

**CHAPTER**

**34**

**NAVIGATION**



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1 thru 9	JUN 15/2016		R 204	Jun 15/2016		501	Jun 15/2015	
10	BLANK		O 205	Jun 15/2016		R 502	Jun 15/2016	
34-CONTENTS			O 206	Jun 15/2016		O 503	Jun 15/2016	
O 1	Jun 15/2016		O 207	Jun 15/2016		O 504	Jun 15/2016	
O 2	Jun 15/2016		R 208	Jun 15/2016		O 505	Jun 15/2016	
3	Feb 15/2015		209	Oct 15/2015		506	Feb 15/2015	
4	Feb 15/2015		210	Oct 15/2015		507	Oct 15/2015	
5	Feb 15/2015		211	Oct 15/2015		508	Oct 15/2015	
O 6	Jun 15/2016		212	Oct 15/2015		R 509	Jun 15/2016	
7	Feb 15/2016		213	Oct 15/2015		O 510	Jun 15/2016	
8	Feb 15/2015		214	BLANK		511	Feb 15/2016	
9	Feb 15/2015	34-11-00				512	Feb 15/2016	
10	Feb 15/2015		301	Feb 15/2015		513	Feb 15/2016	
O 11	Jun 15/2016		302	Feb 15/2015		O 514	Jun 15/2016	
12	Feb 15/2016		303	Oct 15/2014		R 515	Jun 15/2016	
13	Feb 15/2016		304	Oct 15/2014		O 516	Jun 15/2016	
O 14	Jun 15/2016		305	Oct 15/2014		O 517	Jun 15/2016	
O 15	Jun 15/2016		306	Oct 15/2014		O 518	Jun 15/2016	
O 16	Jun 15/2016		307	Oct 15/2014		R 519	Jun 15/2016	
O 17	Jun 15/2016		308	Oct 15/2014		O 520	Jun 15/2016	
O 18	Jun 15/2016		309	Oct 15/2014		O 521	Jun 15/2016	
O 19	Jun 15/2016		310	Oct 15/2014		O 522	Jun 15/2016	
O 20	Jun 15/2016		311	Oct 15/2014		R 523	Jun 15/2016	
O 21	Jun 15/2016		312	Oct 15/2014		O 524	Jun 15/2016	
O 22	BLANK		313	Oct 15/2014		O 525	Jun 15/2016	
34-00-00			314	Oct 15/2014		R 526	Jun 15/2016	
R 901	Jun 15/2016		315	Oct 15/2014		O 527	Jun 15/2016	
R 902	Jun 15/2016		316	Oct 15/2014		O 528	Jun 15/2016	
903	Jun 15/2015		317	Oct 15/2014		R 529	Jun 15/2016	
904	Jun 15/2015		318	Oct 15/2015		O 530	Jun 15/2016	
905	Jun 15/2015		R 319	Jun 15/2016		O 531	Jun 15/2016	
906	BLANK		320	Jun 15/2016		O 532	Jun 15/2016	
34-11-00			321	Feb 15/2015		O 533	Jun 15/2016	
201	Feb 15/2015		322	BLANK		R 534	Jun 15/2016	
202	Oct 15/2015					O 535	Jun 15/2016	
203	Jun 15/2015					O 536	Jun 15/2016	

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34-11-00	(cont)		34-11-01			34-11-02	(cont)	
O 537	Jun 15/2016		401	Feb 15/2016		414	BLANK	
O 538	Jun 15/2016		R 402	Jun 15/2016		34-11-02		
R 539	Jun 15/2016		R 403	Jun 15/2016		601	Feb 15/2015	
O 540	Jun 15/2016		404	Oct 15/2015		602	Feb 15/2015	
O 541	Jun 15/2016		405	Oct 15/2015		603	Feb 15/2015	
O 542	Jun 15/2016		406	Oct 15/2015		604	Feb 15/2015	
O 543	Jun 15/2016		407	Oct 15/2015		605	Oct 15/2015	
R 544	Jun 15/2016		R 408	Jun 15/2016		606	Oct 15/2015	
R 545	Jun 15/2016		R 409	Jun 15/2016		607	Oct 15/2015	
R 546	Jun 15/2016		R 410	Jun 15/2016		608	Oct 15/2015	
R 547	Jun 15/2016		R 411	Jun 15/2016		34-16-00		
R 548	Jun 15/2016		412	Feb 15/2015		501	Jun 15/2015	
R 549	Jun 15/2016		34-11-01			502	BLANK	
R 550	Jun 15/2016		601	Feb 15/2015		34-21-00		
R 551	Jun 15/2016		602	Feb 15/2015		201	Feb 15/2015	
R 552	Jun 15/2016		603	Feb 15/2015		202	Feb 15/2015	
R 553	Jun 15/2016		604	Feb 15/2015		203	Jun 15/2015	
R 554	Jun 15/2016		605	Oct 15/2015		204	Feb 15/2015	
A 555	Jun 15/2016		606	Oct 15/2015		205	Feb 15/2015	
A 556	Jun 15/2016		34-11-01			206	Jun 15/2015	
A 557	Jun 15/2016		701	Jun 15/2015		207	Feb 15/2015	
A 558	Jun 15/2016		702	Oct 15/2014		208	Feb 15/2015	
A 559	Jun 15/2016		34-11-02			R 209	Jun 15/2016	
A 560	Jun 15/2016		401	Oct 15/2014		210	Feb 15/2015	
A 561	Jun 15/2016		402	Oct 15/2014		211	Oct 15/2015	
A 562	Jun 15/2016		403	Oct 15/2015		212	Feb 15/2015	
A 563	Jun 15/2016		404	Oct 15/2015		34-21-00		
A 564	Jun 15/2016		405	Oct 15/2015		501	Jun 15/2015	
A 565	Jun 15/2016		406	Oct 15/2014		502	Oct 15/2014	
A 566	Jun 15/2016		407	Feb 15/2016		R 503	Jun 15/2016	
A 567	Jun 15/2016		408	Feb 15/2016		R 504	Jun 15/2016	
A 568	Jun 15/2016		409	Oct 15/2015		R 505	Jun 15/2016	
A 569	Jun 15/2016		410	Oct 15/2015		O 506	Jun 15/2016	
A 570	Jun 15/2016		411	Oct 15/2015		R 507	Jun 15/2016	
A 571	Jun 15/2016		412	Oct 15/2014		O 508	Jun 15/2016	
A 572	Jun 15/2016		413	Oct 15/2014		O 509	Jun 15/2016	

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34-21-00 (cont)			34-21-04			34-21-06		
O 510	Jun 15/2016		R 401	Jun 15/2016		601	Oct 15/2014	
O 511	Jun 15/2016		402	Oct 15/2014		602	Oct 15/2014	
O 512	Jun 15/2016		403	Oct 15/2015		603	Oct 15/2015	
O 513	Jun 15/2016		404	Oct 15/2015		604	Oct 15/2015	
R 514	Jun 15/2016		405	Oct 15/2014		605	Oct 15/2015	
R 515	Jun 15/2016		R 406	Jun 15/2016		606	BLANK	
R 516	Jun 15/2016		R 407	Jun 15/2016		34-21-07		
O 517	Jun 15/2016		408	Oct 15/2015		401	Oct 15/2014	
R 518	Jun 15/2016		409	Oct 15/2015		402	Oct 15/2014	
O 519	Jun 15/2016		410	Oct 15/2014		403	Oct 15/2015	
O 520	Jun 15/2016		R 411	Jun 15/2016		404	Jun 15/2015	
O 521	Jun 15/2016		412	BLANK		405	Jun 15/2015	
O 522	Jun 15/2016		34-21-05			406	BLANK	
523	Feb 15/2016		401	Feb 15/2016		34-23-00		
524	Feb 15/2016		402	Feb 15/2016		201	Feb 15/2015	
525	Feb 15/2016		403	Oct 15/2015		202	Feb 15/2015	
526	Feb 15/2016		R 404	Jun 15/2016		203	Oct 15/2015	
34-21-01			405	Feb 15/2015		204	Jun 15/2015	
401	Oct 15/2014		406	Jun 15/2015		205	Jun 15/2015	
402	Oct 15/2014		R 407	Jun 15/2016		206	Oct 15/2015	
403	Oct 15/2015		O 408	Jun 15/2016		207	Oct 15/2015	
404	Feb 15/2016		409	Feb 15/2015		208	Oct 15/2015	
405	Jun 15/2015		410	Feb 15/2015		209	Oct 15/2015	
406	Jun 15/2015		34-21-05			R 210	Jun 15/2016	
34-21-02			601	Feb 15/2015		211	Jun 15/2015	
401	Oct 15/2014		602	Feb 15/2015		212	Feb 15/2015	
402	Oct 15/2014		603	Feb 15/2015		213	Jun 15/2015	
403	Oct 15/2015		604	Oct 15/2015		214	BLANK	
404	Jun 15/2015		34-21-06			34-23-01		
405	Jun 15/2015		601	Oct 15/2014		201	Oct 15/2014	
406	BLANK		602	Oct 15/2015		202	Oct 15/2015	
34-21-03			402	Oct 15/2015		203	Jun 15/2015	
401	Oct 15/2014		R 403	Jun 15/2016		204	BLANK	
402	Oct 15/2015		404	Feb 15/2015		34-23-01		
R 403	Jun 15/2016		405	Jun 15/2015		401	Oct 15/2014	
O 404	Jun 15/2016		406	BLANK		402	Oct 15/2015	

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34-23-01 (cont)			34-24-03 (cont)			34-31-42 (cont)		
403	Jun 15/2015		408	BLANK		403	Oct 15/2015	
404	Jun 15/2015		34-31-00			404	Jun 15/2015	
34-24-00			201	Feb 15/2015		R 405	Jun 15/2016	
201	Feb 15/2015		202	Feb 15/2015		O 406	Jun 15/2016	
202	Oct 15/2015		203	Feb 15/2015		407	Jun 15/2015	
203	Feb 15/2015		204	BLANK		408	BLANK	
204	BLANK		34-31-00			34-31-52		
34-24-02 Config 91			501	Jun 15/2015		401	Oct 15/2014	
R 201	Jun 15/2016		R 502	Jun 15/2016		402	Oct 15/2015	
R 202	Jun 15/2016		503	Feb 15/2015		403	Jun 15/2015	
34-24-02			R 504	Jun 15/2016		R 404	Jun 15/2016	
R 401	Jun 15/2016		R 505	Jun 15/2016		405	Jun 15/2015	
402	Oct 15/2014		506	Jun 15/2015		406	BLANK	
403	Oct 15/2015		507	Feb 15/2015		34-31-62		
404	Jun 15/2015		508	Jun 15/2015		401	Oct 15/2014	
R 405	Jun 15/2016	34-31-21				402	Oct 15/2015	
O 406	Jun 15/2016		401	Oct 15/2014		403	Oct 15/2015	
34-24-02			402	Oct 15/2014		404	Jun 15/2015	
501	Jun 15/2015		403	Oct 15/2015		405	Jun 15/2015	
R 502	Jun 15/2016		404	Oct 15/2015		406	Jun 15/2015	
503	Jun 15/2015		R 405	Jun 15/2016		34-31-72		
504	Jun 15/2015		406	Feb 15/2015		401	Oct 15/2014	
505	Feb 15/2015		407	Feb 15/2015		402	Oct 15/2014	
506	Feb 15/2015		408	Feb 15/2015		403	Oct 15/2015	
507	Feb 15/2015	34-31-31				404	Oct 15/2015	
508	Jun 15/2015		401	Oct 15/2014		405	Jun 15/2015	
509	Jun 15/2015		402	Oct 15/2014		406	Jun 15/2015	
510	BLANK		403	Oct 15/2015		407	Feb 15/2015	
34-24-03			404	Oct 15/2015		408	Jun 15/2015	
401	Jun 15/2015		R 405	Jun 15/2016		34-32-00		
402	Feb 15/2016		406	Feb 15/2015		R 201	Jun 15/2016	
403	Oct 15/2015		407	Feb 15/2015		202	Oct 15/2015	
404	Oct 15/2015		408	Feb 15/2015		203	Feb 15/2015	
405	Feb 15/2016	34-31-42				204	BLANK	
406	Jun 15/2015		401	Oct 15/2014				
407	Feb 15/2016		402	Oct 15/2014				

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R 501	Jun 15/2016		R 407	Jun 15/2016		701	Feb 15/2015	
R 502	Jun 15/2016		R 408	Jun 15/2016		702	BLANK	
O 503	Jun 15/2016		34-33-11			34-43-11		
O 504	Jun 15/2016		601	Oct 15/2014		401	Oct 15/2014	
34-32-11			602	Oct 15/2014		402	Oct 15/2014	
401	Feb 15/2016		34-33-21			403	Oct 15/2015	
402	Feb 15/2016		401	Oct 15/2014		404	Oct 15/2015	
403	Oct 15/2015		402	Oct 15/2014		405	Oct 15/2014	
404	Oct 15/2015		403	Oct 15/2015		406	Oct 15/2014	
405	Feb 15/2015		404	Jun 15/2015		407	Oct 15/2014	
406	Jun 15/2015		405	Jun 15/2015		408	Oct 15/2015	
34-33-00			406	BLANK		409	Feb 15/2016	
201	Feb 15/2015		34-43-00			410	Feb 15/2015	
202	Feb 15/2015		201	Feb 15/2016		34-43-33		
203	Oct 15/2015		202	Feb 15/2016		401	Oct 15/2014	
204	Feb 15/2016		203	Oct 15/2015		402	Oct 15/2014	
205	Feb 15/2016		204	Feb 15/2015		403	Oct 15/2015	
R 206	Jun 15/2016		R 205	Jun 15/2016		404	Oct 15/2015	
O 207	Jun 15/2016		R 206	Jun 15/2016		405	Feb 15/2015	
O 208	Jun 15/2016		34-43-00 Config 3			406	Feb 15/2015	
34-33-00			R 501	Jun 15/2016		34-43-41		
501	Jun 15/2015		502	Oct 15/2014		401	Oct 15/2014	
502	Oct 15/2015		503	Oct 15/2014		402	Oct 15/2014	
R 503	Jun 15/2016		504	Oct 15/2015		403	Oct 15/2015	
R 504	Jun 15/2016		505	Oct 15/2014		404	Oct 15/2014	
505	Feb 15/2016		506	Oct 15/2014		405	Oct 15/2014	
506	Feb 15/2016		507	Oct 15/2014		406	BLANK	
507	Oct 15/2015		508	Oct 15/2014		34-43-42		
508	BLANK		509	Oct 15/2014		401	Oct 15/2014	
34-33-11			510	BLANK		402	Oct 15/2015	
401	Feb 15/2016		34-43-10			403	Feb 15/2015	
R 402	Jun 15/2016		401	Oct 15/2014		404	Feb 15/2015	
R 403	Jun 15/2016		402	Oct 15/2015		34-43-52		
R 404	Jun 15/2016		403	Jun 15/2015		401	Feb 15/2016	
R 405	Jun 15/2016		404	BLANK		R 402	Jun 15/2016	
R 406	Jun 15/2016					403	Jun 15/2015	

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404	Jun 15/2015		O 521	Jun 15/2016		R 212	Jun 15/2016	
34-43-91			O 522	Jun 15/2016		R 213	Jun 15/2016	
401	Oct 15/2014		O 523	Jun 15/2016		O 214	Jun 15/2016	
402	Oct 15/2015		524	Jun 15/2015		O 215	Jun 15/2016	
403	Jun 15/2015		R 525	Jun 15/2016		O 216	Jun 15/2016	
R 404	Jun 15/2016		526	Jun 15/2015		R 217	Jun 15/2016	
R 405	Jun 15/2016		527	Jun 15/2015		R 218	Jun 15/2016	
406	BLANK		528	Jun 15/2015		O 219	Jun 15/2016	
34-45-00			529	Jun 15/2015		O 220	Jun 15/2016	
201	Feb 15/2015		530	Jun 15/2015		O 221	Jun 15/2016	
202	Feb 15/2015		531	Jun 15/2015		R 222	Jun 15/2016	
203	Feb 15/2015		532	BLANK		O 223	Jun 15/2016	
204	Oct 15/2015	34-45-01				O 224	Jun 15/2016	
205	Feb 15/2015		401	Feb 15/2016		R 225	Jun 15/2016	
206	BLANK		402	Oct 15/2015		R 226	Jun 15/2016	
34-45-00			403	Feb 15/2016		R 227	Jun 15/2016	
501	Jun 15/2015		404	Oct 15/2015		O 228	Jun 15/2016	
502	Jun 15/2015	34-45-02				R 229	Jun 15/2016	
503	Jun 15/2015		401	Feb 15/2016		O 230	Jun 15/2016	
504	Oct 15/2015		402	Feb 15/2016		R 231	Jun 15/2016	
R 505	Jun 15/2016		403	Oct 15/2015		O 232	Jun 15/2016	
O 506	Jun 15/2016		R 404	Jun 15/2016		R 233	Jun 15/2016	
O 507	Jun 15/2016		405	Feb 15/2015		O 234	Jun 15/2016	
O 508	Jun 15/2016		406	Feb 15/2015		O 235	Jun 15/2016	
O 509	Jun 15/2016	34-46-00				O 236	BLANK	
O 510	Jun 15/2016		R 201	Jun 15/2016		D 237	Jun 15/2016	
511	Oct 15/2015		202	Jun 15/2015		D 238	BLANK	
512	Jun 15/2015		203	Jun 15/2015		34-46-00 Config 2		
R 513	Jun 15/2016		204	Feb 15/2016		R 501	Jun 15/2016	
514	Jun 15/2015		205	Jun 15/2015		R 502	Jun 15/2016	
515	Jun 15/2015		206	Jun 15/2015		O 503	Jun 15/2016	
R 516	Jun 15/2016		207	Oct 15/2015		R 504	Jun 15/2016	
517	Oct 15/2015		R 208	Jun 15/2016		505	Jun 15/2015	
518	Oct 15/2015		O 209	Jun 15/2016		506	Feb 15/2015	
R 519	Jun 15/2016		O 210	Jun 15/2016		507	Oct 15/2014	
O 520	Jun 15/2016		R 211	Jun 15/2016		508	Feb 15/2015	

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34-46-00 Config 2 (cont)			34-51-00 (cont)			34-53-00 (cont)		
509	Oct 15/2014		R 505	Jun 15/2016		R 505	Jun 15/2016	
510	Oct 15/2014		R 506	Jun 15/2016		R 506	Jun 15/2016	
R 511	Jun 15/2016		R 507	Jun 15/2016		O 507	Jun 15/2016	
O 512	Jun 15/2016		R 508	Jun 15/2016		R 508	Jun 15/2016	
R 513	Jun 15/2016		R 509	Jun 15/2016		O 509	Jun 15/2016	
514	Oct 15/2014		R 510	Jun 15/2016		R 510	Jun 15/2016	
515	Oct 15/2014		R 511	Jun 15/2016		O 511	Jun 15/2016	
516	Oct 15/2014		R 512	Jun 15/2016		R 512	Jun 15/2016	
517	Oct 15/2014		R 513	Jun 15/2016		O 513	Jun 15/2016	
518	Oct 15/2014		R 514	Jun 15/2016		R 514	Jun 15/2016	
519	Jun 15/2015		A 515	Jun 15/2016		O 515	Jun 15/2016	
520	BLANK		A 516	BLANK		O 516	Jun 15/2016	
34-46-01			34-51-01			O 517	Jun 15/2016	
401	Oct 15/2014		401	Oct 15/2014		O 518	Jun 15/2016	
402	Oct 15/2015		402	Oct 15/2014		O 519	Jun 15/2016	
403	Oct 15/2015		403	Oct 15/2015		O 520	Jun 15/2016	
404	Oct 15/2015		404	Jun 15/2015		O 521	Jun 15/2016	
405	Feb 15/2016		405	Jun 15/2015		R 522	Jun 15/2016	
406	Feb 15/2016		406	BLANK		R 523	Jun 15/2016	
407	Oct 15/2015		34-51-02			R 524	Jun 15/2016	
408	BLANK		R 401	Jun 15/2016		O 525	Jun 15/2016	
34-46-02			R 402	Jun 15/2016		O 526	Jun 15/2016	
401	Oct 15/2014		R 403	Jun 15/2016		R 527	Jun 15/2016	
402	Oct 15/2015		R 404	Jun 15/2016		O 528	Jun 15/2016	
403	Oct 15/2014		R 405	Jun 15/2016		R 529	Jun 15/2016	
404	Oct 15/2014		406	BLANK		R 530	Jun 15/2016	
34-51-00			34-53-00			R 531	Jun 15/2016	
201	Feb 15/2015		201	Feb 15/2015		R 532	Jun 15/2016	
202	Feb 15/2015		202	Feb 15/2015		O 533	Jun 15/2016	
203	Oct 15/2015		203	Oct 15/2015		R 534	Jun 15/2016	
204	Feb 15/2015		204	Feb 15/2015		O 535	Jun 15/2016	
34-51-00			34-53-00			R 536	Jun 15/2016	
R 501	Jun 15/2016		501	Jun 15/2015		A 537	Jun 15/2016	
R 502	Jun 15/2016		R 502	Jun 15/2016		A 538	Jun 15/2016	
R 503	Jun 15/2016		R 503	Jun 15/2016				
R 504	Jun 15/2016		O 504	Jun 15/2016				

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34-53-01			34-55-00 (cont)			34-57-01 (cont)		
401	Oct 15/2014		508	Feb 15/2015		403	Oct 15/2015	
402	Oct 15/2015		509	Jun 15/2015		404	Oct 15/2015	
403	Oct 15/2015		510	BLANK		R 405	Jun 15/2016	
404	Oct 15/2014		34-55-11			O 406	Jun 15/2016	
R 405	Jun 15/2016		401	Oct 15/2014		O 407	Jun 15/2016	
R 406	Jun 15/2016		402	Oct 15/2015		R 408	Jun 15/2016	
34-53-02			403	Oct 15/2015		34-57-02		
401	Oct 15/2014		404	Feb 15/2015		401	Oct 15/2014	
402	Oct 15/2015		405	Jun 15/2015		R 402	Jun 15/2016	
403	Jun 15/2015		406	Feb 15/2015		R 403	Jun 15/2016	
R 404	Jun 15/2016		407	Feb 15/2015		404	Jun 15/2015	
34-53-03			408	BLANK		34-57-03		
401	Oct 15/2015		34-55-21			401	Oct 15/2014	
R 402	Jun 15/2016		401	Oct 15/2014		402	Oct 15/2014	
R 403	Jun 15/2016		402	Oct 15/2014		403	Oct 15/2015	
R 404	Jun 15/2016		403	Oct 15/2015		404	Jun 15/2015	
A 405	Jun 15/2016		404	Jun 15/2015		R 405	Jun 15/2016	
A 406	BLANK		405	Jun 15/2015		406	Jun 15/2015	
34-53-04			406	BLANK		34-58-00		
401	Oct 15/2014		34-57-00			201	Feb 15/2015	
402	Oct 15/2015		201	Feb 15/2015		202	Feb 15/2015	
403	Oct 15/2015		202	Feb 15/2015		R 203	Jun 15/2016	
404	Jun 15/2015		203	Feb 15/2015		204	Feb 15/2015	
R 405	Jun 15/2016		204	BLANK		34-58-00		
R 406	Jun 15/2016		34-57-00			501	Jun 15/2015	
34-55-00			501	Jun 15/2015		502	Jun 15/2015	
201	Feb 15/2015		502	Oct 15/2014		503	Oct 15/2014	
202	Feb 15/2015		R 503	Jun 15/2016		504	BLANK	
34-55-00			R 504	Jun 15/2016		34-58-02		
501	Jun 15/2015		R 505	Jun 15/2016		401	Feb 15/2016	
502	Oct 15/2014		R 506	Jun 15/2016		402	Feb 15/2016	
503	Jun 15/2015		507	Jun 15/2015		403	Oct 15/2015	
504	Jun 15/2015		508	BLANK		404	Feb 15/2016	
505	Feb 15/2015		34-57-01			405	Feb 15/2015	
506	Feb 15/2015		401	Feb 15/2016		406	Feb 15/2015	
507	Jun 15/2015		402	Feb 15/2016		407	Jun 15/2015	

