASK 33-53-00-430-001

- **CAUTION:** EMERGENCY LIGHTS SWITCHES MUST BE IN OFF POSITION BEFORE REMOVING AIRCRAFT POWER TO PREVENT BATTERY PACKS FROM ENERGIZING EMERGENCY LIGHTS BY INTERNAL POWER.
- **CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHT SWITCHES ARE IN OFF POSITION.
- (1) Safety the attendant's emergency lights switch with break away lockwire.

SUBTASK 33-53-00-862-001

(2) De-energize the aircraft electrical power system. (EXTERNAL POWER - DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)

— END OF TASK —

WJE ALL

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# **EMERGENCY LIGHTS - CHECK**

# 1. General

A. For ease of identity when performing an operational check on emergency lights, all other lights in airplane should be turned off. Turn emergency lights switches off as soon as practicable to prevent excessive discharge of emergency batteries.

# 2. Check Emergency Lighting System

- A. Emergency Lighting System Operational Check
  - (1) Energize buses.
  - (2) Place the ATTENDANTS EMERGENCY LIGHTS switch, located on attendant's panel, in the OFF position.
  - **CAUTION:** EMERGENCY LIGHTS MUST NOT REMAIN ON LONGER THAN MINIMUM PERIOD ACTUALLY REQUIRED. NEVER EXCEED 1-MINUTE PERIOD PER TEST. FOR EACH MINUTE ON, BATTERIES MUST BE ON CHARGE FROM DC TRANSFER BUS FOR APPROXIMATELY 1 HOUR AND 30 MINUTES TO RECOVER.
  - (3) Place EMERGENCY LIGHTS switch, on overhead switch panel, in ON position. EMERGENCY LIGHTS NOT ARMED caution light on annunciator panel and emergency lights should come on. (EMERGENCY LIGHTS - DESCRIPTION AND OPERATION, PAGEBLOCK 33-53-00/001, Figure 1 for approximate location of lights.)
  - (4) Place EMERGENCY LIGHTS switch in OFF position. Emergency lights should go off and annunciator light should remain on.
  - (5) Place PULL TO DIM switch in DIM position. Annunciator light should dim.
  - (6) Place PULL TO DIM switch in BRIGHT position. Annunciator light should brighten.
  - (7) Place EMERGENCY LIGHTS switch in ARMED position. Annunciator light should go off and neon lamp in portable emergency light should come on.
    - <u>NOTE</u>: Neon lamp is located behind lens and adjacent to main lamp. It may be necessary to cup hands around lens to observe light.
  - (8) Open following circuit breaker;s emergency lights should come on:

OVERH <u>Row</u>	EAD I <u>Col</u>	EMERGENC <u>Number</u>	Y DC BUS <u>Name</u>
WJE 401 891-893	I-409, 4	411, 412, 414	-427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE
WJE 410	)		
Α	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

### WJE ALL

(9) Close following circuit breakers; emergency lights should go off:

OVERHE	EAD E		Y DC BUS
Row	<u>Col</u>	<u>Number</u>	Name
WJE 401- 891-893	409, 4	11, 412, 414-	427, 429, 861-866, 868, 869, 871-881, 883, 884, 886, 887,
	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE
<b>WJE 410</b> A	15	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

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WJE ALL

- (10) Place EMERGENCY LIGHTS switch in OFF position. Emergency lights should remain off.
  - NOTE: The emergency lights may illuminate for 1 to 2 seconds during switch transition.
  - <u>NOTE</u>: The EMERGENCY LIGHTS switch, located on overhead switch panel, stays in OFF position while performing the steps that follow.
- (11) Place ATTENDANTS EMERGENCY LIGHTS switch, located on attendant's panel, in ON position. Emergency lights should not come on.
- **CAUTION:** EMERGENCY LIGHTS MUST NOT REMAIN ON LONGER THAN MINIMUM PERIOD ACTUALLY REQUIRED. NEVER EXCEED 1-MINUTE PERIOD PER TEST. FOR EACH MINUTE ON, BATTERIES MUST BE ON CHARGE FROM DC TRANSFER BUS FOR APPROXIMATELY 1 HOUR AND 30 MINUTES TO RECOVER.
- (12) Place ATTENDANTS EMERGENCY LIGHTS switch in ARM position momentarily and release switch to ON position. Emergency lights should come on.
- **CAUTION:** DO NOT LEAVE EMERGENCY LIGHTS SWITCH, ON OVERHEAD SWITCH PANEL, IN ARM OR ON POSITION WHEN RESTORING ATTENDANT PANEL EMERGENCY LIGHT SWITCH TO OFF POSITION. BATTERIES WILL CONTINUE TO DISCHARGE IF PROPER SEQUENCE IS NOT FOLLOWED.
- (13) Check that EMERGENCY LIGHT switch on overhead switch panel is in OFF position.