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201	Feb 15/2015		506	Feb 15/2016		403	Jun 15/2015	
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R 502	Jun 15/2016							
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MMEL 34-20 (DDPG) Restoration - Low Range Radio Altimeter (LRRA) Inoperative TASK 34-00-00-440-802				902	AKS ALL
MMEL 34-40 (DDPG) Preparation - Traffic Collision and Avoidance System (TCAS) Inoperative TASK 34-00-00-040-801				904	AKS ALL
MMEL 34-40 (DDPG) Restoration - Traffic Collision and Avoidance System (TCAS) Inoperative TASK 34-00-00-440-801				904	AKS ALL
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Captain's Total Air Pressure System - Pressurization TASK 34-11-00-790-803				203	AKS ALL
Static and Total Air Pressure System - Pressurization TASK 34-11-00-790-802				207	AKS ALL
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Right Pitot System Leak Test TASK 34-11-00-790-811					522	AKS ALL
Alternate Pitot System Leak Test TASK 34-11-00-790-812					525	AKS ALL
Left Static System Full-range Leak Test TASK 34-11-00-790-813					529	AKS ALL
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Altimetry System Test TASK 34-11-00-780-802					544	AKS ALL POST SB 737-34-2454
<b>PITOT PROBE - REMOVAL/INSTALLATION</b>	34-11-01				401	AKS ALL
Pitot Probe - Removal TASK 34-11-01-000-801					401	AKS ALL
Pitot Probe - Installation TASK 34-11-01-400-801					408	AKS ALL
<b>PITOT PROBE - INSPECTION/CHECK</b>	34-11-01				601	AKS ALL
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<b>STATIC PORT - REMOVAL/INSTALLATION</b>		34-11-02		401	AKS ALL
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Primary Static Port Installation				405	AKS ALL
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Air Data Inertial Reference Unit Removal TASK 34-21-01-000-801					401	AKS ALL
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Total Air Temperature Probe - Inspection TASK 34-21-06-000-802					601	AKS ALL
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		Integrated Standby Flight Display Installation TASK 34-24-02-400-801		401	AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY
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		ISFD Dedicated Battery System - Operational Test TASK 34-24-02-710-802		508	AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY
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		ILS Glide Slope Antenna Removal TASK 34-31-21-000-801		401	AKS ALL
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Weather Radar Antenna Flat Plate Removal	TASK 34-43-11-000-801					401	AKS ALL	
Weather Radar Antenna Flat Plate Installation	TASK 34-43-11-400-801					405	AKS ALL	
Weather Radar Antenna Drive Unit Removal	TASK 34-43-11-000-802					406	AKS ALL	
Weather Radar Antenna Drive Unit Installation	TASK 34-43-11-400-802					409	AKS ALL	
<u>WEATHER RADAR PROCESSOR MOUNT - REMOVAL/INSTALLATION</u>		34-43-33				401	AKS ALL	
Weather Radar Processor Mount Removal	TASK 34-43-33-000-801					401	AKS ALL	

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Weather Radar Processor Mount Installation TASK 34-43-33-400-801					405	AKS ALL
<b><u>WEATHER RADAR RECEIVER/TRANSMITTER - REMOVAL/INSTALLATION</u></b>			34-43-41		401	AKS ALL
Weather Radar Receiver/Transmitter Removal TASK 34-43-41-000-801					401	AKS ALL
Weather Radar Receiver/Transmitter Installation TASK 34-43-41-400-801					404	AKS ALL
<b><u>WEATHER RADAR PROCESSOR - REMOVAL/INSTALLATION</u></b>			34-43-42		401	AKS ALL
Weather Radar Processor Removal TASK 34-43-42-000-801					401	AKS ALL
Weather Radar Processor Installation TASK 34-43-42-400-801					403	AKS ALL
<b><u>WEATHER RADAR PROCESSOR MOUNT FAN ASSEMBLY - REMOVAL/INSTALLATION</u></b>			34-43-52		401	AKS ALL
Weather Radar Processor Mount Fan Assembly Removal TASK 34-43-52-000-801					401	AKS ALL
Weather Radar Processor Mount Fan Assembly Installation TASK 34-43-52-400-801					403	AKS ALL
<b><u>WEATHER RADAR CONTROL PANEL - REMOVAL/INSTALLATION</u></b>			34-43-91		401	AKS ALL
Weather Radar Control Panel Removal TASK 34-43-91-000-801					401	AKS ALL
Weather Radar Control Panel Installation TASK 34-43-91-400-801					403	AKS ALL
<b><u>TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) - MAINTENANCE PRACTICES</u></b>			34-45-00		201	AKS ALL
Flight History Data Download TASK 34-45-00-970-801					201	AKS ALL
Traffic Alert and Collision Avoidance System - Deactivation TASK 34-45-00-040-801					202	AKS ALL

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Traffic Alert and Collision Avoidance System - Activation				205	AKS ALL
TASK 34-45-00-440-801					
<b>TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) - ADJUSTMENT/TEST</b>	34-45-00			501	AKS ALL
TCAS - Operational Test				501	AKS ALL
TASK 34-45-00-710-801					
TCAS - System Test (With the IFR TCAS-201 Test Set)				505	AKS ALL
TASK 34-45-00-730-801					
TCAS - System Test (With the TIC TR-220 Test Set)				511	AKS ALL
TASK 34-45-00-730-804					
TCAS - System Test (with the TIC T-49 Test Set)				519	AKS ALL
TASK 34-45-00-730-802					
TCAS - System Test (With the IFR-6000 Test Set)				524	AKS ALL
TASK 34-45-00-730-803					
<b>TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) COMPUTER - REMOVAL/INSTALLATION</b>	34-45-01			401	AKS ALL
TCAS Computer Removal				401	AKS ALL
TASK 34-45-01-000-801					
TCAS Computer Installation				403	AKS ALL
TASK 34-45-01-400-801					
<b>TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) ANTENNA - REMOVAL/INSTALLATION</b>	34-45-02			401	AKS ALL
TCAS Antenna Removal				401	AKS ALL
TASK 34-45-02-000-801					
TCAS Antenna Installation				404	AKS ALL
TASK 34-45-02-400-801					
<b>GROUND PROXIMITY WARNING SYSTEM - MAINTENANCE PRACTICES</b>	34-46-00			201	AKS ALL
Ground Proximity Warning System - Deactivation				201	AKS ALL
TASK 34-46-00-040-801					

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Ground Proximity Warning System - Activation TASK 34-46-00-440-801				203	AKS ALL
Load the Operational Program (OPC) software with ARINC 615A Data Loader TASK 34-46-00-470-804				204	AKS 005-999; AKS 001-004 POST SB 737-34-2617
Load the Operational Program Configuration (OPC) software with an Enhanced Airborne Data Loader (eADL) TASK 34-46-00-470-808				208	AKS ALL
Verify the Operational Program Configuration (OPC) Part Number TASK 34-46-00-700-803				211	AKS ALL
Verify the Operational Program Configuration (OPC) Part Number with an Enhanced Airborne Data Loader (eADL) TASK 34-46-00-700-804				212	AKS ALL
Load the Terrain Database with PCMCIA Flash Card TASK 34-46-00-470-802				213	AKS 001-004 PRE SB 737-34-2617
Verify the Terrain Database Part Number for PCMCIA Flash Card Load TASK 34-46-00-700-801				217	AKS 001-004 PRE SB 737-34-2617
Load the Terrain Database with USB Drive Load TASK 34-46-00-470-803				218	AKS 005-999; AKS 001-004 POST SB 737-34-2617
Load the Terrain Database with ARINC 615A Dataloader TASK 34-46-00-470-805				222	AKS 005-999; AKS 001-004 POST SB 737-34-2617
Verify the Terrain Database Part Number TASK 34-46-00-700-802				225	AKS ALL
Flight History Data Download TASK 34-46-00-970-801				226	AKS 001-004 PRE SB 737-34-2617
Flight History Data Download TASK 34-46-00-970-802				227	AKS 005-999; AKS 001-004 POST SB 737-34-2617
Runway Awareness and Advisory System (RAAS) Activation TASK 34-46-00-710-805				229	AKS 001-004 PRE SB 737-34-2617

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Load the RAAS RCD Software with a USB Flash Drive TASK 34-46-00-710-806		231		AKS 005-999; AKS 001-004 POST SB 737-34-2617
Load the RAAS RCD Software with an ARINC 615A Data Loader TASK 34-46-00-470-810		233		AKS 005-999; AKS 001-004 POST SB 737-34-2617
<b><u>GROUND PROXIMITY WARNING SYSTEM - ADJUSTMENT/TEST</u></b>	34-46-00	2	501	AKS ALL
Ground Proximity Warning System - Operational Test TASK 34-46-00-710-804-002		2	501	AKS ALL
Ground Proximity Warning System - System Test TASK 34-46-00-730-804-002		2	505	AKS ALL
<b><u>GROUND PROXIMITY WARNING COMPUTER - REMOVAL/INSTALLATION</u></b>	34-46-01		401	AKS ALL
Ground Proximity Warning Computer Removal TASK 34-46-01-000-801			401	AKS ALL
Ground Proximity Warning Computer Installation TASK 34-46-01-400-801			405	AKS ALL
<b><u>GROUND PROXIMITY WARNING MODULE - REMOVAL/INSTALLATION</u></b>	34-46-02		401	AKS ALL
Ground Proximity Warning Module Removal TASK 34-46-02-000-801			401	AKS ALL
Ground Proximity Warning Module Installation TASK 34-46-02-400-801			403	AKS ALL
<b><u>VOR SYSTEM - MAINTENANCE PRACTICES</u></b>	34-51-00		201	AKS ALL
VOR - Deactivation TASK 34-51-00-040-801			201	AKS ALL
VOR - Activation TASK 34-51-00-440-801			204	AKS ALL
<b><u>VOR SYSTEM - ADJUSTMENT/TEST</u></b>	34-51-00		501	AKS ALL
VOR System - Operational Test TASK 34-51-00-710-801			501	AKS ALL
VOR System - System Test TASK 34-51-00-730-801			505	AKS ALL

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<b><u>VOR/MKR RECEIVER - REMOVAL/INSTALLATION</u></b>		34-51-01		401	AKS ALL
VOR/MKR Receiver Removal				401	AKS ALL
TASK 34-51-01-000-801					
VOR/MKR Receiver Installation				404	AKS ALL
TASK 34-51-01-400-801					
<b><u>VOR/LOC ANTENNA - REMOVAL/INSTALLATION</u></b>		34-51-02		401	AKS ALL
VOR/LOC Antenna Removal				401	AKS ALL
TASK 34-51-02-000-801					
VOR/LOC Antenna Installation				404	AKS ALL
TASK 34-51-02-400-801					
<b><u>AIR TRAFFIC CONTROL (ATC) SYSTEM - MAINTENANCE PRACTICES</u></b>		34-53-00		201	AKS ALL
Air Traffic Control System - Deactivation				201	AKS ALL
TASK 34-53-00-040-801					
Air Traffic Control System - Activation				204	AKS ALL
TASK 34-53-00-440-801					
<b><u>AIR TRAFFIC CONTROL (ATC) SYSTEM - ADJUSTMENT/TEST</u></b>		34-53-00		501	AKS ALL
Air Traffic Control System - Operational Test				501	AKS ALL
TASK 34-53-00-710-801					
ATC System Test (With the ATC-601 Test Set)				503	AKS ALL
TASK 34-53-00-730-803					
System Test - ATC System (With the TIC T-48 or T-49 Series Test Set)				517	AKS ALL
TASK 34-53-00-730-802					
ATC System - System Test (With the IFR 6000 Test Set)				522	AKS ALL
TASK 34-53-00-730-805					
ATC System Test (With the TR-220 Test Set)				529	AKS ALL
TASK 34-53-00-730-806					
<b><u>AIR TRAFFIC CONTROL (ATC) ANTENNA - REMOVAL/INSTALLATION</u></b>		34-53-01		401	AKS ALL
ATC Antenna Removal				401	AKS ALL
TASK 34-53-01-000-801					

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ATC Antenna Installation TASK 34-53-01-400-801				403	AKS ALL
<u>AIR TRAFFIC CONTROL (ATC) TRANSPONDER - REMOVAL/INSTALLATION</u>	34-53-02			401	AKS ALL
ATC Transponder Removal TASK 34-53-02-020-801				401	AKS ALL
ATC Transponder Installation TASK 34-53-02-400-801				403	AKS ALL
<u>ATC CONTROL PANEL - REMOVAL/INSTALLATION</u>	34-53-03			401	AKS ALL
ATC Control Panel Removal TASK 34-53-03-000-801				401	AKS ALL
ATC Control Panel Installation TASK 34-53-03-400-801				403	AKS ALL
<u>AIR TRAFFIC CONTROL (ATC) ANTENNA SWITCH - REMOVAL/INSTALLATION</u>	34-53-04			401	AKS ALL
ATC Antenna Switch Removal TASK 34-53-04-000-801				401	AKS ALL
ATC Antenna Switch Installation TASK 34-53-04-400-801				404	AKS ALL
<u>DME SYSTEM - MAINTENANCE PRACTICES</u>	34-55-00			201	AKS ALL
DME System - Deactivation TASK 34-55-00-040-801				201	AKS ALL
DME System - Activation TASK 34-55-00-440-801				202	AKS ALL
<u>DME SYSTEM - ADJUSTMENT/TEST</u>	34-55-00			501	AKS ALL
DME System - Operational Test TASK 34-55-00-710-801				501	AKS ALL
DME System - System Test TASK 34-55-00-730-801				503	AKS ALL
<u>DME ANTENNA - REMOVAL/INSTALLATION</u>	34-55-11			401	AKS ALL
DME Antenna Removal TASK 34-55-11-000-801				401	AKS ALL
DME Antenna Installation TASK 34-55-11-400-801				403	AKS ALL

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<b>DME INTERROGATOR - REMOVAL/INSTALLATION</b>	34-55-21				401	AKS ALL
DME Interrogator Removal					401	AKS ALL
TASK 34-55-21-000-801						
DME Interrogator Installation					404	AKS ALL
TASK 34-55-21-400-801						
<b>AUTOMATIC DIRECTION FINDER SYSTEM - MAINTENANCE PRACTICES</b>	34-57-00				201	AKS ALL
Automatic Direction Finder System - Deactivation					201	AKS ALL
TASK 34-57-00-040-801						
Automatic Direction Finder System - Activation					202	AKS ALL
TASK 34-57-00-440-801						
<b>AUTOMATIC DIRECTION FINDER SYSTEM - ADJUSTMENT/TEST</b>	34-57-00				501	AKS ALL
Automatic Direction Finder System - System Test					501	AKS ALL
TASK 34-57-00-730-802						
<b>ADF ANTENNA - REMOVAL/INSTALLATION</b>	34-57-01				401	AKS ALL; AIRPLANES WITH ADF ANTENNA
ADF Antenna Removal					401	AKS ALL; AIRPLANES WITH ADF ANTENNA
TASK 34-57-01-000-801						
ADF Antenna Installation					405	AKS ALL; AIRPLANES WITH ADF ANTENNA
TASK 34-57-01-400-801						
<b>ADF CONTROL PANEL - REMOVAL/INSTALLATION</b>	34-57-02				401	AKS ALL; AIRPLANES WITH ADF CONTROL PANEL
ADF Control Panel Removal					401	AKS ALL; AIRPLANES WITH ADF CONTROL PANEL
TASK 34-57-02-000-801						
ADF Control Panel Installation					403	AKS ALL; AIRPLANES WITH ADF CONTROL PANEL
TASK 34-57-02-400-801						
<b>ADF RECEIVER - REMOVAL/INSTALLATION</b>	34-57-03				401	AKS ALL; AIRPLANES WITH ADF RECEIVER
ADF Receiver Removal					401	AKS ALL; AIRPLANES WITH ADF RECEIVER
TASK 34-57-03-000-801						
ADF Receiver Installation					404	AKS ALL; AIRPLANES WITH ADF RECEIVER
TASK 34-57-03-400-801						

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<b>GLOBAL POSITIONING SYSTEM - MAINTENANCE PRACTICES</b>	34-58-00				201	AKS ALL
Global Positioning System - Deactivation TASK 34-58-00-040-801					201	AKS ALL
Global Positioning System - Activation TASK 34-58-00-440-801					204	AKS ALL
<b>GLOBAL POSITIONING SYSTEM - ADJUSTMENT/TEST</b>	34-58-00				501	AKS ALL
Global Positioning System - Operational Test TASK 34-58-00-710-802					501	AKS ALL
Global Positioning System - System Test TASK 34-58-00-730-802					502	AKS ALL
<b>GPS ANTENNA - REMOVAL/INSTALLATION</b>	34-58-02				401	AKS ALL
GPS Antenna Removal TASK 34-58-02-000-802					401	AKS ALL
GPS Antenna Installation TASK 34-58-02-400-802					404	AKS ALL
<b>FLIGHT MANAGEMENT COMPUTER SYSTEM - MAINTENANCE PRACTICES</b>	34-61-00				201	AKS ALL
FMC - Deactivation TASK 34-61-00-040-801					201	AKS ALL
FMC - Activation TASK 34-61-00-440-801					202	AKS ALL
FMC Software Installation with an Enhanced Airborne Data Loader TASK 34-61-00-470-811					203	AKS ALL
FMC Software Installation with a Portable Data Loader TASK 34-61-00-470-805					207	AKS 002-999
FMC Software Crossload TASK 34-61-00-470-806					214	AKS ALL
FMC Software Configuration Check TASK 34-61-00-750-801					215	AKS ALL

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CDU Software Installation with an Airborne Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU) TASK 34-61-00-470-807				216	AKS ALL
CDU Software Installation with a Portable Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU) TASK 34-61-00-470-808				218	AKS 002-999
CDU Software Installation with an Enhanced Airborne Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU) TASK 34-61-00-470-812				221	AKS ALL
CDU Software Configuration Check (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU) TASK 34-61-00-750-802				224	AKS ALL
Software Installation when the Airborne Data Loader is Inoperative TASK 34-61-00-470-809				225	AKS ALL
FMC Diagnostic Data Transfer TASK 34-61-00-810-801				227	AKS ALL
Setting Zero Fuel Weight TASK 34-61-00-400-801				230	AKS ALL
<b>FLIGHT MANAGEMENT COMPUTER SYSTEM - ADJUSTMENT/TEST</b>	34-61-00			501	AKS ALL
Flight Management Computer System - Operational Test TASK 34-61-00-710-801				501	AKS ALL
Flight Management Computer System - System Test TASK 34-61-00-730-801				504	AKS ALL
FMCS Performance Factors - Adjustment TASK 34-61-00-800-801				516	AKS ALL
<b>FMCS CONTROL DISPLAY UNIT - MAINTENANCE PRACTICES</b>	34-61-01			201	AKS ALL
FMCS CDU Cooling Vent and Surfaces Cleaning TASK 34-61-01-100-801				201	AKS ALL

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FMCS CDU Display Cleaning TASK 34-61-01-100-802				204	AKS ALL
FMCS CDU Keyboard Removal TASK 34-61-01-000-801				204	AKS ALL
FMCS CDU Keyboard Installation TASK 34-61-01-400-801				207	AKS ALL
<b><u>FMCS CONTROL DISPLAY UNIT - SERVICING</u></b>	34-61-01			301	AKS ALL
CDU Lamp Test TASK 34-61-01-710-801				301	AKS ALL
<b><u>FMCS CONTROL DISPLAY UNIT - REMOVAL/INSTALLATION</u></b>	34-61-01			401	AKS ALL
FMCS Control Display Unit (CDU) Removal TASK 34-61-01-000-802				401	AKS ALL
FMCS Control Display Unit (CDU) Installation TASK 34-61-01-400-802				404	AKS ALL
<b><u>FMCS COMPUTER - REMOVAL/INSTALLATION</u></b>	34-61-02			401	AKS ALL
FMCS Computer Removal TASK 34-61-02-000-801				401	AKS ALL
FMCS Computer Installation TASK 34-61-02-400-801				403	AKS ALL
<b><u>AIRBORNE DATA LOADER - REMOVAL/INSTALLATION</u></b>	34-61-03			401	AKS ALL
Airborne Data Loader Removal TASK 34-61-03-000-801				401	AKS ALL
Airborne Data Loader Installation TASK 34-61-03-400-801				401	AKS ALL
<b><u>FMCS TRANSFER RELAYS - REMOVAL/INSTALLATION</u></b>	34-61-04			401	AKS ALL
FMCS Transfer Relay Removal TASK 34-61-04-000-801				401	AKS ALL
FMCS Transfer Relay Installation TASK 34-61-04-400-801				405	AKS ALL

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NAVIGATION - DDG MAINTENANCE PROCEDURES

1. **General**

- A. This procedure has the maintenance tasks for the Master Minimum Equipment List (MMEL) maintenance requirements as shown in the Dispatch Deviations Procedures Guide (DDPG). These tasks prepare the airplane for flight with systems/components that are inoperative.
- B. This procedure also has the tasks that put the airplane back to its usual condition.
- C. These are the tasks for the components in the navigation system:
  - (1) MMEL 34-20 (DDPG) Preparation - Low Range Radio Altimeter (LRRA) Inoperative
  - (2) MMEL 34-20 (DDPG) Restoration - Low Range Radio Altimeter (LRRA) Inoperative
  - (3) MMEL 34-40 (DDPG) Preparation - Traffic Collision and Avoidance System (TCAS) Inoperative
  - (4) MMEL 34-40 (DDPG) Restoration - Traffic Collision and Avoidance System (TCAS) Inoperative

**TASK 34-00-00-040-802**

| 2. **MMEL 34-20 (DDPG) Preparation - Low Range Radio Altimeter (LRRA) Inoperative**

A. **General**

- (1) This task gives the maintenance steps which prepare the airplane for flight with the Low Range Radio Altimeter (LRRA) inoperative.

B. **References**

Reference	Title
32-00-00-040-815	MMEL 32-17-01 (DDPG) Preparation - PSEU Fault (P/B 901)

C. **Location Zones**

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

D. **LRRA Deactivation, Left**

SUBTASK 34-00-00-040-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

NOTE: With one radio altimeter not operating, the SPEED BRAKE DO NOT ARM light will come on from the ground when speed brake handle is moved from the DOWN detent.

SUBTASK 34-00-00-410-001

- (2) For airplanes without FCC Operational Program Software (OPS) 2212-HNP-03B-05 or later installed, re-initialize the Flight Control Computer (FCC) associated with the inoperative radio altimeter by momentarily opening and then closing the applicable P18-1 panel FCC circuit breaker.

NOTE: Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.



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SUBTASK 34-00-00-040-005

- (3) For airplanes with PSEU part number 285A1600–5 or earlier, refer to MMEL 32-17-01 (DDPG) Preparation - PSEU Fault, TASK 32-00-00-040-815. An invalid radio altimeter signal will generate a dispatchable PSEU fault.

**E. LRRA Deactivation, Right**

SUBTASK 34-00-00-040-003

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

NOTE: With one radio altimeter not operating, the SPEED BRAKE DO NOT ARM light will come on from the ground when speed brake handle is moved from the DOWN detent.

SUBTASK 34-00-00-410-002

- (2) For airplanes without FCC Operational Program Software (OPS) 2212-HNP-03B-05 or later installed, re-initialize the Flight Control Computer (FCC) associated with the inoperative radio altimeter by momentarily opening and then closing the applicable P6-1 panel FCC circuit breaker.

NOTE: Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.

SUBTASK 34-00-00-040-006

- (3) For airplanes with PSEU part number 285A1600–5 or earlier, refer to MMEL 32-17-01 (DDPG) Preparation - PSEU Fault, TASK 32-00-00-040-815. An invalid radio altimeter signal will generate a dispatchable PSEU fault.

———— END OF TASK ————

**TASK 34-00-00-440-802**

**3. MMEL 34-20 (DDPG) Restoration - Low Range Radio Altimeter (LRRA) Inoperative**

**A. General**

- (1) This task puts the airplane back to its usual condition after operation with the Low Range Radio Altimeter (LRRA) inoperative.

**B. References**

Reference	Title
32-00-00-440-815	MMEL 32-17-01 (DDPG) Restoration - PSEU Fault (P/B 901)
34-33-00-710-801	Low Range Radio Altimeter (LRRA) System - Operational Test (P/B 501)

**C. Location Zones**

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



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**D. LRRA Reactivation, Left**

SUBTASK 34-00-00-440-002

- (1) Remove the safety lock and close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

SUBTASK 34-00-00-410-003

- (2) For airplanes without FCC Operational Program Software (OPS) 2212-HNP-03B-05 or later installed, re-initialize the Flight Control Computer (FCC) associated with the inoperative radio altimeter by momentarily opening and then closing the applicable P18-1 panel FCC circuit breaker.

NOTE: Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.

SUBTASK 34-00-00-040-007

- (3) For airplanes with PSEU part number 285A1600-5 or earlier, refer to MMEL 32-17-01 (DDPG) Restoration - PSEU Fault, TASK 32-00-00-440-815. An invalid radio altimeter signal will generate a dispatchable PSEU fault.

**E. LRRA Reactivation, Right**

SUBTASK 34-00-00-440-003

- (1) Remove the safety lock and close this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-00-00-410-004

- (2) For airplanes without FCC Operational Program Software (OPS) 2212-HNP-03B-05 or later installed, re-initialize the Flight Control Computer (FCC) associated with the inoperative radio altimeter by momentarily opening and then closing the applicable P6-1 panel FCC circuit breaker.

NOTE: Rockwell Collins FCC Operational Program Software (OPS) part numbers are considered to be equivalent to Honeywell FCC OPS part number 2212-HNP-03B-05 and later.

SUBTASK 34-00-00-040-008

- (3) For airplanes with PSEU part number 285A1600-5 or earlier, refer to MMEL 32-17-01 (DDPG) Restoration - PSEU Fault, TASK 32-00-00-440-815. An invalid radio altimeter signal will generate a dispatchable PSEU fault.

**F. FCC-A Re-initialization (left)**

SUBTASK 34-00-00-440-004

- (1) Momentarily open and close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01045	AFCS SYS A FCC DC



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**G. FCC-B Re-initialization (right)**

SUBTASK 34-00-00-440-005

- (1) Momentarily open and close this circuit breaker:

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C01046	AFCS SYS B FCC DC

**H. LRRA Repair**

SUBTASK 34-00-00-740-002

- (1) Do this task: Low Range Radio Altimeter (LRRA) System - Operational Test, TASK 34-33-00-710-801.

SUBTASK 34-00-00-810-003

- (2) Go to the Fault Code Index in the FIM and find the fault code (the first two digits of the fault code are the FIM chapter).
  - (a) For each correlated maintenance message, find the maintenance message number to the right side of the fault code.
  - (b) Find the task number on the same line as the maintenance message number.

SUBTASK 34-00-00-810-004

- (3) Go to the task in the FIM and do the steps in the task.

———— END OF TASK ————

**TASK 34-00-00-040-801**

**4. MMEL 34-40 (DDPG) Preparation - Traffic Collision and Avoidance System (TCAS) Inoperative**

**A. General**

- (1) This task gives the maintenance steps which prepare the airplane for flight with the Traffic Collision and Avoidance System (TCAS) inoperative.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. TCAS Deactivation**

SUBTASK 34-00-00-040-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	6	C01195	TCAS

———— END OF TASK ————

**TASK 34-00-00-440-801**

**5. MMEL 34-40 (DDPG) Restoration - Traffic Collision and Avoidance System (TCAS) Inoperative**

**A. General**

- (1) This task puts the airplane back to its usual condition after operation with the Traffic Collision and Avoidance System (TCAS) inoperative.



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**B. References**

<b>Reference</b>	<b>Title</b>
FIM 34-45 TASK 801	Traffic Alert and Collision Avoidance System (TCAS) BITE Procedure

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. TCAS Reactivation**

SUBTASK 34-00-00-440-001

- (1) Remove the safety lock and close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	6	C01195	TCAS

**E. TCAS Repair**

SUBTASK 34-00-00-740-001

- (1) Do this task: FIM 34-45 TASK 801.

SUBTASK 34-00-00-810-001

- (2) Go to the Fault Code Index in the FIM and find the fault code (the first two digits of the fault code are the FIM chapter).
  - (a) For each correlated maintenance message, find the maintenance message number to the right side of the fault code.
  - (b) Find the task number on the same line as the maintenance message number.

SUBTASK 34-00-00-810-002

- (3) Go to the task in the FIM and do the steps in the task.

———— END OF TASK ————



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STATIC AND TOTAL AIR PRESSURE SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Static and Total Air Pressure System Deactivation.
  - (2) Static and Total Air Pressure System Activation.
  - (3) Pressurization of the Captain's Total Air Pressure System to simulate an airspeed.
  - (4) Pressurization of the Static and Total Air Pressure System to simulate an altitude and airspeed.

**TASK 34-11-00-040-801**

**2. Static and Total Air Pressure System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power from the Static and Total Air Pressure System.

**B. Location Zones**

**Zone      Area**

211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-11-00-860-203

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

**CAPT Electrical System Panel, P18-3**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**D. Static and Total Air Pressure System - Tryout**

NOTE: This tryout is to make sure the Static and Total Air Pressure System is in a zero energy state.

SUBTASK 34-11-00-860-204

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

**CAPT Electrical System Panel, P18-3**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-00-700-001

- (2) At the Probe Heat Panel on the FWD OVHD Panel (P5) do the following:
  - (a) Push the probe heat switches "A" and "B" to the ON position.
  - (b) Make sure the amber warning lights come on.

NOTE: Amber system warning lights come on when a probe does not have heat.

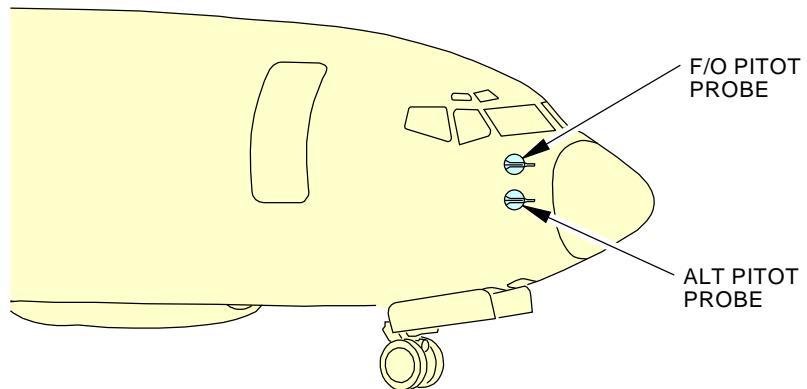
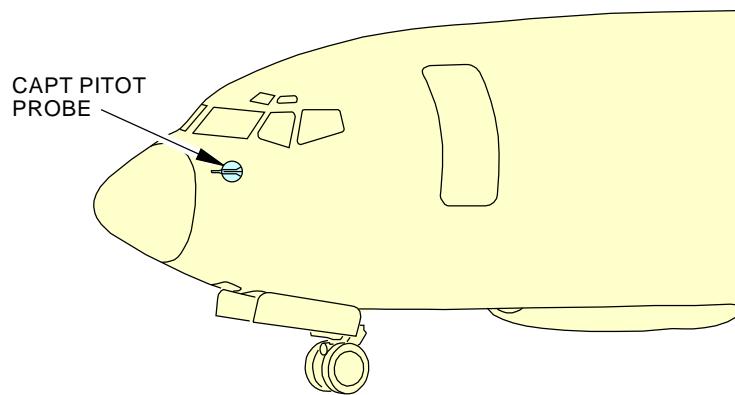
———— END OF TASK ————

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**Pitot Probe**  
Figure 201/34-11-00-990-804

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**TASK 34-11-00-440-801**

**3. Static and Total Air Pressure System - Activation**

(Figure 201)

**A. General**

- (1) This procedure adds electrical power to the Static and Total Air Pressure System.

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-11-00-860-205

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

————— END OF TASK ————

**TASK 34-11-00-790-803**

**4. Captain's Total Air Pressure System - Pressurization**

**A. General**

- (1) This task contains the steps to pressurize the Captain's Total Air Pressure System.

**B. References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)
24-22-00-860-814	Remove External Power (P/B 201)

**C. Tools/Equipment**

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



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<b>Reference</b>	<b>Description</b>
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
SPL-1917	Fixture - Test, Angle of Attack Sensor, ROSEMOUNT AOA's Part #: J34002-19 Supplier: 81205 Opt Part #: A34012-19 Supplier: 81205 Opt Part #: A34012-24 Supplier: 81205 Opt Part #: J34002-18 Supplier: 81205

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**E. Prepare for the Captain's Total Air Pressure System - Pressurization**

SUBTASK 34-11-00-860-062

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

**CAPT Electrical System Panel, P18-3**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT

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(Continued)

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-860-063

- (2) Do this task: Supply External Power, TASK 24-22-00-860-813.

SUBTASK 34-11-00-730-002

**CAUTION:** OBEY THESE PRECAUTIONS BEFORE YOU APPLY PRESSURE TO THE PITOT SYSTEM. IF YOU DO NOT OBEY THESE PRECAUTIONS, DAMAGE TO THE EQUIPMENT AND INSTRUMENTS CAN OCCUR.

- (3) Obey these precautions before you apply pressure to the pitot system.

- (a) Supply the electrical power for the ADIRS before you make the total pressure hook-up.
- (b) Keep power on until the pressure hook-up is opened.
- (c) Pressure changes must be flow controlled to prevent sudden changes in pressure and possible damage to the air data hardware.
- (d) Keep the total pressure in the range of 3.26 to 41.34 inches Hg.
- (e) When you adjust the pressure, make sure the rate of change of airspeed is less than 300 knots per minute.
- (f) Make sure the difference between the static and pitot line pressure is not larger than 10 inches Hg.
- (g) Make sure the autopilot system stays off during the test.

**CAUTION:** MAKE SURE YOU DO NOT SUPPLY ELECTRICAL POWER TO THE PITOT PROBE HEATER. THIS CAN CAUSE DAMAGE TO THE PITOT PROBE.

- (h) Make sure the pitot probe heaters stay off during the test.
- (i) Make sure the AOA vanes are set to 0 ±5 degree, with respect to the AOA sensor alignment pin with an angle of attack probe test fixture, SPL-1917.

**F. Captain's Total Air Pressure System - Pressurization**

SUBTASK 34-11-00-860-064

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT



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SUBTASK 34-11-00-170-072

**CAUTION:** MAKE SURE THAT YOU FLUSH THE PITOT SYSTEM TEST ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. DAMAGE TO THE PROBE OR THE ADAPTER CAN OCCUR.

- (2) Flush the pitot test adapter, COM-1916, with water.

NOTE: Use equal parts of water and ethylene glycol when the temperature is between 32° and -40°F.

SUBTASK 34-11-00-480-084

- (3) Blow dry, filtered air through the pitot test adapter, COM-1916.

SUBTASK 34-11-00-480-085

- (4) Wipe the probe with a damp cloth.

SUBTASK 34-11-00-480-086

- (5) Attach a red paper tag that has PITOT PROBES COVERED or STATIC PORTS COVERED in black letters, to the left control wheel in the flight deck with wire.

**WARNING:** WHEN THE PITOT PROBES HAVE COVERS ON THEM, MAKE SURE THAT A PERSON ON THE GROUND CAN SEE THE COVERS. ALSO MAKE SURE YOU ATTACH A TAG TO THE LEFT CONTROL WHEEL IN THE FLIGHT COMPARTMENT AS A REMINDER THAT THE PITOT PROBES HAVE COVERS ON THEM. IF THE COVERS ARE NOT REMOVED FROM THE PITOT PROBES, INCORRECT AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS CAN OCCUR. THIS CAN CAUSE DANGEROUS FLIGHT CONDITIONS.

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT FROM THE TEST HOSE. THE PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (6) Install the pitot test adapter, COM-1916, on the left pitot probe.

SUBTASK 34-11-00-480-087

- (7) Connect the air data model test set, COM-1914 to the pitot test adapter, COM-1916.

SUBTASK 34-11-00-790-057

**CAUTION:** MAKE SURE THAT THE PRESSURE IN THE ADM IS NOT TOO HIGH. PRESSURE THAT IS MORE THAN 39.865 INCHES HG WILL CAUSE DAMAGE TO THE ADM.

**CAUTION:** DO NOT DISCONNECT THE PITOT SYSTEM TEST ADAPTER WHEN THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE. DAMAGE TO THE AIR DATA MODULES CAN OCCUR IF THE SYSTEM IS NOT AT AMBIENT PRESSURE.

- (8) Operate the air data model test set, COM-1914 to apply the desired pressure to the pitot system.

SUBTASK 34-11-00-790-058

- (9) Stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-059

- (10) Read the appropriate instrument.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-860-065

- (1) Put the system back to ambient pressure.

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SUBTASK 34-11-00-080-046

**CAUTION:** DO NOT DISCONNECT THE PITOT SYSTEM TEST ADAPTER WHEN THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE. IF YOU DO, DAMAGE TO THE ADM CAN OCCUR.

- (2) Disconnect the air data model test set, COM-1914 from the pitot test adapter, COM-1916.

SUBTASK 34-11-00-080-047

- (3) Remove the pitot test adapter, COM-1916, from the pitot probe.

SUBTASK 34-11-00-860-066

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-080-125

- (5) Remove the red paper tag that has PITOT PROBES COVERED or STATIC PORTS COVERED in black letters, from the left control wheel in the flight deck.

SUBTASK 34-11-00-860-067

- (6) Do this task: Remove External Power, TASK 24-22-00-860-814.

———— END OF TASK ————

**TASK 34-11-00-790-802**

**5. Static and Total Air Pressure System - Pressurization**

**A. General**

- (1) This task contains the steps to pressurize the static and total air pressure system.

**B. References**

<u>Reference</u>	<u>Title</u>
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)
34-11-00-990-802	Figure: Static System Drains (P/B 301)

**C. Tools/Equipment**

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



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<b>Reference</b>	<b>Description</b>
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984
SPL-1917	Fixture - Test, Angle of Attack Sensor, ROSEMOUNT AOA's Part #: J34002-19 Supplier: 81205 Opt Part #: A34012-19 Supplier: 81205 Opt Part #: A34012-24 Supplier: 81205 Opt Part #: J34002-18 Supplier: 81205

**D. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

<b>Zone</b>	<b>Area</b>
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

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F. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

G. Prepare for the Static and Total Air Pressure System - Pressurization

SUBTASK 34-11-00-730-003

**CAUTION:** OBEY THESE PRECAUTIONS BEFORE YOU APPLY PRESSURE TO THE PITOT-STATIC SYSTEM. IF YOU DO NOT OBEY THESE PRECAUTIONS, DAMAGE TO THE EQUIPMENT AND INSTRUMENTS CAN OCCUR.

- (1) Obey these precautions before you apply pressure to the pitot-static system.

**CAUTION:** MAKE SURE YOU DO NOT SUPPLY ELECTRICAL POWER TO THE PITOT PROBE HEATER. THIS CAN CAUSE DAMAGE TO THE PITOT PROBE.

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-2**

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

- (b) Supply the electrical power to the ADIRS before you make the static or total pressure connections.
- (c) Keep electrical power on the ADIRS until all pressure connections are opened.
- (d) Make sure that the Autopilot Flight Director System is off during the test.
- (e) Pressure changes must be flow controlled to prevent sudden changes in pressure and possible damage to the air data hardware.
  - 1) Static pressure will be applied to all systems at the same time.
    - a) Keep the static pressure in the range of 3.26 to 33.31 inches Hg.
    - b) Do not let the static pressure to be more than 28 inches Hg. from the ambient pressure.
    - c) Keep the static line pressure less than the pitot line pressure.
  - 2) Pitot pressure will be applied to all systems at the same time.
    - a) Keep the total pressure in the range of 3.26 to 41.34 inches Hg.
  - 3) Make sure the difference between the static and pitot line pressure is not larger than 10 inches Hg.
  - 4) When you adjust the static pressure, make sure the rate of change of altitude is less than 5,000 feet per minute.
  - 5) When you adjust the pitot pressure, make sure the rate of change of airspeed is less than 300 knots per minute.



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- (f) Do not connect or disconnect the test equipment while you have pressure in the pitot-static system.

SUBTASK 34-11-00-860-068

- (2) Turn the altimeter BARO knobs on the captain's EFIS control panel, F/O's EFIS control panel, and standby altimeter through the full range.

SUBTASK 34-11-00-860-069

- (3) Set the altimeter BARO knobs on the captain's EFIS control panel, F/O's EFIS control panel, and standby altimeter to 29.92 inches of Hg.

SUBTASK 34-11-00-860-070

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (4) Set the ATC mode switch on the ATC control panel, P8-29, to the STBY position.

SUBTASK 34-11-00-860-071

- (5) Set the AOA vanes to  $0 \pm 5$  degrees, with respect to the AOA sensor alignment pin with an angle of attack probe test fixture, SPL-1917.

### H. Installation of Pitot Probe adapters

SUBTASK 34-11-00-480-237

- (1) Make sure that you do these steps before installing the pitot test adapter, COM-1916, on the probe:

- (a) Flush the pitot test adapter, COM-1916, with water.

NOTE: Use equal parts of ethylene glycol and water when the temperature is between 32° and -40°F.

- (b) Blow dry, filtered air through the adapter.

- (c) Wipe the probe with a damp cloth.

- (2) Install the adapters on the Captains, First Officers, and Alternate pitot probes.

- (3) Connect the adapters to the air data model test set, COM-1914.

### I. Installation of Drain Coupling

SUBTASK 34-11-00-480-160

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT EXTEND THE TAPE INTO THE STATIC PORTS. DAMAGE TO THE SURFACE OF THE PORT CAN OCCUR WHEN YOU REMOVE THE TAPE.

- (1) Seal these static ports with vinyl adhesive Scotch Brand No.471 tape, G02219:

- (a) Seal the upper and lower primary static ports and the alternate static port on the right side of the fuselage.

- (b) Seal the upper and lower primary static ports and the alternate static port on the left side of the fuselage.

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SUBTASK 34-11-00-480-161

- (2) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment.
  - (a) Do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801.

SUBTASK 34-11-00-010-023

- (3) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
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117A	Electronic Equipment Access Door
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SUBTASK 34-11-00-480-162

- (4) Remove the caps from the left, right and alternate static system drains, refer to (Figure 34-11-00-990-802).

SUBTASK 34-11-00-480-163

- (5) Install the coupling, COM-1927, on the left, right and alternate static system drains.

SUBTASK 34-11-00-480-164

- (6) Connect the air data model test set, COM-1914 to each coupling, COM-1927.

### J. Installation of Static Port Adapter

SUBTASK 34-11-00-480-165

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the static ports at these locations:
  - (a) The captain's static port on the right side of the fuselage.
  - (b) The first officer's static port on the right side of the fuselage.
  - (c) The alternate static port on the right side of the fuselage.

SUBTASK 34-11-00-480-166

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (2) Seal the static ports at these locations with Scotch Brand No.471 tape, G02219:
  - (a) The captain's static port on the left side of the fuselage.
  - (b) The first officer's static port on the left side of the fuselage.
  - (c) The alternate static port on the left side of the fuselage.

### K. Static and Total Air Pressure System - Pressurization

SUBTASK 34-11-00-780-001

- (1) Apply the desired pressures to the static and total air pressure system.

SUBTASK 34-11-00-800-001

- (2) Stop for one minute to allow the system to stabilize.



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SUBTASK 34-11-00-970-001

- (3) Read the appropriate instrument.

**L. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-080-087

- (1) Removal of Drain Coupling, 1QF2-3-64

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (a) Disconnect the air data model test set, COM-1914 from each coupling, COM-1927.
- (b) Disconnect each coupling, COM-1927, from the left, right and alternate static system drains.
- (c) Install the cap on the left and right static system drains.
- (d) Do a visual inspection of the quick-disconnect fittings that you connected.
  - 1) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

**WARNING:** MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. IF YOU DO NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (e) Remove the Scotch Brand No.471 tape, G02219, from the static ports at these locations:
  - 1) The Captain, First Officers and the Alternate static ports on the right side of the fuselage.
  - 2) The Captain, First Officers and the Alternate static ports on the left side of the fuselage.
- (f) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment.
  - 1) Do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801.
- (g) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-11-00-480-169

- (2) Removal of Static Port Adapter

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (a) Disconnect the air data model test set, COM-1914, from the static test adapter, COM-1921.

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**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (b) Remove the static test adapter, COM-1921, from the static ports at these locations:
- 1) The captain's static port on the right side of the fuselage.
  - 2) The first officer's static port on the right side of the fuselage.
  - 3) The alternate static port on the right side of the fuselage.

**WARNING:** MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. IF YOU DO NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (c) Remove the Scotch Brand No.471 tape, G02219, from the static ports at these locations:
- 1) The captain's static port on the left side of the fuselage.
  - 2) The first officer's static port on the left side of the fuselage.
  - 3) The alternate static port on the right side of the fuselage.

SUBTASK 34-11-00-080-090

- (3) Removal of the Probe Adapters:

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (a) Disconnect the air data model test set, COM-1914 from each pitot test adapter, COM-1916.

SUBTASK 34-11-00-860-073

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

———— END OF TASK ————

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STATIC AND TOTAL AIR PRESSURE SYSTEM - SERVICING

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure supplies instructions for the servicing of the Static and Pitot Systems.
- C. The draining procedure removes or assures the absence of liquid collected in the pitot static system drains. The flushing procedure removes or assures the absence of any foreign matter in the pitot static lines.

**TASK 34-11-00-170-801**

**2. Pitot Static System - Flushing**

(Figure 301, Figure 302)

**A. References**

Reference	Title
21-33-02-000-801	Cabin Altitude and Differential Pressure Indicator Removal (P/B 401)
21-33-02-400-801	Cabin Altitude and Differential Pressure Indicator Installation (P/B 401)
25-21-46-000-801	Sidewall Panel - Removal (P/B 401)
25-21-46-400-801	Sidewall Panel - Installation (P/B 401)
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)
25-52-09-000-801	Cargo Compartment Ceiling Liner - Removal (P/B 401)
25-52-09-400-801	Cargo Compartment Ceiling Liner - Installation (P/B 401)
34-11-00-790-804	Left Static System Low-range Leak Test (P/B 501)
34-11-00-790-806	Right Static System Low-range Leak Test (P/B 501)
34-11-00-790-808	Alternate Static System Low-range Leak Test (P/B 501)
34-11-00-790-810	Left Pitot System Leak Test (P/B 501)
34-11-00-790-811	Right Pitot System Leak Test (P/B 501)
34-11-00-790-812	Alternate Pitot System Leak Test (P/B 501)
34-24-02-000-801	Integrated Standby Flight Display Removal (P/B 401)
34-24-02-400-801	Integrated Standby Flight Display Installation (P/B 401)

**B. Tools/Equipment**

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

Reference	Description
COM-1926	Coupling - Quick Disconnect, Pitot System Drain Line Part #: 1QF2-2-64A Supplier: 24984
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984
STD-3940	Air Source - Regulated, Dry Filtered, 0 to 150 psig



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C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

D. Prepare to Flush the Pitot-Static System

SUBTASK 34-11-00-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

E. Flush the Left Static System

SUBTASK 34-11-00-010-001

- (1) For the applicable passenger seats, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

SUBTASK 34-11-00-010-002

- (2) For the applicable sidewall panel, do this task: Sidewall Panel - Removal, TASK 25-21-46-000-801.



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SUBTASK 34-11-00-020-001

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE STATIC SYSTEM CAN OCCUR.

- (3) Disconnect the static hoses at these locations:
  - (a) The static port located at STA 410, WL 220, LBL 73
  - (b) The static port located at STA 410, WL 218, RBL 73.

SUBTASK 34-11-00-020-002

- (4) Install pressure seal cap assembly on the disconnected hoses.

SUBTASK 34-11-00-020-003

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSES ARE TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Temporarily attach the static hoses to prevent movement.

SUBTASK 34-11-00-010-003

- (6) For the applicable ceiling liner in the forward cargo compartment, do this task: Cargo Compartment Ceiling Liner - Removal, TASK 25-52-09-000-801.

SUBTASK 34-11-00-010-004

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE FROM AN AIR DATA MODULE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (7) Disconnect the static hose from the Air Data Module-Left Static located at STA 409, WL 205, LBL 0.35.

SUBTASK 34-11-00-020-004

- (8) Install a pressure seal cap assembly on the disconnected hose.

SUBTASK 34-11-00-020-005

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSE IS TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (9) Temporarily attach the static hose to prevent movement.

SUBTASK 34-11-00-480-001

**CAUTION:** DO NOT APPLY PRESSURE TO THE SYSTEM WHEN AN AIR DATA MODULE IS CONNECTED TO THE SYSTEM. IF YOU DO, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (10) Use a coupling, COM-1927 to connect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, to the left static system at drain fitting No. 3.

NOTE: Drain fitting No. 3 is located at approximately STA 410, WL180, LBL 56.