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

(14) Place ATTENDANTS EMERGENCY LIGHTS switch in OFF position; emergency lights should go off. Safety switch with lock-wire.

#### WJE ALL

- **CAUTION:** EMERGENCY LIGHTS SWITCHES MUST BE IN OFF POSITION BEFORE REMOVING AIRPLANE POWER TO PREVENT BATTERY PACKS FROM ENERGIZING EMERGENCY LIGHTS BY INTERNAL POWER.
- (15) Deenergize buses.

WJE ALL

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### EMERGENCY AISLE FLOOR LIGHTS AND EXIT IDENTIFIERS- DESCRIPTION AND OPERATION

# 1. General

- A. The emergency aisle floor lights and exit identifiers provide an emergency escape path lighting system for evacuation guidance to passengers, when all sources of illumination above four feet (1.219 m) are obscured. The aisle lights and identifiers operate with the passenger compartment emergency lighting system, and are powered by rechargeable low voltage type (2.5 volts DC), battery packs. Each battery pack is transistorized, and contains an etched circuit and rechargeable nickel-cadmium batteries. The batteries must be checked periodically and replaced as necessary.
- B. Emergency aisle lights consist of incandescent lights, spaced and mounted on a continuous floor-mounted track adjacent to the aisle running forward and aft the full length of the passenger cabin. The floor-mounted track is composed of two parts with the upper half snapping into the lower half. The lower half of the track contains the lamps and fixtures. The upper half contains the track and lens covers. The solid red lens covers indicate an exit. Additional emergency passageway floor lights are installed on the walkway in the aft accessory compartment to provide an escape path through the tailcone exit.
- C. Emergency exit identifiers consist of incandescent lamps inside the exit signs installed on the sidewall, closely above the floor. The identifiers are adjacent to all passenger exit locations to identify each exit, from the emergency escape path. Identifiers are illuminated by lamps of the same type used in the floor track. The lens is designed to illuminate the threshold and surrounding area.
- D. The emergency escape path lighting system is integrated with the passenger compartment emergency lighting system. When the aircraft emergency lighting system is activated, both systems come on simultaneously. Refer to EMERGENCY LIGHTS - DESCRIPTION AND OPERATION, PAGEBLOCK 33-53-00/001 for operating conditions of the emergency lights circuit.

## 2. Care and Maintenance of Emergency Light System Batteries

- A. Optimum performance from the size "D" nickel cadmium (Ni-Cd) cells, in the cabin emergency lighting system, is dependent upon strict adherence to the following practices and methods:
  - (1) New batteries must always be installed in sets and should be at the same initial state-of-charge. It is also desirable that these be of the same approximate age to avoid likelihood of an early loss of capacity and voltage by some of the cells.
  - (2) It is mandatory that cells used in a given battery pack be from the same manufacturer. It is also important that all cells, which are either being charged or discharged in a single string, be from the same manufacturer. Differences in the manufacturer's cell internal designs, operating impedance and performance characteristics do not permit equal charging, equal state of charge, or equal cell volt-ages if they are mixed in battery shop chargers or in the battery pack.
  - (3) When operated in the momentary TEST/ON position, operating time should be minimized in order to conserve battery state-of-charge. 1 1/2 hours (90 minutes) of charging time with emergency lights switch in "ARMED" condition or 1 hour (60 minutes) in "OFF" condition should be allowed for each minute of battery operating time while supplying power to emergency lamps. Batteries must be recharged in this manner or as specified in applicable sections of this manual prior to returning the aircraft to service.
  - (4) Ni-Cd batteries are inherently subject to a partial, time-dependent reduction of available capacity. A major contributor to reduction is the memory effect, which is due to repetitive identical cycles of operation which include partial-capacity discharges. Significant reductions of both terminal voltage and available capacity have been identified due to this phenomenon.
  - (5) The memory effect can be the cause of a failed pre-flight test or an observed premature reduction of illumination. This effect can be removed by complete discharge of each cell and recharging per following reconditioning instructions.

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



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**CAUTION:** DO NOT ATTEMPT TO DISCHARGE TWO OR MORE CELLS IN SERIES. PERMANENT DAMAGE CAN BE CAUSED BY POLARITY REVERSAL.