SUBTASK 34-11-00-170-001

- (11) Remove the pressure seal cap assembly from the hose located at STA 410, WL 220, LBL 73.

SUBTASK 34-11-00-170-002

- (12) Apply 15 psig (103 kPa) of dry filtered air to the left static system.



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SUBTASK 34-11-00-170-003

- (13) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-004

- (14) Continue for three minutes or more.

SUBTASK 34-11-00-910-001

- (15) Stop blowing air.

SUBTASK 34-11-00-860-002

- (16) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-050

- (17) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-005

- (18) Remove the pressure seal cap assembly from the hose located at STA 410, WL 218, RBL 73.

SUBTASK 34-11-00-170-006

- (19) Apply 15 psig (103 kPa) of dry filtered air to the left static system.

SUBTASK 34-11-00-170-007

- (20) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-008

- (21) Continue for three minutes or more.

SUBTASK 34-11-00-910-002

- (22) Stop blowing air.

SUBTASK 34-11-00-840-005

- (23) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-051

- (24) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-009

- (25) Remove the pressure seal cap assembly from the hose located at STA 409, WL 205, LBL 0.35.

SUBTASK 34-11-00-170-010

- (26) Apply 15 psig (103 kPa) of dry filtered air to the left static system.

SUBTASK 34-11-00-170-011

- (27) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-012

- (28) Continue for three minutes or more.

SUBTASK 34-11-00-910-003

- (29) Stop blowing air.

SUBTASK 34-11-00-840-007

- (30) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-052

- (31) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-080-001

- (32) Disconnect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, from drain fitting No. 3.

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SUBTASK 34-11-00-420-004

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE STATIC SYSTEM CAN OCCUR.

- (33) Connect the static hoses at these locations:

- (a) The static port located at STA 410, WL 220, LBL 73
- (b) The static port located at STA 410, WL 218, RBL 73.

SUBTASK 34-11-00-420-005

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE TO AN AIR DATA MODULE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (34) Connect the static hose to the Air Data Module-Left Static located at STA 409, WL 205, LBL 0.35.

SUBTASK 34-11-00-410-001

- (35) For the applicable ceiling liner in the forward cargo compartment, do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801.

SUBTASK 34-11-00-410-002

- (36) For the applicable passenger seats, do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

SUBTASK 34-11-00-410-003

- (37) For the applicable sidewall panel, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

## F. Flush the Right Static System

SUBTASK 34-11-00-010-005

- (1) For the applicable passenger seats, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

SUBTASK 34-11-00-010-006

- (2) For the applicable sidewall panel, do this task: Sidewall Panel - Removal, TASK 25-21-46-000-801.

SUBTASK 34-11-00-020-009

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE STATIC SYSTEM CAN OCCUR.

- (3) Disconnect the static hoses at these locations:

- (a) The static port located at STA 410, WL 220, RBL 73
- (b) The static port located at STA 410, WL 218, LBL 73.

SUBTASK 34-11-00-020-010

- (4) Install pressure seal cap assembly on the disconnected hoses.

SUBTASK 34-11-00-020-011

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSES ARE TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Temporarily attach the static hoses to prevent movement.

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SUBTASK 34-11-00-010-007

- (6) For the applicable ceiling liner in the forward cargo compartment, do this task: Cargo Compartment Ceiling Liner - Removal, TASK 25-52-09-000-801.

SUBTASK 34-11-00-020-012

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE FROM AN AIR DATA MODULE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (7) Disconnect the static hose from the Air Data Module-Right Static located at STA 430, WL 205, RBL 0.35.

SUBTASK 34-11-00-020-013

- (8) Install a pressure seal cap assembly on the disconnected hose.

SUBTASK 34-11-00-020-014

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSE IS TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (9) Temporarily attach the static hose to prevent movement.

SUBTASK 34-11-00-480-002

**CAUTION:** DO NOT APPLY PRESSURE TO THE SYSTEM WHEN AN AIR DATA MODULE IS CONNECTED TO THE SYSTEM. IF YOU DO, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (10) Use a coupling, COM-1927 to connect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, to the right static system at drain fitting No. 4.

NOTE: Drain fitting No. 4 is located at approximately STA 410, WL180, LBL 56.

SUBTASK 34-11-00-170-013

- (11) Remove the pressure seal cap assembly from the hose located at STA 410, WL 220, RBL 73.

SUBTASK 34-11-00-170-014

- (12) Apply 15 psig (103 kPa) of dry filtered air to the right static system.

SUBTASK 34-11-00-170-015

- (13) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-016

- (14) Continue for three minutes or more.

SUBTASK 34-11-00-910-004

- (15) Stop blowing air.

SUBTASK 34-11-00-840-011

- (16) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-053

- (17) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-017

- (18) Remove the pressure seal cap assembly from the hose located at STA 410, WL 218, LBL 73.

SUBTASK 34-11-00-170-018

- (19) Apply 15 psig (103 kPa) of dry filtered air to the right static system.

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SUBTASK 34-11-00-170-019

- (20) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-020

- (21) Continue for three minutes or more.

SUBTASK 34-11-00-910-005

- (22) Stop blowing air.

SUBTASK 34-11-00-840-013

- (23) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-054

- (24) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-021

- (25) Remove the pressure seal cap assembly from the hose located at STA 410, WL180, LBL 56.

SUBTASK 34-11-00-170-022

- (26) Apply 15 psig (103 kPa) of dry filtered air to the right static system.

SUBTASK 34-11-00-170-023

- (27) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-024

- (28) Continue for three minutes or more.

SUBTASK 34-11-00-910-006

- (29) Stop blowing air.

SUBTASK 34-11-00-840-015

- (30) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-055

- (31) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-080-002

- (32) Disconnect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, from drain fitting No. 4.

SUBTASK 34-11-00-420-009

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU  
DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE STATIC SYSTEM CAN  
OCCUR.

- (33) Connect the static hoses at these locations:

- The static port located at STA 410, WL 220, RBL 73
- The static port located at STA 410, WL 218, LBL 73.

SUBTASK 34-11-00-420-010

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU  
CONNECT A HOSE TO AN AIR DATA MODULE. IF YOU DO NOT, DAMAGE TO THE  
AIR DATA MODULE CAN OCCUR.

- (34) Connect the static hose to the Air Data Module-Right Static located at STA 430, WL 205, RBL 0.35.



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SUBTASK 34-11-00-410-004

- (35) For the applicable ceiling liner in the forward cargo compartment, do this task: Cargo Compartment Ceiling Liner - Installation, TASK 25-52-09-400-801.

SUBTASK 34-11-00-410-005

- (36) For the applicable sidewall panel, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

SUBTASK 34-11-00-410-006

- (37) For the applicable passenger seats, do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

**G. Flush the Alternate Static System**

SUBTASK 34-11-00-010-008

- (1) For the applicable sidewall liners in the forward cargo compartment, do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801.

SUBTASK 34-11-00-020-018

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE STATIC SYSTEM CAN OCCUR.

- (2) Disconnect the static hoses at these locations:  
(a) The static port at STA 430, WL 167, LBL 49.  
(b) The static port at STA 430, WL 167, RBL 49.

SUBTASK 34-11-00-020-019

- (3) Install pressure seal cap assembly on the disconnected hoses.

SUBTASK 34-11-00-020-020

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSES ARE TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Temporarily attach the static hoses to prevent movement.

SUBTASK 34-11-00-020-021

- (5) Do this task: Cabin Altitude and Differential Pressure Indicator Removal, TASK 21-33-02-000-801.

SUBTASK 34-11-00-020-022

- (6) Install a pressure seal cap assembly on the disconnected hose.

SUBTASK 34-11-00-020-023

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSE IS TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (7) Temporarily attach the static hose to prevent movement.



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**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-11-00-010-017

- (8) Remove the integrated standby flight display. To remove the integrated standby flight display, do this task: Integrated Standby Flight Display Removal, TASK 34-24-02-000-801.

**AKS ALL**

SUBTASK 34-11-00-020-024

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSE IS TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (9) Temporarily attach the static hose to prevent movement.

SUBTASK 34-11-00-480-003

**CAUTION:** DO NOT APPLY PRESSURE TO THE SYSTEM WHEN AN AIR DATA INSTRUMENT IS CONNECTED TO THE SYSTEM. IF YOU DO, DAMAGE TO THE AIR DATA INSTRUMENT CAN OCCUR.

- (10) Use a coupling, COM-1927 to connect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, to the alternate static system at drain fitting No. 5.

NOTE: Drain fitting No. 5 is located at approximately STA 226, WL 155, RBL 18.

SUBTASK 34-11-00-170-025

- (11) Remove the pressure seal cap assembly from the hose located at STA 430, WL 167, LBL 49.

SUBTASK 34-11-00-170-026

- (12) Apply 15 psig (103 kPa) of dry filtered air to the alternate static system.

SUBTASK 34-11-00-170-027

- (13) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-028

- (14) Continue for three minutes or more.

SUBTASK 34-11-00-910-007

- (15) Stop blowing air.

SUBTASK 34-11-00-840-019

- (16) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-056

- (17) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-029

- (18) Remove the pressure seal cap assembly from the hose located at STA 430, WL 167, RBL 49.

SUBTASK 34-11-00-170-030

- (19) Apply 15 psig (103 kPa) of dry filtered air to the alternate static system.

SUBTASK 34-11-00-170-031

- (20) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-032

- (21) Continue for three minutes or more.

SUBTASK 34-11-00-910-008

- (22) Stop blowing air.



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SUBTASK 34-11-00-840-021

- (23) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-057

- (24) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-033

- (25) Remove the pressure seal cap assembly from the hose located at STA 220, WL 260, RBL 3.

SUBTASK 34-11-00-170-034

- (26) Apply 15 psig (103 kPa) of dry filtered air to the alternate static system.

SUBTASK 34-11-00-170-035

- (27) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-036

- (28) Continue for three minutes or more.

SUBTASK 34-11-00-910-009

- (29) Stop blowing air.

SUBTASK 34-11-00-840-023

- (30) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-058

- (31) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-037

- (32) Remove the pressure seal cap assembly from the hose located in the flight compartment.

SUBTASK 34-11-00-170-038

- (33) Apply 15 psig (103 kPa) of dry filtered air to the alternate static system.

SUBTASK 34-11-00-170-039

- (34) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-040

- (35) Continue for three minutes or more.

SUBTASK 34-11-00-910-010

- (36) Stop blowing air.

SUBTASK 34-11-00-840-025

- (37) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-059

- (38) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-080-003

- (39) Disconnect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, from drain fitting No. 5.

SUBTASK 34-11-00-420-015

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE STATIC SYSTEM CAN OCCUR.

- (40) Connect the static hoses at these locations:

- (a) The static port located at STA 430, WL 167, LBL 49
- (b) The static port located at STA 430, WL 167, RBL 49.

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AKS ALL

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SUBTASK 34-11-00-410-007

- (41) For the applicable ceiling liner in the forward cargo compartment, do this task: Cargo Compartment Ceiling Liner - Installation, TASK 25-52-09-400-801.

SUBTASK 34-11-00-420-016

- (42) Do this task: Cabin Altitude and Differential Pressure Indicator Installation, TASK 21-33-02-400-801.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-11-00-410-013

- (43) Install the integrated standby flight display. To install the integrated standby flight display, do this task: Integrated Standby Flight Display Installation, TASK 34-24-02-400-801.

**AKS ALL**

SUBTASK 34-11-00-410-009

- (44) For the applicable sidewall panel, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

SUBTASK 34-11-00-410-010

- (45) For the applicable passenger seats, do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

**H. Flush the Left Pitot System**

SUBTASK 34-11-00-020-029

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (1) Disconnect the pitot hose from the pitot probe located at STA 192, WL 225, LBL 34.

SUBTASK 34-11-00-020-030

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (2) Disconnect the pitot hose from the Air Data Module-Left Pitot located at STA 200, WL 175, LBL 13.

SUBTASK 34-11-00-020-031

- (3) Install pressure seal cap assembly on the disconnected hoses.

SUBTASK 34-11-00-020-032

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSES ARE TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Temporarily attach the pitot hoses to prevent movement.

SUBTASK 34-11-00-480-004

**CAUTION:** DO NOT APPLY PRESSURE TO THE SYSTEM WHEN AN AIR DATA MODULE IS CONNECTED TO THE SYSTEM. IF YOU DO, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (5) Use a coupling, COM-1926 to connect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, to the left pitot system at drain fitting No. 1.

**NOTE:** Drain fitting No. 1 is located at STA 210, WL 171, LBL 15.

EFFECTIVITY  
AKS ALL

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SUBTASK 34-11-00-170-042

- (6) Remove the pressure seal cap assembly from the hose located at STA 192, WL 225, LBL 34.

SUBTASK 34-11-00-170-043

- (7) Apply 15 psig (103 kPa) of dry filtered air to the left pitot system.

SUBTASK 34-11-00-170-044

- (8) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-045

- (9) Continue for three minutes or more.

SUBTASK 34-11-00-910-011

- (10) Stop blowing air.

SUBTASK 34-11-00-840-027

- (11) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-060

- (12) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-046

- (13) Remove the pressure seal cap assembly from the hose located at STA 200, WL 175, LBL 13.

SUBTASK 34-11-00-170-047

- (14) Apply 15 psig (103 kPa) of dry filtered air to the left pitot system.

SUBTASK 34-11-00-170-048

- (15) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-049

- (16) Continue for three minutes or more.

SUBTASK 34-11-00-910-012

- (17) Stop blowing air.

SUBTASK 34-11-00-840-029

- (18) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-061

- (19) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-080-004

- (20) Disconnect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, from drain fitting No. 1.

SUBTASK 34-11-00-420-019

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (21) Connect the pitot hose to the pitot probe located at STA 192, WL 225, LBL 34.

SUBTASK 34-11-00-420-020

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (22) Connect the pitot hose to the Air Data Module-Left Pitot located at STA 200, WL 175, LBL 13.

EFFECTIVITY  
AKS ALL

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I. Flush the Right Pitot System

SUBTASK 34-11-00-020-035

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (1) Disconnect the pitot hose from the pitot probe located at STA 192, WL 224, RBL 34.

SUBTASK 34-11-00-020-036

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (2) Disconnect the pitot hose from the Air Data Module-Right Pitot located at STA 200, WL 177, RBL 18.

SUBTASK 34-11-00-020-037

- (3) Install pressure seal cap assembly on the disconnected hoses.

SUBTASK 34-11-00-020-038

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSES ARE TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Temporarily attach the pitot hoses to prevent movement.

SUBTASK 34-11-00-480-005

**CAUTION:** DO NOT APPLY PRESSURE TO THE SYSTEM WHEN AN AIR DATA MODULE IS CONNECTED TO THE SYSTEM. IF YOU DO, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (5) Use a coupling, COM-1926 to connect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, to the right pitot hose at drain fitting No. 2.

**NOTE:** Drain fitting No. 2 is located at STA 204, WL 171, RBL 15.

SUBTASK 34-11-00-170-051

- (6) Remove the pressure seal cap assembly from the hose located at STA 192, WL 224, RBL 34.

SUBTASK 34-11-00-170-052

- (7) Apply 15 psig (103 kPa) of dry filtered air to the right pitot system.

SUBTASK 34-11-00-170-053

- (8) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-054

- (9) Continue for three minutes or more.

SUBTASK 34-11-00-910-013

- (10) Stop blowing air.

SUBTASK 34-11-00-840-031

- (11) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-062

- (12) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-170-055

- (13) Remove the pressure seal cap assembly from the hose located at STA 200, WL 177, RBL 18.

EFFECTIVITY  
AKS ALL

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SUBTASK 34-11-00-170-056

- (14) Apply 15 psig (103 kPa) of dry filtered air to the right pitot system.

SUBTASK 34-11-00-170-057

- (15) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-058

- (16) Continue for three minutes or more.

SUBTASK 34-11-00-910-014

- (17) Stop blowing air.

SUBTASK 34-11-00-840-033

- (18) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-063

- (19) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-080-005

- (20) Disconnect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, from drain fitting No. 2.

SUBTASK 34-11-00-420-023

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (21) Connect the pitot hose to the pitot probe located at STA 192, WL 224, RBL 34.

SUBTASK 34-11-00-420-024

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (22) Connect the pitot hose to the Air Data Module-Right Pitot located at STA 200, WL 177, RBL 18.

**J. Flush the Alternate Pitot System**

SUBTASK 34-11-00-020-041

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (1) Disconnect the pitot hose from the pitot probe located at STA 192, WL 213, RBL 34.

SUBTASK 34-11-00-020-042

- (2) Install a pressure seal cap assembly on the disconnected hose.

SUBTASK 34-11-00-020-043

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSE IS TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (3) Temporarily attach the pitot hose to prevent movement.



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SUBTASK 34-11-00-010-019

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSES ARE TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (4) Remove the integrated standby flight display. To remove the integrated standby flight display, do this task: Integrated Standby Flight Display Removal, TASK 34-24-02-000-801.

**AKS ALL**

SUBTASK 34-11-00-020-044

**WARNING:** YOU MUST MAKE SURE THAT THE DISCONNECTED HOSE IS TEMPORARILY ATTACHED TO PREVENT MOVEMENT. IF YOU DO NOT, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (5) Temporarily attach the pitot hose to prevent movement.

SUBTASK 34-11-00-480-006

**CAUTION:** DO NOT APPLY PRESSURE TO THE SYSTEM WHEN AN AIR DATA INSTRUMENT IS CONNECTED TO THE SYSTEM. IF YOU DO, DAMAGE TO THE AIR DATA INSTRUMENT CAN OCCUR.

- (6) Connect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, to the alternate pitot hose located at STA 192, WL 213, RBL 34.

SUBTASK 34-11-00-170-060

- (7) Apply 15 psig (103 kPa) of dry filtered air to the alternate pitot system.

SUBTASK 34-11-00-170-061

- (8) Make sure that you can feel air come out of the hose.

SUBTASK 34-11-00-170-062

- (9) Continue for three minutes or more.

SUBTASK 34-11-00-910-015

- (10) Stop blowing air.

SUBTASK 34-11-00-840-035

- (11) Put the system back to ambient pressure.

SUBTASK 34-11-00-020-064

- (12) Install a pressure seal cap assembly on the hose.

SUBTASK 34-11-00-080-006

- (13) Disconnect the dry filtered 0 to 150 psig dry filtered regulated air source, STD-3940, from the alternate pitot hose located at STA 192, WL 213, RBL 34.

SUBTASK 34-11-00-420-025

**CAUTION:** MAKE SURE THAT THE SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT A HOSE. IF YOU DO NOT, DAMAGE TO THE AIR DATA MODULE CAN OCCUR.

- (14) Connect the pitot hose to the pitot probe located at STA 192, WL 213, RBL 34.

EFFECTIVITY  
**AKS ALL**

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SUBTASK 34-11-00-410-015

- (15) Install the integrated standby flight display. To install the integrated standby flight display, do this task: Integrated Standby Flight Display Installation, TASK 34-24-02-400-801.

**AKS ALL**

**K. Leak Tests**

SUBTASK 34-11-00-790-124

- (1) Do these leak tests:
- (a) Do this task: Left Static System Low-range Leak Test, TASK 34-11-00-790-804
  - (b) Do this task: Right Static System Low-range Leak Test, TASK 34-11-00-790-806
  - (c) Do this task: Alternate Static System Low-range Leak Test, TASK 34-11-00-790-808
  - (d) Do this task: Left Pitot System Leak Test, TASK 34-11-00-790-810
  - (e) Do this task: Right Pitot System Leak Test, TASK 34-11-00-790-811
  - (f) Do this task: Alternate Pitot System Leak Test, TASK 34-11-00-790-812

**L. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-210-003

- (1) Do a visual inspection of the quick-disconnect fittings that you reconnected.
- (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

SUBTASK 34-11-00-860-018

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC

EFFECTIVITY	AKS ALL
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(Continued)

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

C      17      C01010      ADIRU RIGHT DC

SUBTASK 34-11-00-730-001

- (3) Do this task: Pitot System - Detailed Inspection of Drains, TASK 34-11-00-210-801.

———— END OF TASK ————

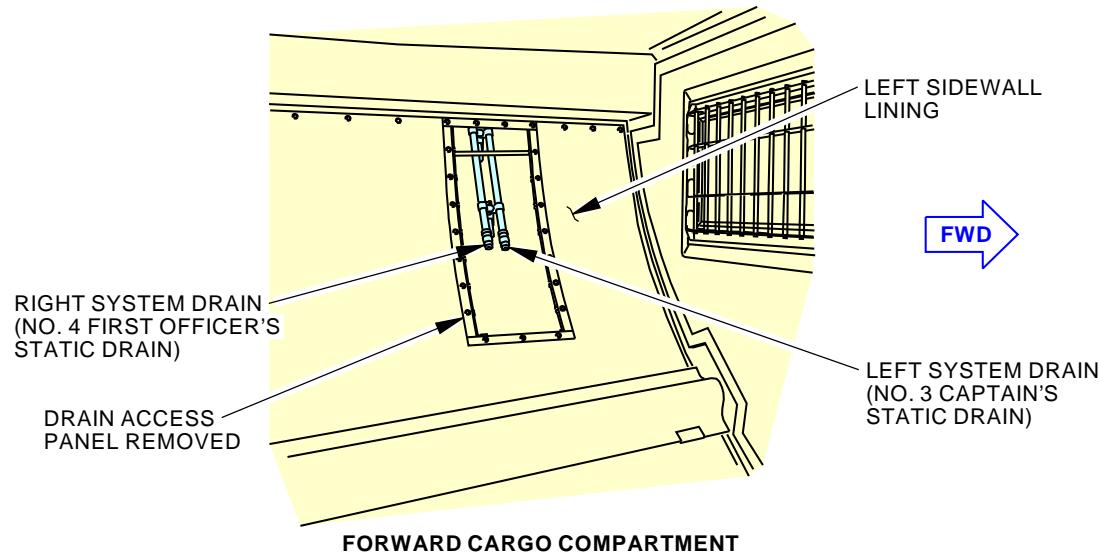
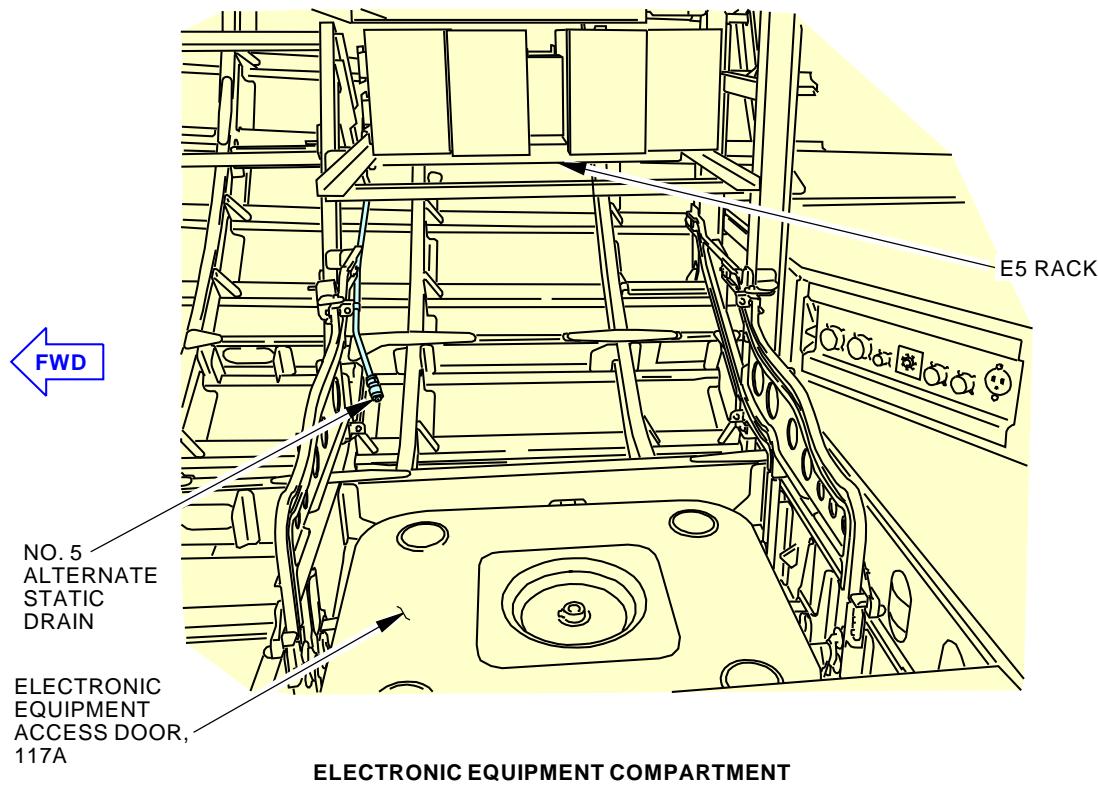
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**Static System Drains  
Figure 301/34-11-00-990-802**

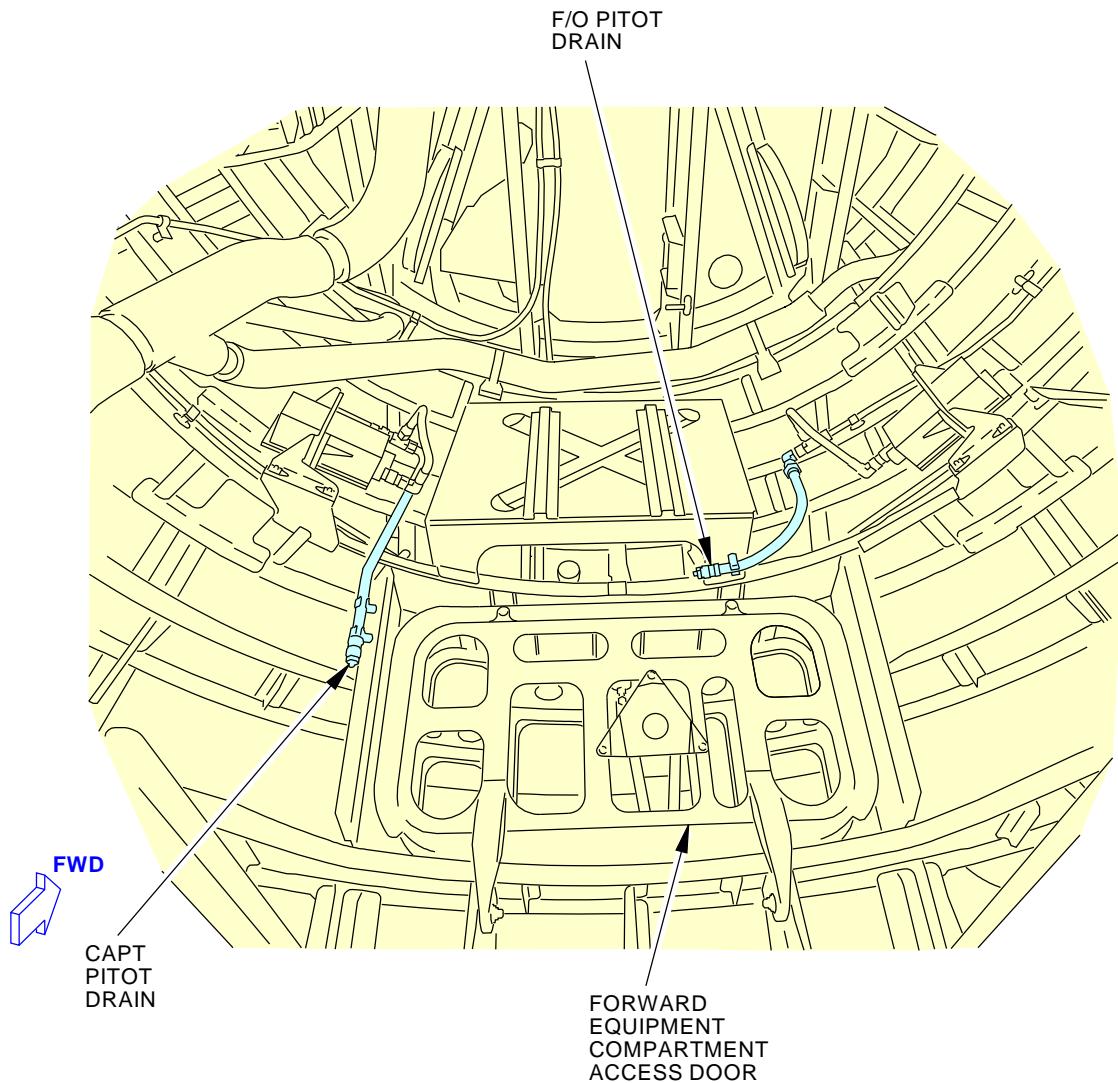
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FORWARD EQUIPMENT COMPARTMENT

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Pitot System Drains  
Figure 302/34-11-00-990-803

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**TASK 34-11-00-680-801**

**3. Pitot Static System - Draining**

**A. General**

- (1) There are five drain assemblies for the pitot static system.
  - (a) Captain's Pitot system drain (Figure 302).
  - (b) First Officer's Pitot system drain (Figure 302).
  - (c) Captain's Static system drain (Figure 301).
  - (d) First Officer's Static system drain (Figure 301).
  - (e) Alternate Static system drain (Figure 301).

**B. Standard Tools and Equipment**

- (1) Receptacle and/or absorbent cloth for collecting small amount of liquid from each drain.

**C. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
121	Forward Cargo Compartment - Left

**D. Procedure**

**SUBTASK 34-11-00-680-003**

- (1) Examine the drain assembly for moisture in the system.
- (2) Do these steps to drain the assembly, if moisture is visible.
  - (a) To remove the drain cap push up and twist to release the cap.
  - (b) Turn the drain cap over and put the raised part of the cap into the bottom of the drain body.
  - (c) Push the drain cap into the drain body to open the spring-loaded seal.
  - (d) Drain all of the fluid from the assembly onto the absorbent cloth or into the receptacle.
  - (e) Reinstall the drain cap on the drain assembly.
  - (f) Make sure that the drain cap is securely connected to the drain assembly.

————— END OF TASK ————

**TASK 34-11-00-210-801**

**4. Pitot System - Detailed Inspection of Drains**

(Figure 302)

NOTE: This procedure is a scheduled maintenance task.

**A. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
121	Forward Cargo Compartment - Left
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

EFFECTIVITY	AKS ALL
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**B. Procedure**

SUBTASK 34-11-00-210-001

- (1) Do a detailed inspection for moisture for the Captains and First Officers pitot system drains.

NOTE: The alternate pitot system does not have a drain fitting. The probe is at the lowest part of the system line so that moisture can drain from the probe.

SUBTASK 34-11-00-680-001

- (2) If you find moisture in at least one of the locations above, do this task: Pitot Static System - Draining, TASK 34-11-00-680-801.

———— END OF TASK ——

**TASK 34-11-00-210-802**

**5. Static System - Detailed Inspection of Drains**

(Figure 301)

NOTE: This procedure is a scheduled maintenance task.

**A. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
121	Forward Cargo Compartment - Left
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**B. Procedure**

SUBTASK 34-11-00-210-002

- (1) Do a detailed inspection for moisture in the static system drains for these systems:

- Alternate Static System
- First Officers Static System
- Captains Static System

SUBTASK 34-11-00-680-002

- (2) If you find moisture in at least one of the locations above, do this task: Pitot Static System - Draining, TASK 34-11-00-680-801.

———— END OF TASK ——

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AKS ALL

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STATIC AND TOTAL AIR PRESSURE SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) Left Static System Low-range Leak Test
  - (2) Right Static System Low-range Leak Test
  - (3) Alternate Static System Low-range Leak Test
  - (4) Left Pitot System Leak Test
  - (5) Right Pitot System Leak Test
  - (6) Alternate Pitot System Leak Test
  - (7) Left Static System Full-range Leak Test
  - (8) Right Static System Full-range Leak Test
  - (9) Alternate Static System Full-range Leak Test

**AKS ALL POST SB 737-34-2454**

- (10) Altimetry System Test

**AKS ALL**

**TASK 34-11-00-790-804**

**2. Left Static System Low-range Leak Test**

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) You must do the static system low-range leak test when you remove a fitting other than a quick disconnect. You must do the low-range leak test after you flush the pitot-static system.
- (2) You can use either the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

**B. References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)

**C. Tools/Equipment**

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

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Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984
COM-13545	Air Data Test Set (non RVSM) used for Leak Checks Part #: 1811HA-463 Supplier: 21844 Part #: 6005KTQA1-103 Supplier: 35012 Part #: MODEL 6150 Supplier: 0RDZ5 Opt Part #: ADC800 Supplier: 41364

**D. Consumable Materials**

Reference	Description	Specification
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

EFFECTIVITY  
AKS ALL

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F. Prepare for the Low-range Leak Test

SUBTASK 34-11-00-860-075

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-076

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-077

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-198

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-860-079

- (5) Do this task: Supply External Power, TASK 24-22-00-860-813.

G. Installation of Drain Coupling, 1QF2-3-64C (Recommended)

SUBTASK 34-11-00-480-092

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal these two primary static ports with vinyl adhesive Scotch Brand No.471 tape, G02219.
  - (a) The CAPTAIN static port on the right side of the fuselage.
  - (b) The CAPTAIN static port on the left side of the fuselage.

SUBTASK 34-11-00-480-093

- (2) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To do this, do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801

SUBTASK 34-11-00-480-094

- (3) Remove the cap from the No. 3 Captain's Static Drain.

**NOTE:** The No. 3 Captain's Static Drain is the forward drain, and is connected to the left static system.

SUBTASK 34-11-00-480-096

- (4) Install the coupling, COM-1927, on the No. 3 Captain's Static Drain.



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SUBTASK 34-11-00-480-210

- (5) Connect the air data model test set, COM-1914 or the Air Data Test Set (non RVSM), COM-13545 to the coupling, COM-1927.

**H. Installation of Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)**

SUBTASK 34-11-00-400-012

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the CAPTAIN static port, on the right side of the fuselage.

SUBTASK 34-11-00-480-211

- (2) Connect the air data test set to the static test adapter, COM-1921.

SUBTASK 34-11-00-400-013

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the CAPTAIN static port on the left side of the fuselage with Scotch Brand No.471 tape, G02219.

**I. Left Static System Low-range Leak Test**

SUBTASK 34-11-00-790-060

**CAUTION:** MAKE SURE THAT THE PRESSURE IN THE AIR DATA MODULE (ADM) IS NOT TOO HIGH. PRESSURE THAT IS MORE THAN 39.865 INCHES HG (1,350 MB) WILL CAUSE DAMAGE TO THE ADM.

- (1) Operate the air data test set to apply a vacuum to the static system equal to 5,000 feet of altitude above field elevation (ambient pressure minus  $5.25 \pm 0.25$  in. Hg).

SUBTASK 34-11-00-790-061

- (2) When the system reaches 5,000 feet above field elevation, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-062

- (3) Set the air data test set for the leak check.

SUBTASK 34-11-00-790-063

- (4) Make sure the altitude does not decrease more than 80 feet (0.07 in. Hg) in one minute.

SUBTASK 34-11-00-860-080

- (5) Put the system back to ambient pressure.

EFFECTIVITY  
AKS ALL

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**J. Removal of Drain Coupling, 1QF2-3-64C**

SUBTASK 34-11-00-080-114

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set from the coupling, COM-1927.

SUBTASK 34-11-00-080-115

- (2) Disconnect the coupling, COM-1927, from the No. 3 Captain's Static Drain.

SUBTASK 34-11-00-480-213

- (3) Install the cap on the No. 3 Captain's Static Drain.

SUBTASK 34-11-00-210-004

- (4) Do a visual inspection of the quick-disconnect fittings that you connected.

- (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

SUBTASK 34-11-00-480-214

- (5) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To do this, do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801

SUBTASK 34-11-00-080-116

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (6) Remove the Scotch Brand No.471 tape, G02219, from the static ports at these locations:
  - (a) The CAPTAIN static port on the right side of the fuselage.
  - (b) The CAPTAIN static port on the left side of the fuselage.

**K. Removal of Static Port Adapter, 33410LH-125-4**

SUBTASK 34-11-00-480-215

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set, from the static test adapter, COM-1921.

SUBTASK 34-11-00-480-216

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (2) Remove the static test adapter, COM-1921, from the CAPTAIN static port on the right side of the fuselage.

EFFECTIVITY
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SUBTASK 34-11-00-080-054

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF YOU DO NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (3) Remove the vinyl adhesive Scotch Brand No.471 tape, G02219 from the CAPTAIN static port on the left side of the fuselage.

**L. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-860-199

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

**F/O Electrical System Panel, P6-2**

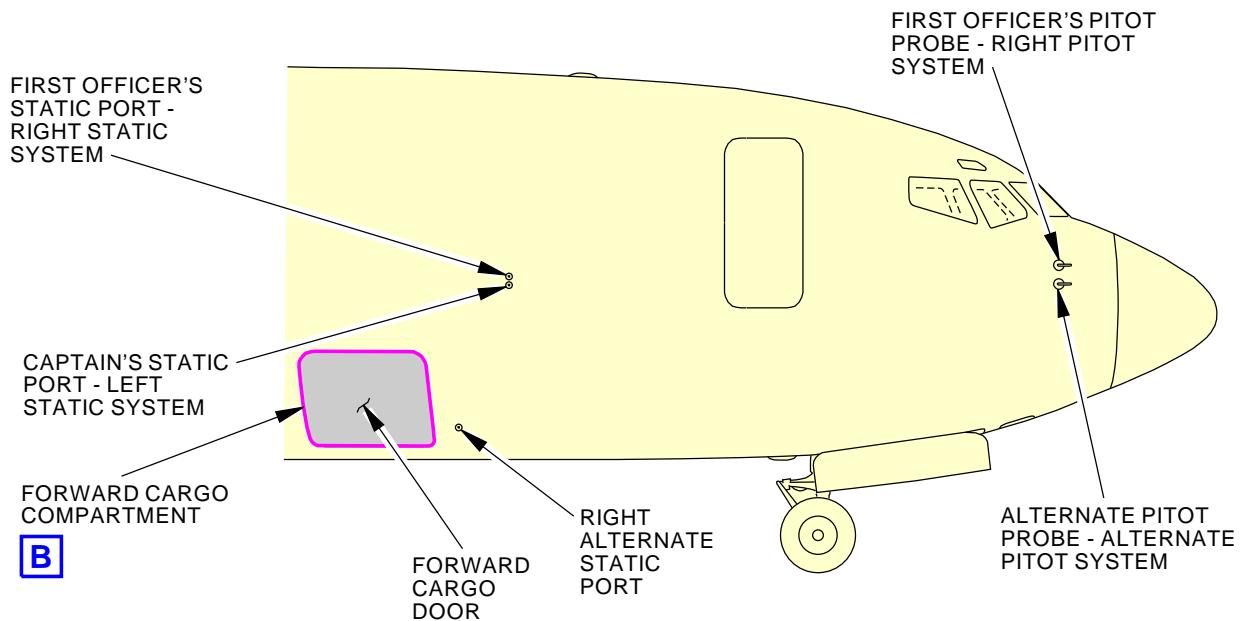
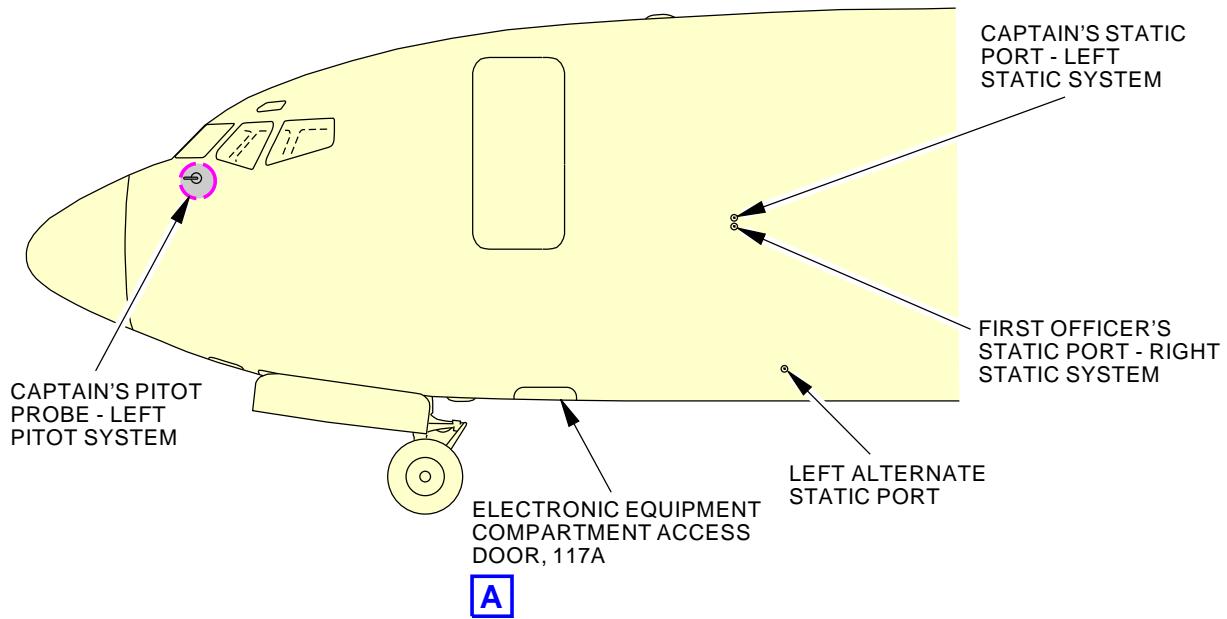
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

———— END OF TASK ————



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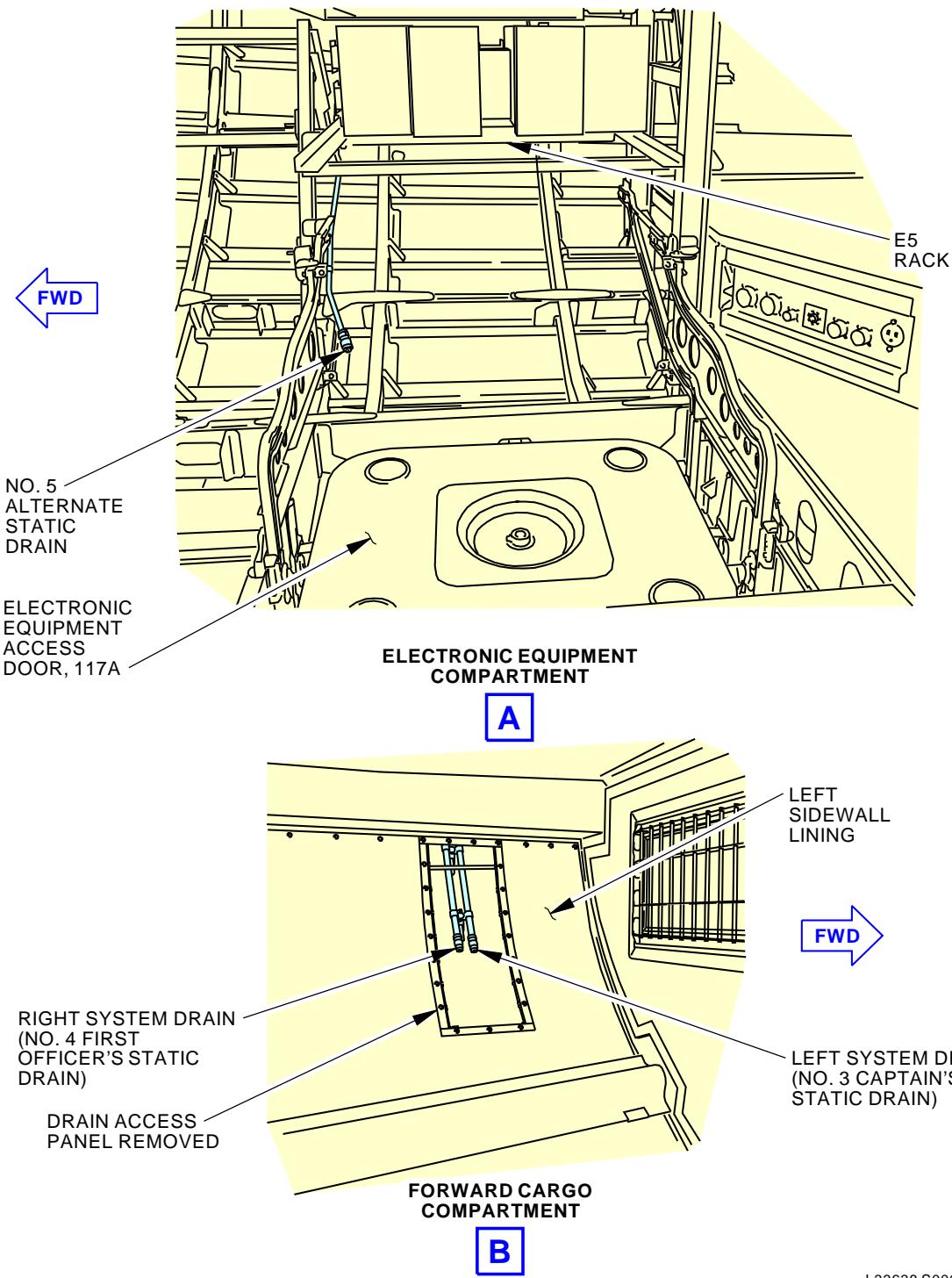
L33820 S0006576480\_V2

**Pitot Static Leakage Test**  
**Figure 501/34-11-00-990-801 (Sheet 1 of 2)**

EFFECTIVITY	
AKS ALL	

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L33638 S0006576481\_V2

**Pitot Static Leakage Test**  
**Figure 501/34-11-00-990-801 (Sheet 2 of 2)**

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**TASK 34-11-00-790-806**

**3. Right Static System Low-range Leak Test**

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) You must do the static system low-range leak test when you remove a fitting other than a quick disconnect. You must do the low-range leak test after you flush the pitot-static system.
- (2) You can use either the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

**B. References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)
24-22-00-860-814	Remove External Power (P/B 201)
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6



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(Continued)

<u>Reference</u>	<u>Description</u>
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984
COM-13545	Air Data Test Set (non RVSM) used for Leak Checks Part #: 1811HA-463 Supplier: 21844 Part #: 6005KTQA1-103 Supplier: 35012 Part #: MODEL 6150 Supplier: 0RDZ5 Opt Part #: ADC800 Supplier: 41364

**D. Consumable Materials**

<u>Reference</u>	<u>Description</u>	<u>Specification</u>
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

<u>Zone</u>	<u>Area</u>
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**F. Prepare for the Low-range Leak Test**

SUBTASK 34-11-00-860-091

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-092

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-093

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-218

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-860-095

- (5) Do this task: Supply External Power, TASK 24-22-00-860-813.



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G. Installation of the Drain Coupling, 1QF2-3-64C (Recommended)

SUBTASK 34-11-00-480-106

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal these two primary static ports with vinyl adhesive Scotch Brand No.471 tape, G02219.
  - (a) The FIRST OFFICER static port on the left side of the fuselage.
  - (b) The FIRST OFFICER static port on the right side of the fuselage.

SUBTASK 34-11-00-480-107

- (2) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To do this, do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801

SUBTASK 34-11-00-480-108

- (3) Remove the cap from the No. 4 First Officer's Static Drain.

**NOTE:** The No. 4 First Officer's Static Drain is the aft drain, and is connected to the right static system.

SUBTASK 34-11-00-400-014

- (4) Install the coupling, COM-1927, on the No. 4 First Officer's Static Drain.

SUBTASK 34-11-00-400-015

- (5) Connect the air data model test set, COM-1914 or the Air Data Test Set (non RVSM), COM-13545 to the coupling, COM-1927.

H. Installation of the Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)

SUBTASK 34-11-00-400-001

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the FIRST OFFICER static port on the right side of the fuselage.

SUBTASK 34-11-00-400-016

- (2) Connect the air data test set to the static test adapter, COM-1921.



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SUBTASK 34-11-00-400-017

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the FIRST OFFICER static port on the left side of the fuselage with Scotch Brand No.471 tape, G02219.

## I. Right Static System Low-range Leak Test

SUBTASK 34-11-00-790-068

**CAUTION:** MAKE SURE THAT THE PRESSURE IN THE AIR DATA MODULE (ADM) IS NOT TOO HIGH. PRESSURE THAT IS MORE THAN 39.865 INCHES HG (1,350 MB) WILL CAUSE DAMAGE TO THE ADM.

- (1) Operate the air data test set to apply a vacuum to the static system equal to 5,000 feet of altitude above field elevation (ambient pressure minus  $5.25 \pm 0.25$  in. Hg).