(a) Complete discharge of cell:

<u>NOTE</u>: Individually discharge each cell through a circuit load of 0.2 ohms until cell voltage reads less than 0.2 volts while under load.

(b) Recharge for capacity test or service:

Cells may be charged individually or in series. Charge at room temperature at 400 milliamperes maximum for 16 hours or at manufacturers recommended rate/time.

<u>NOTE</u>: Charge current should not exceed 400 milliamperes at any time. Charge voltage shall be 1.40 to 1.48 per cell while under charge.

## 3. Care and Maintenance of Emergency Aisle Floor Lights and Exit Identifiers.

- A. Items contributing to reduction of illumination from the emergency aisle floor lights are dust and debris. Items contributing to reduction of illumination from the exit identifiers are dust and accumulation of tar and nicotine from cigarette smoke.
  - (1) Lenses of the aisle lights and exit identifiers should be washed regularly with a mild detergent to maintain lighting efficiency of the fixture.

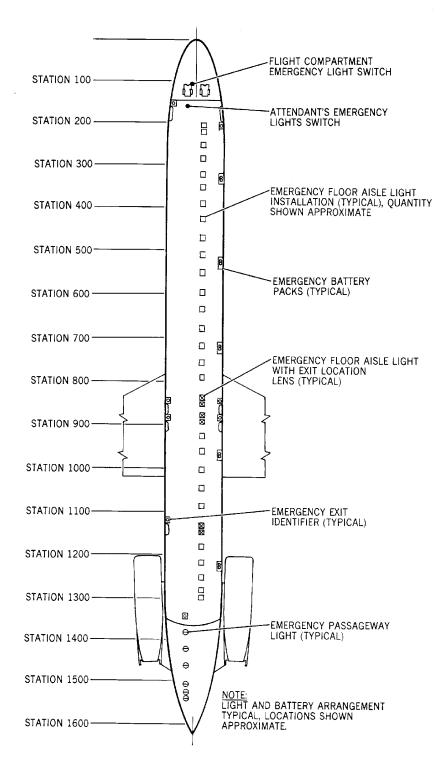
WJE 401-404, 412, 414, 873-879, 892, 893

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Emergency Aisle Floor Lights, Passageway Lights, Exit Identifiers, and Battery Packs Locations Figure 1/33-53-01-990-801

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### EMERGENCY AISLE FLOOR LIGHTS AND EXIT IDENTIFIERS - REMOVAL/INSTALLATION

# 1. General

A. This maintenance practice provides removal/installation procedures for the emergency aisle floor lights installed throughout the cabin floor aisle, the exit identifiers installed on the cabin sidewall adjacent to all passenger exits, the passageway lights installed on the ventral stairway shroud and aft accessory area, and the emergency lights battery packs located in the cabin.

**CAUTION:** DO NOT LEAVE EMERGENCY LIGHTS SWITCH, ON OVERHEAD SWITCH PANEL, IN ARM OR ON POSITION WHEN RESTORING ATTENDANT PANEL EMERGENCY LIGHT SWITCH TO OFF POSITION. BATTERIES WILL CONTINUE TO DISCHARGE IF PROPER SEQUENCE IS NOT FOLLOWED.

B. The emergency lights switch on the overhead switch panel and the emergency lights switch on forward attendant's panel, should be placed in the off position before opening the emergency lights arm and charge circuit breaker to prevent inadvertent operation of the emergency battery packs. For each minute of operation, the batteries must charge approximately 1 hour and 30 minutes to recover.

**CAUTION:** AVOID CONTACT BETWEEN TERMINAL SCREW AND POSITIVE CONTACT OF BATTERY HOLDER. DAMAGE TO CHARGING CIRCUITRY MIGHT RESULT.

C. Replace cabin emergency lights batteries as necessary. They are located inside of battery packs, two "D" size cells in series per pack. Removal of battery pack is not necessary for battery replacement. Access to battery packs is through access doors located inside overhead stowage compartments.

### 2. Removal/Installation Emergency Aisle Floor Lights and Exit Identifiers

A. Remove Emergency Aisle Floor Light

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

- **CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHT SWITCHES ARE IN OFF POSITION.
- (1) Open these circuit breakers and install safety tags:

# LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

### **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

- (2) Remove emergency aisle track cover adjacent to aisle light.
- (3) Carefully slide and remove lens cover from track fixture.
  - <u>NOTE</u>: Track and lens cover removal is aided by applying a combination of downward pressure on one edge of track and lens cover while applying upward pressure on the opposite edge.
- (4) Remove integral lamp module from lens cover and remove lamp from module.
- (5) Disconnect lamp module from wire harness receptacle.
- B. Install Emergency Aisle Floor Light

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For Instructional Use Only



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

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

### LOWER EPC, DC TRANSFER BUS

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>	
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Z 37 B1-387 EMERGENCY LIGHTS CHARGING

### **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

- (2) Connect lamp module to wire harness receptacle.
- (3) Install new lamp inside module and place integral module inside lens cover.
- (4) Position lens cover over floor track fixture.