SUBTASK 34-11-00-790-069

- (2) When the system reaches 5,000 feet above field elevation, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-070

- (3) Set the air data test set for the leak check.

SUBTASK 34-11-00-790-071

- (4) Make sure the altitude does not decrease more than 80 feet (0.07 in. Hg) in one minute.

SUBTASK 34-11-00-860-096

- (5) Put the system back to ambient pressure.

## J. Removal of Drain Coupling, 1QF2-3-64C

SUBTASK 34-11-00-080-092

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set from the coupling, COM-1927.

SUBTASK 34-11-00-080-093

- (2) Disconnect the coupling, COM-1927, from the No. 4 First Officer's Static Drain.

SUBTASK 34-11-00-480-173

- (3) Install the cap on the No. 4 First Officer's Static Drain.

SUBTASK 34-11-00-210-005

- (4) Do a visual inspection of the quick-disconnect fittings that you connected.

- (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.



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SUBTASK 34-11-00-480-217

- (5) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To do this, do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801

SUBTASK 34-11-00-080-094

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (6) Remove the Scotch Brand No.471 tape, G02219, from the static ports at these locations:
  - (a) The FIRST OFFICER static port on the right side of the fuselage.
  - (b) The FIRST OFFICER static port on the left side of the fuselage.

### K. Removal of Static Port Adapter, 33410LH-125-4

SUBTASK 34-11-00-480-175

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set from the static test adapter, COM-1921.

SUBTASK 34-11-00-480-176

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (2) Remove the static test adapter, COM-1921, from the FIRST OFFICER static port on the right side of the fuselage.

SUBTASK 34-11-00-080-058

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (3) Remove the vinyl adhesive Scotch Brand No.471 tape, G02219 from the FIRST OFFICER static port on the left side of the fuselage.

### L. Put the Airplane Back to Its Usual Condition

SUBTASK 34-11-00-860-219

- (1) Do this task: Remove External Power, TASK 24-22-00-860-814.



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SUBTASK 34-11-00-860-220

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

———— END OF TASK ————

**TASK 34-11-00-790-808**

**4. Alternate Static System Low-range Leak Test**

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) You must do the static system low-range leak test when you remove a fitting other than a quick disconnect. You must do the low-range leak test after you flush the pitot-static system.
- (2) You can use either the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

**B. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-813	Supply External Power (P/B 201)
24-22-00-860-814	Remove External Power (P/B 201)

**C. Tools/Equipment**

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



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<b>Reference</b>	<b>Description</b>
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984
COM-13545	Air Data Test Set (non RVSM) used for Leak Checks Part #: 1811HA-463 Supplier: 21844 Part #: 6005KTQA1-103 Supplier: 35012 Part #: MODEL 6150 Supplier: 0RDZ5 Opt Part #: ADC800 Supplier: 41364

**D. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**F. Access Panels**

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



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**G. Prepare for the Low-range Leak Test**

SUBTASK 34-11-00-860-107

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-108

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-109

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-111

- (4) Do this task: Supply External Power, TASK 24-22-00-860-813.

**H. Installation of the Drain Coupling, 1QF2-3-64C (Recommended)**

SUBTASK 34-11-00-480-118

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal the two alternate static ports with vinyl adhesive Scotch Brand No.471 tape, G02219 at these locations:
  - (a) The ALTERNATE static port on the right side of the fuselage.
  - (b) The ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-11-00-480-119

- (2) Remove the cap from the No. 5 Alternate Static Drain, in the electronic equipment compartment, below the E-5 rack.

Get access to the drain in the electronic equipment compartment through this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-11-00-400-019

- (3) Install the coupling, COM-1927, on the No. 5 Alternate Static Drain.

SUBTASK 34-11-00-400-020

- (4) Connect the air data model test set, COM-1914 or the Air Data Test Set (non RVSM), COM-13545 to the coupling, COM-1927.



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I. Installation of the Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)

SUBTASK 34-11-00-400-004

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-11-00-400-021

- (2) Connect the air data test set to the static test adapter, COM-1921.

SUBTASK 34-11-00-400-022

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the ALTERNATE static port on the right side of the fuselage with Scotch Brand No.471 tape, G02219.

J. Alternate Static System Low-range Leak Test

SUBTASK 34-11-00-790-076

- (1) Operate the air data test set to apply a vacuum to the static system equal to 5,000 feet of altitude above field elevation (ambient pressure minus  $5.25 \pm 0.25$  in. Hg).

SUBTASK 34-11-00-790-077

- (2) When the system reaches 5,000 feet above field elevation, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-078

- (3) Set the air data test set for the leak check.

SUBTASK 34-11-00-790-079

- (4) Make sure the altitude does not decrease more than 80 feet (0.07 in. Hg) in one minute.

SUBTASK 34-11-00-860-112

- (5) Put the system back to ambient pressure.

K. Removal of Drain Coupling, 1QF2-3-64C

SUBTASK 34-11-00-080-096

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INDICATORS CAN OCCUR.

- (1) Disconnect the air data test set from the coupling, COM-1927.

SUBTASK 34-11-00-080-097

- (2) Disconnect the coupling, COM-1927, from the No. 5 Alternate Static Drain.

SUBTASK 34-11-00-480-179

- (3) Install the cap on the No. 5 Alternate Static Drain.

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SUBTASK 34-11-00-210-006

- (4) Do a visual inspection of the quick-disconnect fittings that you connected.
  - (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

SUBTASK 34-11-00-080-098

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (5) Remove the Scotch Brand No.471 tape, G02219, from the ALTERNATE static ports at these locations:
  - (a) The ALTERNATE static port on the right side of the fuselage.
  - (b) The ALTERNATE static port on the left side of the fuselage.

### L. Removal of Static Port Adapter, 33410LH-125-4

SUBTASK 34-11-00-480-181

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set from the static test adapter, COM-1921.

SUBTASK 34-11-00-480-182

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (2) Remove the static test adapter, COM-1921, from the ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-11-00-080-063

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (3) Remove the vinyl adhesive Scotch Brand No.471 tape, G02219 from the ALTERNATE static port on the right side of the fuselage.

### M. Put the Airplane Back to Its Usual Condition

SUBTASK 34-11-00-860-221

- (1) Do this task: Remove External Power, TASK 24-22-00-860-814.

— END OF TASK —

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**TASK 34-11-00-790-810**

**5. Left Pitot System Leak Test**

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance)  Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678)  Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-13545	Air Data Test Set (non RVSM) used for Leak Checks  Part #: 1811HA-463 Supplier: 21844 Part #: 6005KTQA1-103 Supplier: 35012 Part #: MODEL 6150 Supplier: 0RDZ5 Opt Part #: ADC800 Supplier: 41364

**C. Consumable Materials**

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A



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D. Location Zones

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

E. Prepare for the Leak Test

SUBTASK 34-11-00-860-123

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-124

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-125

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-195

- (4) Make sure that AOA vanes are set to zero degrees.

SUBTASK 34-11-00-860-126

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-2**

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-860-127

- (6) Do this task: Supply External Power, TASK 24-22-00-860-813.

**NOTE:** You must use external power to do this test. APU generator power will not work for this test. The APU uses data supplied by the ADIRU to adjust its performance.

SUBTASK 34-11-00-860-128

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT



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### F. Installation of Pitot Probe Adapter

SUBTASK 34-11-00-170-076

- (1) Prepare the pitot test adapter, COM-1916, before you install it on the pitot probe:

**CAUTION:** MAKE SURE THAT YOU FLUSH THE PITOT SYSTEM TEST ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. DAMAGE TO THE PROBE OR THE ADAPTER CAN OCCUR.

- (a) Flush the adapter with water.

**NOTE:** Use equal parts of water and ethylene glycol when the temperature is between 32°F and -40°F (-40°C to 0°C).

- (b) Blow dry filtered air through the adapter.

SUBTASK 34-11-00-160-002

**WARNING:** MAKE SURE THAT THE PITOT PROBE HEAT IS OFF. A HOT PROBE CAN CAUSE INJURIES TO PERSONNEL.

- (2) Wipe the pitot probe with a damp cotton wiper, G00034.

SUBTASK 34-11-00-480-130

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT FROM THE TEST HOSE. THE PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (3) Install the pitot test adapter, COM-1916 on the pitot probe on the left side of the forward fuselage.

SUBTASK 34-11-00-480-131

- (4) Connect the air data model test set, COM-1914 or the Air Data Test Set (non RVSM), COM-13545 to the pitot test adapter, COM-1916.

### G. Left Pitot System Leak Test

SUBTASK 34-11-00-790-084

**CAUTION:** MAKE SURE THAT THE PRESSURE IN THE AIR DATA MODULE (ADM) IS NOT TOO HIGH. PRESSURE THAT IS MORE THAN 39.865 INCHES HG (1,350 MB) WILL CAUSE DAMAGE TO THE ADM.

- (1) Operate the air data test set to apply pressure of  $4.53 \pm 0.16$  inches Hg (gauge), ( $2.22 \pm 0.08$  psig) ( $153.4 \pm 5.4$  mB), or  $300 \pm 5$  knots.

SUBTASK 34-11-00-790-085

- (2) When the test pressure is reached, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-086

- (3) Set the air data test set for the leak check.

SUBTASK 34-11-00-790-087

- (4) Make sure the pressure does not decrease more than 0.16 inches Hg (5.4 mB) (approximately 5 knots) in one minute.

SUBTASK 34-11-00-860-129

- (5) Put the system back to ambient pressure.

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H. Removal of Pitot Probe Adapter

SUBTASK 34-11-00-080-069

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set from the pitot test adapter, COM-1916.

SUBTASK 34-11-00-080-070

- (2) Remove the pitot test adapter, COM-1916 from the pitot probe.

I. Put the Airplane Back to Its Usual Condition

SUBTASK 34-11-00-860-131

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

————— END OF TASK ————

**TASK 34-11-00-790-811**

6. **Right Pitot System Leak Test**

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

A. References

<u>Reference</u>	<u>Title</u>
24-22-00-860-813	Supply External Power (P/B 201)

B. Tools/Equipment

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



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Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-13545	Air Data Test Set (non RVSM) used for Leak Checks Part #: 1811HA-463 Supplier: 21844 Part #: 6005KTQA1-103 Supplier: 35012 Part #: MODEL 6150 Supplier: 0RDZ5 Opt Part #: ADC800 Supplier: 41364

**C. Consumable Materials**

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

**D. Location Zones**

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

**E. Prepare for the Leak Test**

SUBTASK 34-11-00-860-133

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

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SUBTASK 34-11-00-860-134

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-135

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-196

- (4) Make sure the AOA vanes are set to zero degrees.

SUBTASK 34-11-00-860-136

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

## CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-00-860-137

- (6) Do this task: Supply External Power, TASK 24-22-00-860-813.

NOTE: You must use external power to do this test. APU generator power will not work for this test.

## F. Installation of Pitot Probe Adapter

SUBTASK 34-11-00-170-077

- (1) Prepare the pitot test adapter, COM-1916 before you install the adapter on the pitot probe:

**CAUTION:** MAKE SURE THAT YOU FLUSH THE PITOT SYSTEM TEST ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. DAMAGE TO THE PROBE OR THE ADAPTER CAN OCCUR.

- (a) Flush the adapter with water.

NOTE: Use equal parts of water and ethylene glycol when the temperature is between 32°F and -40°F (-40°C to 0°C).

- (b) Blow dry filtered air through the adapter.

SUBTASK 34-11-00-160-003

**WARNING:** MAKE SURE THAT THE PITOT PROBE HEAT IS OFF. A HOT PROBE CAN CAUSE INJURIES TO PERSONNEL.

- (2) Wipe the pitot probe with a damp cotton wiper, G00034.

SUBTASK 34-11-00-480-133

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT FROM THE TEST HOSE. THE PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (3) Install the pitot test adapter, COM-1916 on the upper pitot probe on the right side of the forward fuselage.

SUBTASK 34-11-00-480-134

- (4) Connect the air data model test set, COM-1914 or the Air Data Test Set (non RVSM), COM-13545 to the pitot test adapter, COM-1916.



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**G. Right Pitot System Leak Test**

SUBTASK 34-11-00-790-088

**CAUTION:** MAKE SURE THAT THE PRESSURE IN THE AIR DATA MODULE (ADM) IS NOT TOO HIGH. PRESSURE THAT IS MORE THAN 39.865 INCHES HG (1,350 MB) WILL CAUSE DAMAGE TO THE ADM.

- (1) Operate the air data test set to apply pressure of  $4.53 \pm 0.16$  inches Hg (gauge), ( $2.22 \pm 0.08$  psig) ( $153.4 \pm 5.4$  mB), or  $300 \pm 5$  knots.

SUBTASK 34-11-00-790-089

- (2) When the test pressure is reached, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-090

- (3) Set the air data test set for the leak check.

SUBTASK 34-11-00-790-091

- (4) Make sure the pressure does not decrease more than 0.16 inches Hg (5.4 mB) (approximately 5 knots) in one minute.

SUBTASK 34-11-00-860-139

- (5) Put the system back to ambient pressure.

**H. Removal of the Pitot Probe Adapter**

SUBTASK 34-11-00-080-071

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data test set from the pitot test adapter, COM-1916.

SUBTASK 34-11-00-080-072

- (2) Remove the pitot test adapter, COM-1916 from the pitot probe.

**I. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-860-141

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

———— END OF TASK ————

**TASK 34-11-00-790-812**

**7. Alternate Pitot System Leak Test**

(Figure 501)

NOTE: This procedure is a scheduled maintenance task.

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**A. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-813	Supply External Power (P/B 201)

**B. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-13545	Air Data Test Set (non RVSM) used for Leak Checks Part #: 1811HA-463 Supplier: 21844 Part #: 6005KTQA1-103 Supplier: 35012 Part #: MODEL 6150 Supplier: 0RDZ5 Opt Part #: ADC800 Supplier: 41364

**C. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right



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## E. Prepare for the Leak Test

SUBTASK 34-11-00-860-143

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-144

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-145

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-197

- (4) Make sure the AOA vanes are set to zero degrees.

SUBTASK 34-11-00-860-146

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

### CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-00-860-147

- (6) Do this task: Supply External Power, TASK 24-22-00-860-813.

NOTE: You must use external power to do this test. APU generator power will not work for this test.

## F. Installation of the Pitot Probe Adapter

SUBTASK 34-11-00-170-078

- (1) Prepare the pitot test adapter, COM-1916 before you install the adapter on the pitot probe:

**CAUTION:** MAKE SURE THAT YOU FLUSH THE PITOT SYSTEM TEST ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. DAMAGE TO THE PROBE OR THE ADAPTER CAN OCCUR.

- (a) Flush the adapter with water.

NOTE: Use equal parts of water and ethylene glycol when the temperature is between 32°F and -40°F (-40°C to 0°C).

- (b) Blow dry filtered air through the adapter.

SUBTASK 34-11-00-160-004

**WARNING:** MAKE SURE THAT THE PITOT PROBE HEAT IS OFF. A HOT PROBE CAN CAUSE INJURIES TO PERSONNEL.

- (2) Wipe the pitot probe with a damp cotton wiper, G00034.

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SUBTASK 34-11-00-480-136

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT FROM THE TEST HOSE. THE PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (3) Install the pitot test adapter, COM-1916 on the lower pitot probe on the right side of the forward fuselage.

SUBTASK 34-11-00-480-137

- (4) Connect the air data model test set, COM-1914 or the Air Data Test Set (non RVSM), COM-13545 to the pitot test adapter, COM-1916.

## G. Alternate Pitot System Leak Test

SUBTASK 34-11-00-790-092

- (1) Operate the air data test set to apply pressure of  $4.53 \pm 0.16$  inches Hg (gauge), ( $2.22 \pm 0.08$  psig) ( $153.4 \pm 5.4$  mB), or  $300 \pm 5$  knots.

SUBTASK 34-11-00-790-093

- (2) When the test pressure is reached, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-094

- (3) Set the air data test set for the leak check.

SUBTASK 34-11-00-790-095

- (4) Make sure the pressure does not decrease more than 0.16 inches Hg (5.4 mB) (approximately 5 knots) in one minute.

SUBTASK 34-11-00-860-149

- (5) Put the system back to ambient pressure.

## H. Removal of the Pitot Probe Adapter

SUBTASK 34-11-00-080-073

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INDICATORS CAN OCCUR.

- (1) Disconnect the air data test set from the pitot test adapter, COM-1916.

SUBTASK 34-11-00-080-074

- (2) Remove the pitot test adapter, COM-1916 from the pitot probe.

## I. Put the Airplane Back to Its Usual Condition

SUBTASK 34-11-00-860-151

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

### CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

— END OF TASK —

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**TASK 34-11-00-790-813**

**8. Left Static System Full-range Leak Test**

(Figure 501)

**A. General**

- (1) The static system full-range leak test is not required. However, leaks are easier to detect with the higher pressure.
- (2) You can use either the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

**B. References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984

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D. Consumable Materials

Reference	Description	Specification
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

E. Location Zones

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

F. Prepare for the Leak Test

SUBTASK 34-11-00-860-153

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-154

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-155

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-201

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

**F/O Electrical System Panel, P6-2**

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-860-157

- (5) Do this task: Supply External Power, TASK 24-22-00-860-813.

**NOTE:** You must use external power to do this test. APU generator power will not work for this test.

G. Installation of the Drain Coupling, 1QF2-3-64C (Recommended)

SUBTASK 34-11-00-400-024

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal these static ports on the with Scotch Brand No.471 tape, G02219:

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- (a) The CAPTAIN static port on the right side of the fuselage.
- (b) The CAPTAIN static port on the left side of the fuselage.

SUBTASK 34-11-00-480-141

- (2) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To open it, do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801.

SUBTASK 34-11-00-480-142

- (3) Remove the cap from the No. 3 Captain's Static Drain.

NOTE: The No. 3 Captain's Static Drain is the forward drain and is connected to the left static system.

SUBTASK 34-11-00-400-007

- (4) Install the coupling, COM-1927, on the No. 3 Captain's Static Drain.

SUBTASK 34-11-00-400-025

- (5) Connect the air data model test set, COM-1914 to the coupling, COM-1927.

## H. Installation of the Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)

SUBTASK 34-11-00-400-008

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the CAPTAIN static port, on the right side of the fuselage.

SUBTASK 34-11-00-400-026

- (2) Connect the air data model test set, COM-1914 to the static test adapter, COM-1921.

SUBTASK 34-11-00-400-027

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the CAPTAIN static port on the left side of the fuselage with Scotch Brand No.471 tape, G02219.

## I. Left Static System Full-range Leak Test

SUBTASK 34-11-00-790-101

**CAUTION:** DO NOT MAKE THE STATIC PRESSURE LESS THAN 4 IN. HG. (135.5 MILLIBARS). STATIC PRESSURE LESS THAN 4 IN. HG. (135.5 MILLIBARS) CAN CAUSE DAMAGE TO THE AIR DATA MODULE.

- (1) Use the air data model test set, COM-1914 to supply a vacuum of 18.82 in. HG. (637.3 millibars), but do not make the static pressure less than 4.3 in. HG. (145.6 millibars) absolute.
  - (a) When you apply pressure to the static system, make sure that the rate is less than 5,000 feet for each minute.

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SUBTASK 34-11-00-790-102

- (2) When the system reaches 25,000 feet, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-103

- (3) Set the air data model test set, COM-1914 for the leak check.

SUBTASK 34-11-00-790-104

- (4) Make sure the pressure does not decrease more than 0.20 inches Hg or 6.77 mB (approximately 400 feet) in one minute.

SUBTASK 34-11-00-860-158

- (5) Put the system back to ambient pressure.
  - (a) When you release pressure from the static system, make sure that the rate is less than 5,000 feet for each minute.

### J. Removal of Drain Coupling, 1QF2-3-64C

SUBTASK 34-11-00-080-100

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the coupling, COM-1927.

SUBTASK 34-11-00-080-101

- (2) Disconnect the coupling, COM-1927, from the No. 3 Captains Static Drain.

SUBTASK 34-11-00-480-185

- (3) Install the cap on the No. 3 Captain's Static Drain.

SUBTASK 34-11-00-210-007

- (4) Do a visual inspection of the quick-disconnect fittings that you connected.
  - (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

SUBTASK 34-11-00-480-218

- (5) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To close it, do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801.

SUBTASK 34-11-00-480-223

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (6) Remove the Scotch Brand No.471 tape, G02219, from the static ports at these locations:
  - (a) The CAPTAIN static port on the right side of the fuselage.
  - (b) The CAPTAIN static port on the left side of the fuselage.



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K. Removal of Static Port Adapter, 33410LH-125-4

SUBTASK 34-11-00-480-187

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the static test adapter, COM-1921.

SUBTASK 34-11-00-480-188

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (2) Remove the static test adapter, COM-1921, from the CAPTAIN static port on the right side of the fuselage.

SUBTASK 34-11-00-480-189

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (3) Remove the Scotch Brand No.471 tape, G02219, from the CAPTAIN static port on the left side of the fuselage.

L. Put the Airplane Back to Its Usual Condition

SUBTASK 34-11-00-860-202

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

**F/O Electrical System Panel, P6-2**

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

————— END OF TASK ————

**TASK 34-11-00-790-814**

9. Right Static System Full-range Leak Test

(Figure 501)

A. General

- (1) The static system full-range leak test is not required. However, leaks are easier to detect with the higher pressure.
- (2) You can use either the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

B. References

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)

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Reference	Title
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984

**D. Consumable Materials**

Reference	Description	Specification
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

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F. Prepare for the Leak Test

SUBTASK 34-11-00-860-161

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-162

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-163

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-165

- (4) Do this task: Supply External Power, TASK 24-22-00-860-813.

**NOTE:** You must use external power to do this test. APU generator power will not work for this test.

G. Installation of Drain Coupling, 1QF2-3-64C (Recommended)

SUBTASK 34-11-00-400-010

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal these static ports with vinyl adhesive Scotch Brand No.471 tape, G02219:
  - (a) The FIRST OFFICER static port on the left side of the fuselage.
  - (b) The FIRST OFFICER static port on the right side of the fuselage.

SUBTASK 34-11-00-400-028

- (2) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To open it, do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801.

SUBTASK 34-11-00-400-029

- (3) Remove the cap from the No. 4 First Officer's Static Drain.

**NOTE:** The No. 4 First Officer's Static Drain is the aft drain, and is connected to the right static system.

SUBTASK 34-11-00-400-030

- (4) Install the coupling, COM-1927, on the No. 4 First Officer's Static Drain.

SUBTASK 34-11-00-400-031

- (5) Connect the air data model test set, COM-1914 to the coupling, COM-1927.



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**H. Installation of the Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)**

SUBTASK 34-11-00-400-011

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the FIRST OFFICER static port on the right side of the fuselage.

SUBTASK 34-11-00-400-032

- (2) Connect the air data model test set, COM-1914 to the static test adapter, COM-1921.

SUBTASK 34-11-00-400-033

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the FIRST OFFICER static port on the left side of the fuselage with vinyl adhesive Scotch Brand No.471 tape, G02219.

**I. Right Static System Full-range Leak Test**

SUBTASK 34-11-00-790-105

**CAUTION:** DO NOT MAKE THE STATIC PRESSURE LESS THAN 4 IN. HG. (135.5 MILLIBARS). STATIC PRESSURE LESS THAN 4 IN. HG. (135.5 MILLIBARS) CAN CAUSE DAMAGE TO THE AIR DATA MODULE.

- (1) Use the air data model test set, COM-1914 to supply a vacuum of 18.82 in. Hg. (637.3 millibars), but do not make the static pressure less than 4.3 in. Hg. (145.6 millibars) absolute.
  - (a) When you apply pressure to the static system, make sure that the rate is less than 5,000 feet for each minute.

SUBTASK 34-11-00-790-106

- (2) When the system reaches 25,000 feet, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-107

- (3) Set the air data model test set, COM-1914 for the leak check.

SUBTASK 34-11-00-790-108

- (4) Make sure the pressure does not decrease more than 0.20 inches Hg or 6.77 mB (approximately 400 feet) in one minute.

SUBTASK 34-11-00-860-166

- (5) Put the system back to ambient pressure.

- (a) When you release pressure from the static system, make sure that the rate is less than 5,000 feet for each minute.

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J. Removal of Drain Coupling, 1QF2-3-64C

SUBTASK 34-11-00-080-104

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the coupling, COM-1927.

SUBTASK 34-11-00-080-105

- (2) Disconnect the coupling, COM-1927, from the No. 4 First Officer's Static Drain.

SUBTASK 34-11-00-480-197

- (3) Install the cap on the No. 4 First Officer's Static Drain.

SUBTASK 34-11-00-210-008

- (4) Do a visual inspection of the quick-disconnect fittings that you connected.

- (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

SUBTASK 34-11-00-480-220

- (5) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. To close it, do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801.

SUBTASK 34-11-00-080-106

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (6) Remove the Scotch Brand No.471 tape, G02219, from the static ports at these locations:
  - (a) The FIRST OFFICER static port on the right side of the fuselage.
  - (b) The FIRST OFFICER static port on the left side of the fuselage.

K. Removal of Static Port Adapter, 33410LH-125-4

SUBTASK 34-11-00-480-199

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the static test adapter, COM-1921.

SUBTASK 34-11-00-080-107

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (2) Remove the static test adapter, COM-1921, from the FIRST OFFICER static port on the right side of the fuselage.

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SUBTASK 34-11-00-080-108

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (3) Remove the Scotch Brand No.471 tape, G02219, from the FIRST OFFICER static port on the left side of the fuselage.

L. Put the Airplane Back to Its Usual Condition

———— END OF TASK ————

**TASK 34-11-00-790-815**

**10. Alternate Static System Full-range Leak Test**

(Figure 501)

**A. General**

- (1) The static system full-range leak test is not required. However, leaks are easier to detect with the higher pressure.
- (2) You can use either the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

**B. References**

Reference	Title
24-22-00-860-813	Supply External Power (P/B 201)

**C. Tools/Equipment**

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

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<b>Reference</b>	<b>Description</b>
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984

**D. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

<b>Zone</b>	<b>Area</b>
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right



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F. Prepare for the Leak Test

SUBTASK 34-11-00-860-169

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. THESE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE VICINITY TO EXECUTE UNNECESSARY EVASIVE MANEUVERS.

- (1) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-11-00-860-170

- (2) Make sure that the Autopilot Flight Director System is off.

SUBTASK 34-11-00-860-171

- (3) Make sure that the IRS R and IRS L switches on the IRS Mode Select Unit, located on the P5-69 panel, are in the off position.

SUBTASK 34-11-00-860-172

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-00-860-173

- (5) Do this task: Supply External Power, TASK 24-22-00-860-813.

NOTE: You must use external power to do this test. APU generator power will not work for this test.

G. Installation of Drain Coupling, 1QF2-3-64C (Recommended)

SUBTASK 34-11-00-480-153

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal these static ports with vinyl adhesive Scotch Brand No.471 tape, G02219:

- (a) The ALTERNATE static port on the right side of the fuselage.
  - (b) The ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-11-00-480-154

- (2) Remove the cap from the No. 5 Alternate Static Drain, in the electronic equipment compartment, below the E-5 rack.

SUBTASK 34-11-00-480-155

- (3) Install the coupling, COM-1927, on the No. 5 Alternate Static Drain.

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SUBTASK 34-11-00-480-221

- (4) Connect the air data model test set, COM-1914 to the coupling, COM-1927.

### H. Installation of Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)

SUBTASK 34-11-00-400-034

**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-11-00-480-222

- (2) Connect the air data model test set, COM-1914 to the static test adapter, COM-1921.

SUBTASK 34-11-00-400-035

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the ALTERNATE static port on the right side of the fuselage with Scotch Brand No.471 tape, G02219.

### I. Installation of the Pitot Probe Adapter

SUBTASK 34-11-00-170-080

- (1) Prepare the pitot test adapter, COM-1916 before you install the adapter on the pitot probe.

**CAUTION:** MAKE SURE THAT YOU FLUSH THE PITOT SYSTEM TEST ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. DAMAGE TO THE PROBE OR THE ADAPTER CAN OCCUR.

- (a) Flush the adapter with water.

**NOTE:** Use equal parts of water and ethylene glycol when the temperature is between 32°F and -40°F (-40°C to 0°C).

- (b) Blow dry filtered air through the adapter.

SUBTASK 34-11-00-480-157

**WARNING:** MAKE SURE THAT THE PITOT PROBE HEAT IS OFF. A HOT PROBE CAN CAUSE INJURIES TO PERSONNEL.

- (2) Wipe the pitot probe with a damp cotton wiper, G00034.

SUBTASK 34-11-00-480-158

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT FROM THE TEST HOSE. THE PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (3) Install the pitot test adapter, COM-1916, on the lower pitot probe on the right side of the forward fuselage.

SUBTASK 34-11-00-480-159

- (4) Connect the air data model test set, COM-1914 to the pitot test adapter, COM-1916.

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J. Alternate Static System Full-range Leak Test

SUBTASK 34-11-00-790-109

**CAUTION:** KEEP THE RATE OF STATIC CHANGE BELOW 5000 FEET PER MINUTE, AND KEEP THE DIFFERENTIAL PRESSURE BETWEEN THE PITOT AND STATIC SYSTEM LESS THAN 10 INCHES OF MERCURY (339 MILLIBARS). FAILURE TO DO THIS COULD CAUSE DAMAGE TO THE INDICATORS.

- (1) Operate the air data model test set, COM-1914 to apply vacuum to the alternate pitot system to keep the pressure difference between the pitot and static systems less than 10 inches Hg (339 mB).

SUBTASK 34-11-00-790-123

**CAUTION:** DO NOT MAKE THE STATIC PRESSURE LESS THAN 4 IN. HG. (135.5 MILLIBARS). STATIC PRESSURE LESS THAN 4 IN. HG. (135.5 MILLIBARS) CAN CAUSE DAMAGE TO THE AIR DATA MODULE.

- (2) Use the air data model test set, COM-1914 to supply a vacuum of 18.82 in. Hg. (637.3 millibars), but do not make the static pressure less than 4.3 in. Hg. (145.6 millibars) absolute.
  - (a) When you apply pressure to the static system, make sure that the rate is less than 5,000 feet for each minute.

SUBTASK 34-11-00-790-110

- (3) When the system reaches 25,000 feet, stop for one minute to allow the system to stabilize.

SUBTASK 34-11-00-790-111

- (4) Set the air data model test set, COM-1914 for the leak check.

SUBTASK 34-11-00-790-112

- (5) Make sure the pressure does not decrease more than 0.20 inches Hg or 6.77 mB (approximately 400 feet) in one minute.

SUBTASK 34-11-00-860-174

- (6) Put the system back to ambient pressure.
  - (a) When you release pressure from the static system, make sure that the rate is less than 5,000 feet for each minute.

K. Removal of Drain Coupling, 1QF2-3-64C

SUBTASK 34-11-00-080-082

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INDICATORS CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the coupling, COM-1927.

SUBTASK 34-11-00-080-117

- (2) Disconnect the coupling, COM-1927 from the No. 5 Alternate Static Drain.

SUBTASK 34-11-00-080-083

- (3) Install the cap on the No. 5 Alternate Static Drain.

SUBTASK 34-11-00-210-009

- (4) Do a visual inspection of the quick-disconnect fittings that you connected.

- (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

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SUBTASK 34-11-00-080-086

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (5) Remove the vinyl adhesive Scotch Brand No.471 tape, G02219 from the alternate static ports at these locations:
  - (a) The ALTERNATE static port on the right side of the fuselage.
  - (b) The ALTERNATE static port on the left side of the fuselage.

### L. Removal of Static Port Adapter, 33410LH-125-4

SUBTASK 34-11-00-480-203

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE AIR DATA MODULES CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the static test adapter, COM-1921.

SUBTASK 34-11-00-480-204

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (2) Remove the static test adapter, COM-1921, from the ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-11-00-480-205

**WARNING:** MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. IF YOU DO NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (3) Remove the Scotch Brand No.471 tape, G02219, from the ALTERNATE static port on the right side of the fuselage.

### M. Removal of the Probe Adapters

SUBTASK 34-11-00-080-110

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INDICATORS CAN OCCUR.

- (1) Disconnect the air data model test set, COM-1914 from the pitot test adapter, COM-1916.

SUBTASK 34-11-00-080-118

- (2) Remove the pitot test adapter, COM-1916, from the auxiliary pitot probe.



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**N. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-860-175

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

— END OF TASK —

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**TASK 34-11-00-780-802**

**11. Altimetry System Test**

(Figure 502)

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) This task gives instructions to test the altimetry system for correct operation.
- (2) You can use the drain coupling or the static port adapter to pressurize the static system. The drain coupling is recommended, but the static port adapter can be used if the drain coupling is not available.

**B. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-813	Supply External Power (P/B 201)
24-22-00-860-814	Remove External Power (P/B 201)
25-52-06 P/B 401	CARGO COMPARTMENT SIDEWALL LININGS - REMOVAL/INSTALLATION
34-21-04 P/B 401	AIR DATA MODULE - REMOVAL/INSTALLATION

**C. Tools/Equipment**

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



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| AKS ALL POST SB 737-34-2454 (Continued)

Reference	Description
COM-1562	Analyzer - Data Bus, ARINC 429 Part #: 01-1001-05 Supplier: 0Z3C6 Part #: 01-1001-12 Supplier: 0Z3C6 Part #: 403557 Supplier: \$1272 Part #: 800-0630 Supplier: 1JSZ6 Part #: DT400H Supplier: 0Z3C6 Part #: TYPE 030/026 Supplier: \$0494 Part #: UA1410 Supplier: 0H231 Opt Part #: 01-1001-10 Supplier: 0Z3C6 Opt Part #: 01-1404-00 Supplier: 41364 Opt Part #: 429EBP Supplier: 41364 Opt Part #: 429EX Supplier: 41364 Opt Part #: 702125-01 Supplier: \$1272 Opt Part #: MODEL 429HBA Supplier: 5J927
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1926	Coupling - Quick Disconnect, Pitot System Drain Line Part #: 1QF2-2-64A Supplier: 24984
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984

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AKS ALL POST SB 737-34-2454 (Continued)

(Continued)

Reference	Description
SPL-3896	Box - Breakout, Multipurpose, 100/124 pin Part #: C22005-22 Supplier: 81205 Opt Part #: C22005-1 Supplier: 81205

**D. Consumable Materials**

Reference	Description	Specification
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**E. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**F. Prepare for the System Test**

SUBTASK 34-11-00-860-223

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT

**F/O Electrical System Panel, P6-2**

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-11-00-860-222

**CAUTION:** MAKE SURE YOU DO NOT SUPPLY ELECTRICAL POWER TO THE PITOT PROBE HEATER. IF YOU DO, YOU CAN DAMAGE THE PITOT PROBE.

- (2) Do this task: Supply External Power, TASK 24-22-00-860-813.

SUBTASK 34-11-00-860-225

- (3) Follow these maintenance practices for the altimetry system test:

- Do not connect or disconnect the test equipment while you have pressure in the pitot-static system.
- Make sure that the test equipment, pitot system and static systems are clean and free of contamination.
- Make sure that there are no leaks in the test equipment.
- Make sure that the difference between the static pressure and pitot pressure line is not larger than 10.9 inches Hg.

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- (e) Keep the static pressure in the range of 3.26 to 33.31 inches Hg.
- (f) Keep the static system pressure less or equal to the absolute pressure applied to the pitot system.
- (g) Keep the absolute pressure applied to the static system less or equal to ambient pressure.
- (h) Install flow restrictors between the cutoff valve and pitot and static systems.
- (i) During adjustment of static pressure, make sure that the rate of change of altitude is less than 5,000 feet per minute.
- (j) Make sure that the Autopilot Flight Director System is OFF during the test.
- (k) Supply electrical power to the Air Data Inertial Reference Unit (ADIRS) before you make the Static or Total pressure connection.

**G. Captain (CAPT) Altimetry System Test Set Installation**

SUBTASK 34-11-00-860-226

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN THE STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE TCAS TARGETS. AIR TRAFFIC IN THE AREA WILL CHANGE DIRECTION QUICKLY TO GO AWAY FROM THESE TARGETS. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Set the ATC mode switch on the P8-29 ATC control panel, to STANDBY.

SUBTASK 34-11-00-480-247

**CAUTION:** SUPPORT THE TEST HOSES AND THE ADAPTER SO THEY ADD NO WEIGHT ON THE PITOT PROBES. FAILURE TO DO SO COULD CAUSE THE PITOT PROBES TO NOT BE ALIGNED AND TO BE DAMAGED.

- (2) Connect the air data test set to the CAPT pitot and static systems with one test setup from these options:

**Option 1: Static Adapter Test Setup**

Test Setup		
Figure	Description	More Data
Figure 502 (Sheet 1)	Supply pitot and static pressure from air data test set to Left Pitot and Left Static Air Data Module (ADM)	
Figure 502 (Sheet 2)	Supply static pressure from air data test set to Left Pitot and Left Static ADM	
Figure 502 (Sheet 9)	Supply Pitot and static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM	(a)
Figure 502 (Sheet 10)	Supply static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM	(a)

(a) CAPT altimetry system test and F/O altimetry system test can be run at the same time when this setup is used.

- (a) Install the pitot test adapter, COM-1916 on the CAPT pitot probe.

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**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (b) Install the static test adapter, COM-1921 on the CAPT static port.
- (c) Connect the air data model test set, COM-1914 to the pitot test adapter, COM-1916 and static test adapter, COM-1921.

**WARNING:** WHEN THE STATIC PORTS HAVE COVERS ON THEM, MAKE SURE THAT A PERSON ON THE GROUND CAN SEE THE COVERS. ALSO MAKE SURE YOU ATTACH A TAG TO THE LEFT CONTROL WHEEL IN THE FLIGHT COMPARTMENT AS A REMINDER THAT THE STATIC PORTS HAVE COVERS ON THEM. IF THE COVERS ARE NOT REMOVED FROM THE STATIC PORTS, INCORRECT AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS CAN OCCUR. THIS CAN CAUSE DANGEROUS FLIGHT CONDITIONS.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (d) Seal the remaining CAPT static ports with Scotch Brand No.471 tape, G02219.

**Option 2: System Drain Test Setup**

Test Setup		
Figure	Description	More Data
Figure 502 (Sheet 3)	Supply pitot and static pressure from air data test set to Left Pitot and Left Static ADM through system drain fittings	
Figure 502 (Sheet 4)	Supply static pressure from air data test set to Left Pitot and Left Static ADM through system drain fittings	
Figure 502 (Sheet 11)	Supply pitot and static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM through system drain fittings	(a)
Figure 502 (Sheet 12)	Supply static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM through system drain fittings	(a)

(a) CAPT altimetry system test and F/O altimetry system test can be run at the same time when this setup is used.

- (e) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. Refer to CARGO COMPARTMENT SIDEWALL LININGS - REMOVAL/INSTALLATION, PAGEBLOCK 25-52-06/401.
- (f) Remove the caps on the CAPT pitot and static system drain fittings.
- (g) Install the quick-disconnect coupling, COM-1926, on the CAPT pitot system drain fitting.
- (h) Install the quick-disconnect coupling, COM-1927, on the CAPT static system drain fitting.
- (i) Install the pitot test adapter, COM-1916 on the CAPT pitot probe.
- (j) Install caps on the pitot test adapter, COM-1916.

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**WARNING:** WHEN THE STATIC PORTS HAVE COVERS ON THEM, MAKE SURE THAT A PERSON ON THE GROUND CAN SEE THE COVERS. ALSO MAKE SURE YOU ATTACH A TAG TO THE LEFT CONTROL WHEEL IN THE FLIGHT COMPARTMENT AS A REMINDER THAT THE STATIC PORTS HAVE COVERS ON THEM. IF THE COVERS ARE NOT REMOVED FROM THE STATIC PORTS, INCORRECT AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS CAN OCCUR. THIS CAN CAUSE DANGEROUS FLIGHT CONDITIONS.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (k) Seal the remaining CAPT static ports with, Scotch Brand No.471 tape, G02219.
- (l) Connect the air data model test set, COM-1914 to the quick-disconnect couplings, coupling, COM-1926 and coupling, COM-1927.

#### H. First Officer (F/O) Altimetry System Test Set Installation

SUBTASK 34-11-00-860-227

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN THE STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE TCAS TARGETS. AIR TRAFFIC IN THE AREA WILL CHANGE DIRECTION QUICKLY TO GO AWAY FROM THESE TARGETS. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

- (1) Set the ATC mode switch on the P8-29 ATC control panel, to STANDBY.

SUBTASK 34-11-00-780-008

**CAUTION:** SUPPORT THE TEST HOSES AND THE ADAPTER SO THEY ADD NO WEIGHT ON THE PITOT PROBES. FAILURE TO DO SO COULD CAUSE THE PITOT PROBES TO NOT BE ALIGNED AND TO BE DAMAGED.

- (2) Connect the air data model test set, COM-1914 to the F/O pitot and static systems with one test setup from these options:

##### Option 3: Static Adapter Test Setup

Test Setup		
Figure	Description	More Data
Figure 502 (Sheet 5)	Supply pitot and static pressure from air data test set to Right Pitot and Right Static Air Data Module (ADM)	
Figure 502 (Sheet 6)	Supply static pressure from air data test set to Right Pitot and Right Static ADM	
Figure 502 (Sheet 9)	Supply Pitot and static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM	(a)
Figure 502 (Sheet 10)	Supply static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM	(a)

(a) CAPT altimetry system test and F/O altimetry system test can be run at the same time when this setup is used.

- (a) Install the pitot test adapter, COM-1916 on the F/O pitot probe.

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**CAUTION:** INSTALL THE STATIC PORT ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (b) Install the static test adapter, COM-1921pitot test adapter, COM-1916 on the F/O static port.
- (c) Connect the air data model test set, COM-1914 to the static test adapter, COM-1921pitot test adapter, COM-1916.

**WARNING:** WHEN THE STATIC PORTS HAVE COVERS ON THEM, MAKE SURE THAT A PERSON ON THE GROUND CAN SEE THE COVERS. ALSO MAKE SURE YOU ATTACH A TAG TO THE LEFT CONTROL WHEEL IN THE FLIGHT COMPARTMENT AS A REMINDER THAT THE STATIC PORTS HAVE COVERS ON THEM. IF THE COVERS ARE NOT REMOVED FROM THE STATIC PORTS, INCORRECT AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS CAN OCCUR. THIS CAN CAUSE DANGEROUS FLIGHT CONDITIONS.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (d) Seal the remaining F/O static ports with, Scotch Brand No.471 tape, G02219.

**Option 4: System Drain Test Setup**

Test Setup		
Figure	Description	More Data
Figure 502 (Sheet 7)	Supply pitot and static pressure from air data test set to Right Pitot and Right Static ADM through system drain fittings	
Figure 502 (Sheet 8)	Supply static pressure from air data test set to Right Pitot and Right Static ADM through system drain fittings	
Figure 502 (Sheet 11)	Supply pitot and static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM through system drain fittings	(a)
Figure 502 (Sheet 12)	Supply static pressure from air data test set to Left Pitot, Right Pitot, Left Static, and Right Static ADM through system drain fittings	(a)

(a) CAPT altimetry system test and F/O altimetry system test can be run at the same time when this setup is used.

- (e) Open the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. Refer to CARGO COMPARTMENT SIDEWALL LININGS - REMOVAL/INSTALLATION, PAGEBLOCK 25-52-06/401.
- (f) Remove the caps on the F/O pitot and static system drain fittings.
- (g) Install the quick-disconnect coupling, COM-1926 on the F/O Pitot System Drain Fitting.
- (h) Install the quick-disconnect coupling, COM-1927on the F/O Static System Drain Fitting.
- (i) Install the pitot test adapter, COM-1916 on the F/O pitot probe.
- (j) Install caps on the pitot test adapter, COM-1916.

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**WARNING:** WHEN THE STATIC PORTS HAVE COVERS ON THEM, MAKE SURE THAT A PERSON ON THE GROUND CAN SEE THE COVERS. ALSO MAKE SURE YOU ATTACH A TAG TO THE LEFT CONTROL WHEEL IN THE FLIGHT COMPARTMENT AS A REMINDER THAT THE STATIC PORTS HAVE COVERS ON THEM. IF THE COVERS ARE NOT REMOVED FROM THE STATIC PORTS, INCORRECT AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS CAN OCCUR. THIS CAN CAUSE DANGEROUS FLIGHT CONDITIONS.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (k) Seal the remaining F/O static ports with, Scotch Brand No.471 tape, G02219.
- (l) Connect the air data model test set, COM-1914 to the quick-disconnect couplings, coupling, COM-1926 and coupling, COM-1927.

## I. Captain (CAPT) Altimetry System Test

SUBTASK 34-11-00-780-006

- (1) Do the CAPT altimetry System Test as follows:

- (a) Rockwell Collins FCC:

- 1) Connect the ARINC 429 Bus analyzer, COM-1562 to the Flight Control Computer (FCC), left test connector J3, to pin 51 (Hi) and pin 52 (Lo).

NOTE: Set equipment ID 038 on the ARINC 429 Bus Analyzer for the instrument to show the correct engineering units.

NOTE: A box, SPL-3896 can be used to connect the data bus analyzer and the Flight Control Computer (FCC).

SUBTASK 34-11-00-780-007

**CAUTION:** PITOT PRESSURE MUST ALWAYS BE EQUAL OR LARGER THAN THE STATIC PRESSURE APPLIED TO THE SYSTEM. DIFFERENCE BETWEEN THESE TWO PRESSURES (DIFFERENTIAL PRESSURE) MUST NOT BE MORE THAN 10.00 INCHES OF MERCURY. DIFFERENTIAL PRESSURE MUST NOT FALL BELOW ZERO. IF THESE REQUIREMENTS ARE NOT FOLLOWED, DAMAGE TO EQUIPMENT COULD OCCUR.

- (2) Apply Static pressure with the air data model test set, COM-1914 for each test point and record test results with one of these:

Table of Test Input and Tolerance Requirements

Figure	Description
Figure 502 (Sheet 13)	Measurement Unit: inches of Mercury (inHg)
Figure 502 (Sheet 14)	Measurement Unit: millibars (mb)

SUBTASK 34-11-00-960-003

- (3) For the CAPT altimetry system test failure do this:
  - (a) Remove and replace the ADM. Do this task: AIR DATA MODULE - REMOVAL/INSTALLATION, PAGEBLOCK 34-21-04/401
  - (b) Do the CAPT altimetry system test.

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J. First Officers (F/O) Altimetry System Test

SUBTASK 34-11-00-480-248

- (1) Do the F/O altimetry System Test as follows:

- (a) Rockwell Collins FCC:

- 1) Connect the ARINC 429 Bus analyzer, COM-1562 to the Flight Control Computer (FCC), left test connector J3, to pin 51 (Hi) and pin 52 (Lo).

NOTE: Set equipment ID 038 on the ARINC 429 Bus Analyzer for the instrument to show the correct engineering units.

NOTE: A box, SPL-3896 can be used to connect the data bus analyzer and the Flight Control Computer (FCC).

SUBTASK 34-11-00-780-009

**CAUTION:** PITOT PRESSURE MUST ALWAYS BE EQUAL OR LARGER THAN THE STATIC PRESSURE APPLIED TO THE SYSTEM. DIFFERENCE BETWEEN THESE TWO PRESSURES (DIFFERENTIAL PRESSURE) MUST NOT BE MORE THAN 10.00 INCHES OF MERCURY. DIFFERENTIAL PRESSURE MUST NOT FALL BELOW ZERO. IF THESE REQUIREMENTS ARE NOT FOLLOWED, DAMAGE TO EQUIPMENT COULD OCCUR.

- (2) Apply Static pressure with the air data model test set, COM-1914 for each test point and record test results with one of these:

**Table of Test Input and Tolerance Requirements**

Figure	Description
Figure 502 (Sheet 15)	Measurement Unit: inches of Mercury (inHg)
Figure 502 (Sheet 16)	Measurement Unit: millibars (mb)

SUBTASK 34-11-00-960-004

- (3) For the F/O altimetry system test failure do this:

- (a) Remove and replace the ADM. Do this task: AIR DATA MODULE - REMOVAL/INSTALLATION, PAGEBLOCK 34-21-04/401.  
(b) Do the F/O altimetry system test.