CAUTION: AVOID PINCHING OF WIRES DURING MODULE INSTALLATIONS.

- (5) Apply even pressure on edges of lens cover until cover seats over floor track fixture. Slide lens cover into position.
- (6) Position track cover over floor track fixture and apply even pressure on edges until cover seats fully over its entire length.
- (7) Remove the safety tags and close these circuit breakers:

## LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

### **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

- A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE
- (8) Check operation of lights. (PAGEBLOCK 33-53-00/601)
- C. Remove Emergency Exit Identifier

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

# **CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHT SWITCHES ARE IN OFF POSITION.

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

### LOWER EPC, DC TRANSFER BUS

<u>Row Col Number N</u>	lame
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Z 37 B1-387 EMERGENCY LIGHTS CHARGING

### **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

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- (2) Remove emergency exit identifier lens cover by releasing upper and lower catch latches from lamp fixture.
- (3) Remove lamp.
- (4) Remove attaching screws from lamp fixture.
- (5) Remove fixture from sidewall to gain access to electrical wires.
- (6) Tag and disconnect electrical wires.
- D. Install Emergency Exit Identifier
  - (1) Make sure that these circuit breakers are open and have safety tags:

## LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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Z 37 B1-387 EMERGENCY LIGHTS CHARGING

## **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

- (2) Remove tags and connect electrical wires.
- (3) Position identifier lamp fixture to sidewall and install attaching screws.
- (4) Install new lamp.
- (5) Install lens cover by pressing upper and lower areas of cover to engage catch latches.
- (6) Remove the safety tags and close these circuit breakers:

# LOWER EPC, DC TRANSFER BUS

<u>Row Col Number Name</u>

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

# **OVERHEAD EMERGENCY DC BUS**

- <u>Row Col Number Name</u>
  - A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE
- (7) Check operation of lights. (PAGEBLOCK 33-53-00/601)

# 3. <u>Removal/Installation Emergency Passenger Light</u>

A. Remove Light

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

**CAUTION:** BEFORE OPENING CIRCUIT BREAKERS, MAKE CERTAIN EMERGENCY LIGHT SWITCHES ARE IN OFF POSITION.

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

### LOWER EPC, DC TRANSFER BUS

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

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

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## **OVERHEAD EMERGENCY DC BUS**

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

- (2) Remove passageway light lens cover by carefully lifting up edge of cover from light fixture.
- (3) Remove integral lamp module from lens cover and remove lamp from module.
- (4) Remove attaching screws from light fixture.
- (5) Remove fixture from housing to gain access to electrical wiring.
- (6) Tag and disconnect electrical wires.
- B. Install Light

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

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

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	Col	<u>Number</u>	Name
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

## OVERHEAD EMERGENCY DC BUS

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

- (2) Remove tags and connect electrical wires.
- (3) Place passageway light fixture on housing and install attaching screws.
- (4) Install new lamp inside module and place integral module inside lens cover.
- (5) Position lens cover over fixture.
- (6) Apply even pressure on edges of cover until cover seats over fixture.
- (7) Remove the safety tags and close these circuit breakers:

### LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>	
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Z 37 B1-387 EMERGENCY LIGHTS CHARGING

# OVERHEAD EMERGENCY DC BUS

Row Col Number Name

A 14 B1-41 EMERGENCY LIGHTS ARM AND CHARGE

(8) Check operation of lights. (EMERGENCY LIGHTS - CHECK, PAGEBLOCK 33-53-00/601)

# 4. <u>Removal/Installation Battery Packs</u>

A. Remove Cabin Emergency Lights Battery Pack. (EMERGENCY LIGHTS - REMOVAL/ INSTALLATION, PAGEBLOCK 33-53-00/401)

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## FLOOR TRACK EMERGENCY LIGHTING - ADJUSTMENT/TEST

## 1. General

A. This procedure contains MSG-3 task card data.

# TASK 33-53-01-710-801

# 2. Operational Check of the Floor Track Emergency Lighting

NOTE: This procedure is a scheduled maintenance task.

### A. References

Reference	Title
24-00-00 P/B 001	GENERAL - DESCRIPTION AND OPERATION
24-40-00 P/B 001	EXTERNAL POWER - DESCRIPTION AND OPERATION

## B. Prepare for the Operational Check of the Floor Track Emergency Lighting

#### SUBTASK 33-53-01-861-001

(1) Energize the aircraft electrical power system. (GENERAL - DESCRIPTION AND OPERATION, PAGEBLOCK 24-00-00/001)

# C. Operational Check of the Floor Track Emergency Lighting

#### SUBTASK 33-53-01-710-001

(1) Do an operational check of the floor track lighting.

Remove the safety tags and close these circuit breakers:

# LOWER EPC, DC TRANSFER BUS

<u>Row</u>	<u>Col</u>	<u>Number</u>	Name
Z	37	B1-387	EMERGENCY LIGHTS CHARGING

# **OVERHEAD EMERGENCY DC BUS**

Row	<u>Col</u>	<u>Number</u>	Name
А	14	B1-41	EMERGENCY LIGHTS ARM AND CHARGE

- (2) Place EMER LTS switch to ON position.
  - (a) Make sure all floor lighting works properly.
- (3) Place EMER LTS switch to OFF position.

Open this circuit breaker and install safety tag:

# LOWER EPC, DC TRANSFER BUS

### Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (4) Gain access to battery pack in forward cabin overhead (B5-211) at Station 338.
  - (a) Disconnect battery pack (B5-211) cannon plug (P1-791).

Remove the safety tag and close this circuit breaker:

# LOWER EPC, DC TRANSFER BUS

### Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (5) Place EMER LTS switch ON position.
  - (a) Make sure 3/4 of the emergency floor lighting operates.

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(6) Place EMER LTS switch to OFF position.

Open this circuit breaker and install safety tag:

## LOWER EPC, DC TRANSFER BUS Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (7) Reconnect battery pack (B5-211) cannon plug (P1-791).
- (8) Gain access to battery pack in aft cabin overhead (B5-212) at Station 1290.
  - (a) Disconnect battery pack (B5-212) cannon plug (P1-792).
     Remove the safety tag and close this circuit breaker:

LOWER EPC. DC TRANSFER BUS

Row Col Number Name

- Z 37 B1-387 EMERGENCY LIGHTS CHARGING
- (9) Place EMER LTS switch to ON position.
  - (a) Make sure 3/4 of the emergency floor lighting operates.
- (10) Place EMER LTS switch to OFF position.

Open this circuit breaker and install safety tag:

## LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

(11) Reconnect battery pack (B5-212) cannon plug (P1-792).

Remove the safety tag and close this circuit breaker:

LOWER EPC, DC TRANSFER BUS

Row Col Number Name

Z 37 B1-387 EMERGENCY LIGHTS CHARGING

- (12) Place EMER LTS switch to ON position.
  - (a) Make sure all floor lighting operates normally.
- (13) Place EMER LTS switch to OFF position.

# D. Job Close-up

SUBTASK 33-53-01-942-001

(1) Remove all the tools and equipment from the work area. Make sure the area is clean.

SUBTASK 33-53-01-862-001

(2) De-energize the aircraft electrical power system. (EXTERNAL POWER - DESCRIPTION AND OPERATION, PAGEBLOCK 24-40-00/001)

------ END OF TASK -------

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# **EXIT IDENTIFIERS - ADJUSTMENT/TEST**

# 1. General

A. This procedure contains MSG-3 task card data.

# TASK 33-53-01-720-801

# 2. Functional Check of Self Illuminating Exit Signs

### A. Self Illuminating Signs Functional Check

**WARNING:** IF AN ITEM CONTAINING TRITIUM IS DAMAGED OR BROKEN, ALL PERSONNEL MUST LEAVE THE AIRCRAFT IMMEDIATELY.

SUBTASK 33-53-01-720-001

(1) Check self illuminating signs as follows:

ITEM NO.	ITEM DESCRIPTION	MANUFACTURER
1	Comparator DB-45-B1	Self Powered Lighting 31 Waterloo Ave.
	DB-45-B2	PO Box 657 Berwyn, PA 19312

(a) Check signs for cracks or breakage.

<u>NOTE</u>: If cracks or breakage of sign is observed during removal, proceed immediately to AMM 11–00 for removal instructions.

(b) With comparator held in front of sign, focus on center of individual letters.

<u>NOTE</u>: Betalight comparator internal luminous source must be calibrated at 100 microlamberts to provide accurate comparison.

(c) Compare brightness of sign with comparator internal luminous source. If luminescence of any letter is less than comparator luminous source, replace sign.

—— END OF TASK ——

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