K. Captain (CAPT) Altimetry System Test Set Removal

SUBTASK 34-11-00-080-126

- (1) Return CAPT pitot and static systems to ambient pressure state and remove air data model test set, COM-1914 set as follows:

**CAUTION:** RELEASE THE PRESSURE OR THE VACUUM CONTINUOUSLY AND AT THE SAME TIME FOR THE PITOT AND STATIC SYSTEMS. IF YOU DO NOT, YOU CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (a) Release the pressure or vacuum on the CAPT pitot and static systems to ambient pressure with the air data model test set, COM-1914.  
(b) Remove the ARINC 429 Data Bus analyzer, COM-1562.  
(c) Disconnect the air data model test set, COM-1914 from the CAPT pitot and static systems as follows:  
1) Option 1, static adapter test setup:

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- a) Disconnect the air data model test set, COM-1914 from the static test adapter, COM-1921 and pitot test adapter, COM-1916.
- b) Remove pitot test adapter, COM-1916 from the CAPT pitot probe.

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- c) Remove the static test adapter, COM-1921 from the CAPT static port.

**WARNING:** ENSURE THAT ALL TAPE AND TAPE RESIDUE IS REMOVED FROM THE PITOT AND STATIC PORTS. FAILURE TO REMOVE THIS MAY CAUSE INCORRECT INFORMATION TO THE FLIGHT CREW AND SYSTEM PLACING THE AIRCRAFT AT RISK.

- d) Remove the Scotch Brand No.471 tape, G02219, from the remaining CAPT static ports.
- 2) Option 2, system drain test setup:
  - a) Disconnect the air data model test set, COM-1914 from the coupling, COM-1926 and coupling, COM-1927.

**WARNING:** ENSURE THAT ALL TAPE AND TAPE RESIDUE IS REMOVED FROM THE PITOT AND STATIC PORTS. FAILURE TO REMOVE THIS MAY CAUSE INCORRECT INFORMATION TO THE FLIGHT CREW AND SYSTEM PLACING THE AIRCRAFT AT RISK.

- b) Remove Scotch Brand No.471 tape, G02219, from the remaining CAPT static ports.
- c) Remove the pitot test adapter, COM-1916 on the CAPT pitot probe.
- d) Remove the quick-disconnect coupling, COM-1926 and the coupling, COM-1927 from the drain fittings.
- e) Install caps on the CAPT pitot and static system drain fittings.
- f) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. Refer to CARGO COMPARTMENT SIDEWALL LININGS - REMOVAL/INSTALLATION, PAGEBLOCK 25-52-06/401.
- g) Do a general visual inspection (GVI) of the CAPT pitot and static system drain fittings.
  - <1> Make sure that the actuation ring is fully engaged on the lock pins.
  - <2> Make sure that the color lock ring indicator shows that the system drain fitting is connected correctly.

L. First Officer (F/O) Altimetry System Test Set Removal

SUBTASK 34-11-00-080-127

- (1) Return F/O pitot and static systems to ambient pressure state and remove air data model test set, COM-1914 as follows:



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**CAUTION:** RELEASE THE PRESSURE OR THE VACUUM CONTINUOUSLY AND AT THE SAME TIME FOR THE PITOT AND STATIC SYSTEMS. IF YOU DO NOT, YOU CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (a) Release the pressure or vacuum on the F/O pitot and static systems to ambient pressure using the air data model test set, COM-1914.
- (b) Remove the ARINC 429 Data Bus analyzer, COM-1562.
- (c) Disconnect the air data model test set, COM-1914 from the F/O pitot and static systems as follows:
  - 1) Option 3, static adapter test setup:
    - a) Disconnect the air data model test set, COM-1914 from the static test adapter, COM-1921 and pitot test adapter, COM-1916.
    - b) Remove pitot test adapters from the F/O pitot probe.

**CAUTION:** REMOVE THE ADAPTER SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- c) Remove static test adapter from the F/O static port.

**WARNING:** ENSURE THAT ALL TAPE AND TAPE RESIDUE IS REMOVED FROM THE PITOT AND STATIC PORTS. FAILURE TO REMOVE THIS MAY CAUSE INCORRECT INFORMATION TO THE FLIGHT CREW AND SYSTEM PLACING THE AIRCRAFT AT RISK.

- d) Remove Scotch Brand No.471 tape, G02219, from the remaining F/O static ports.
- 2) Option 4, system drain test setup:
  - a) Disconnect the air data model test set, COM-1914 from the coupling, COM-1926 and coupling, COM-1927.

**WARNING:** ENSURE THAT ALL TAPE AND TAPE RESIDUE IS REMOVED FROM THE PITOT AND STATIC PORTS. FAILURE TO REMOVE THIS MAY CAUSE INCORRECT INFORMATION TO THE FLIGHT CREW AND SYSTEM PLACING THE AIRCRAFT AT RISK.

- b) Remove the Scotch Brand No.471 tape, G02219, from the remaining F/O static ports.
- c) Remove the pitot test adapter, COM-1916 on the F/O pitot probe.
- d) Remove the quick-disconnect coupling, COM-1926 and the coupling, COM-1927 from the drain fittings.
- e) Install caps on the F/O pitot and static system drain fittings.
- f) Close the primary static system drain access panel, on the left sidewall lining, in the forward cargo compartment. Refer to CARGO COMPARTMENT SIDEWALL LININGS - REMOVAL/INSTALLATION, PAGEBLOCK 25-52-06/401.
- g) Do a general visual inspection (GVI) of the F/O pitot and static system drain fittings.

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- <1> Make sure that the actuation ring of the drain fitting is fully engaged on the lock pins.
- <2> Make sure the color lock ring indicator shows that the system drain fitting is connected correctly.

**M. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-11-00-860-228

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

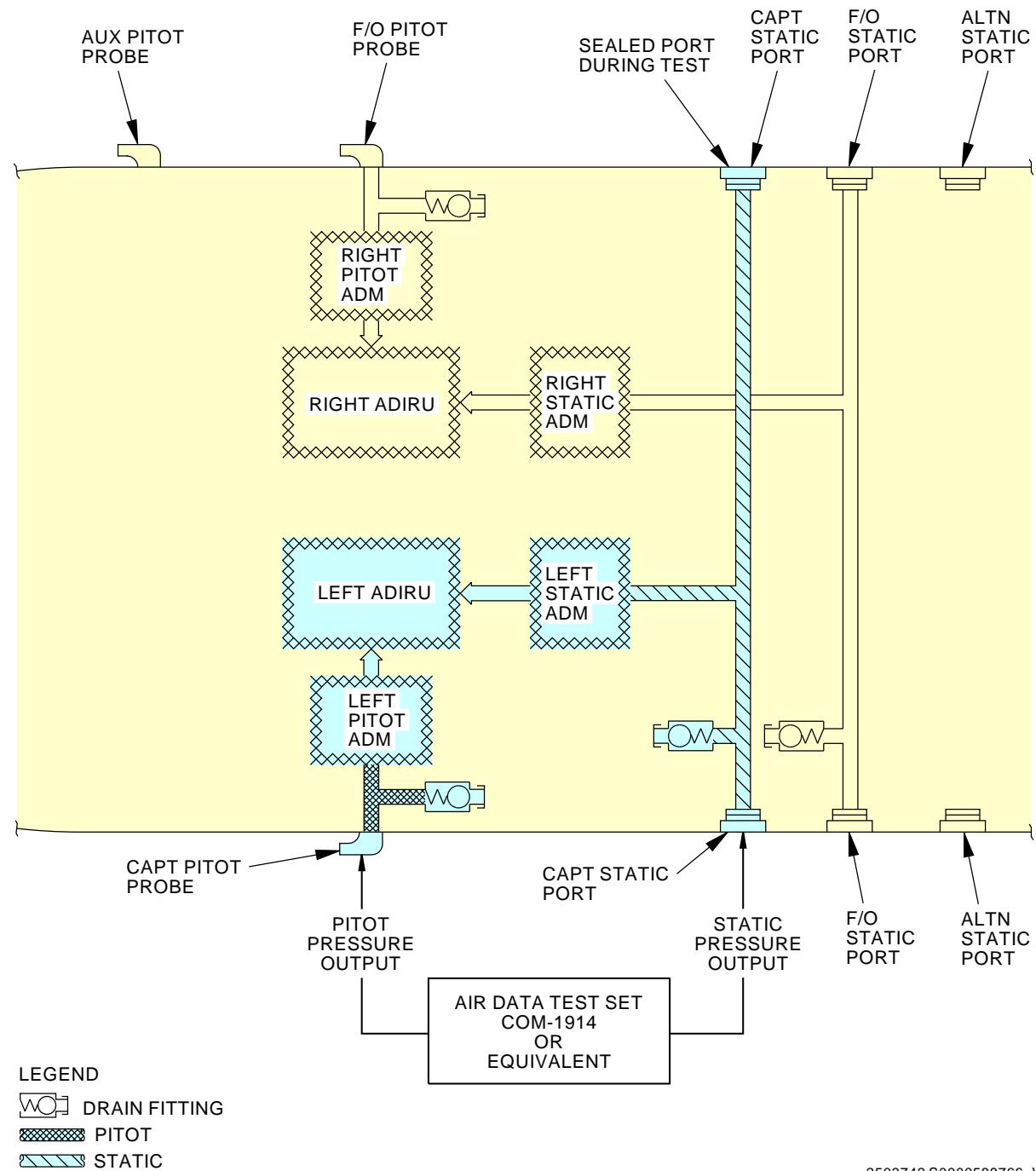
SUBTASK 34-11-00-860-236

- (2) If electrical power is not necessary, do this: Remove External Power, TASK 24-22-00-860-814.

———— END OF TASK ————

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**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 1 of 17)**

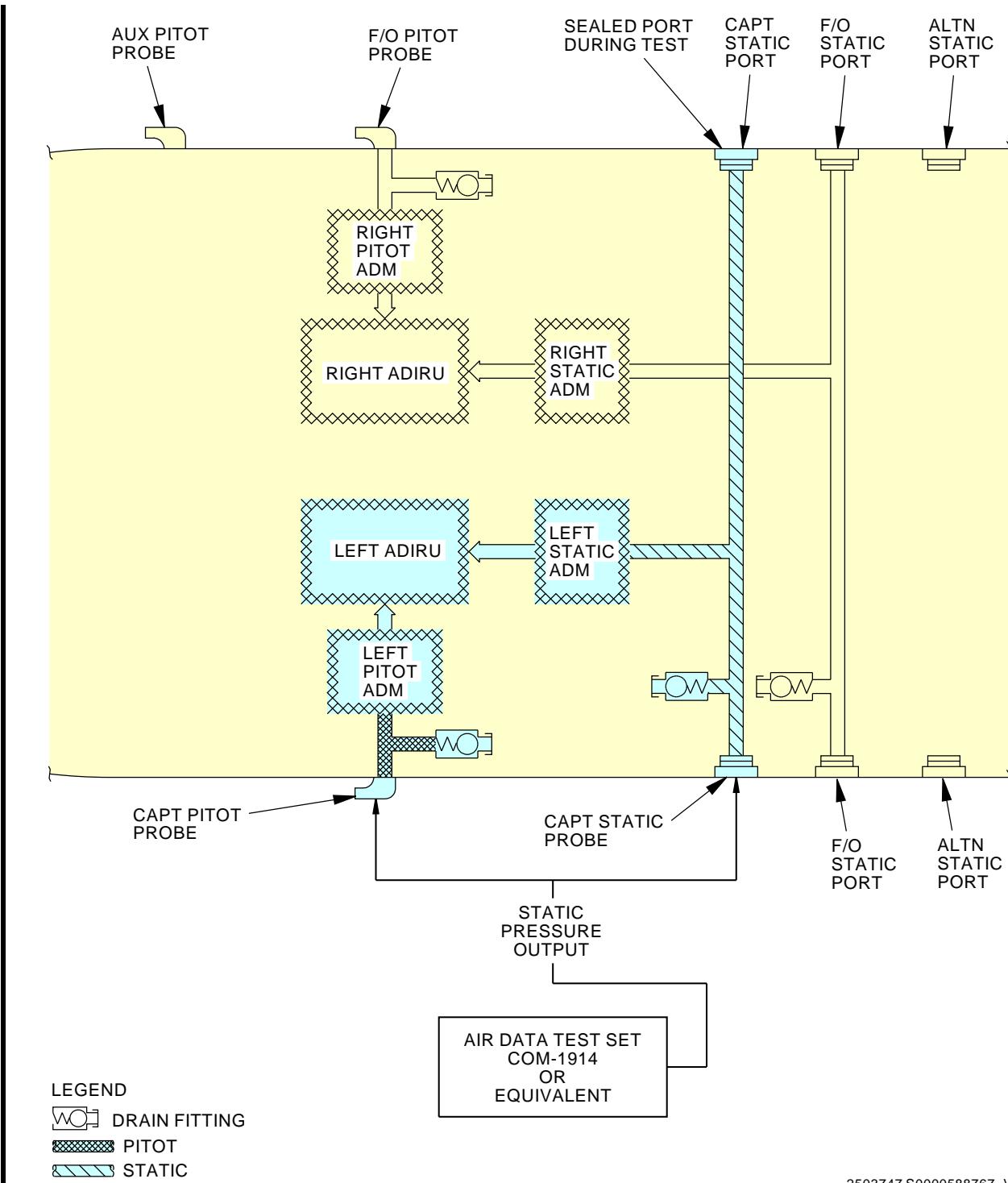
EFFECTIVITY  
**AKS ALL POST SB 737-34-2454**

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AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 2 of 17)

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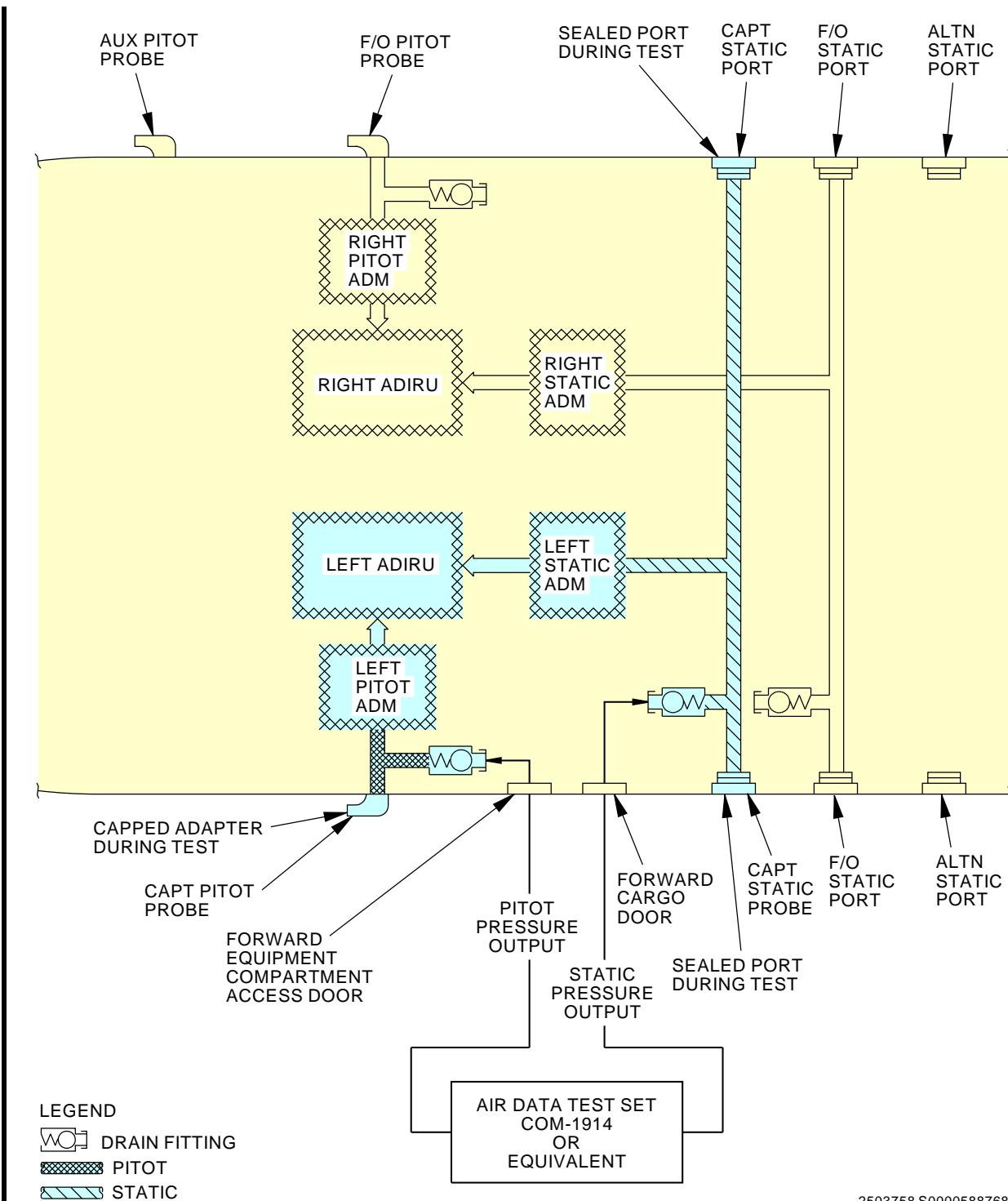
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AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 3 of 17)

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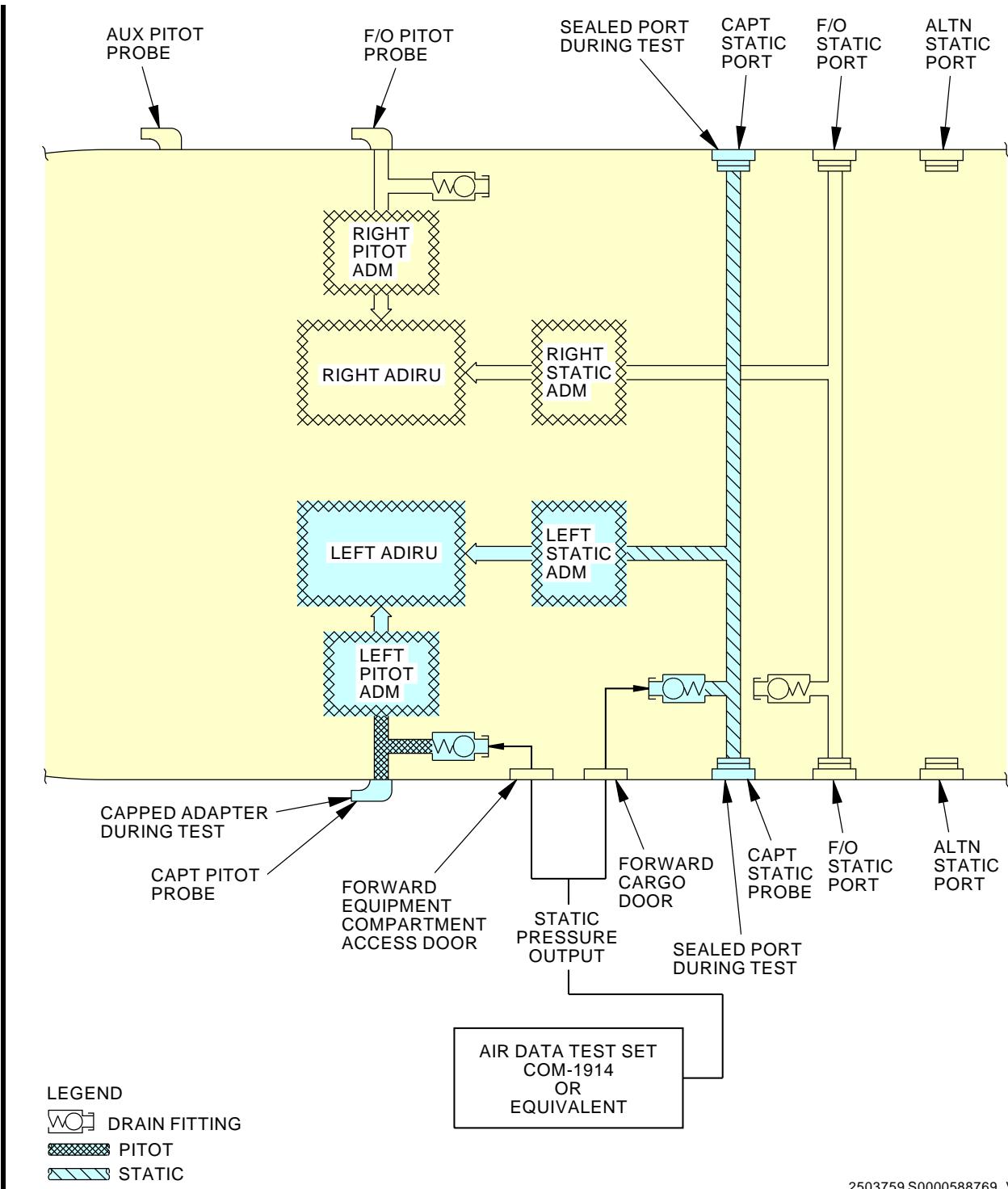
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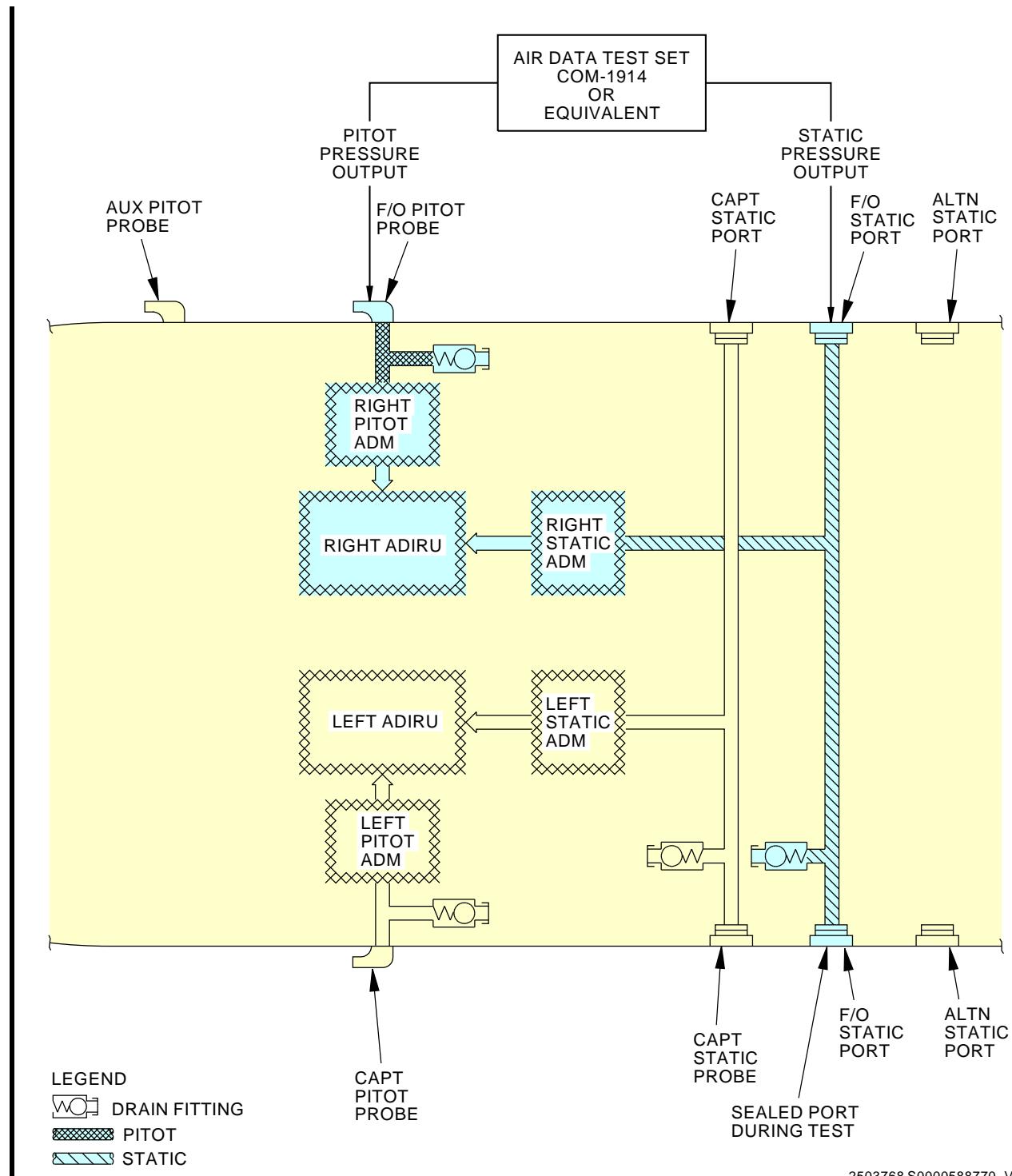
AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 4 of 17)

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**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 5 of 17)**

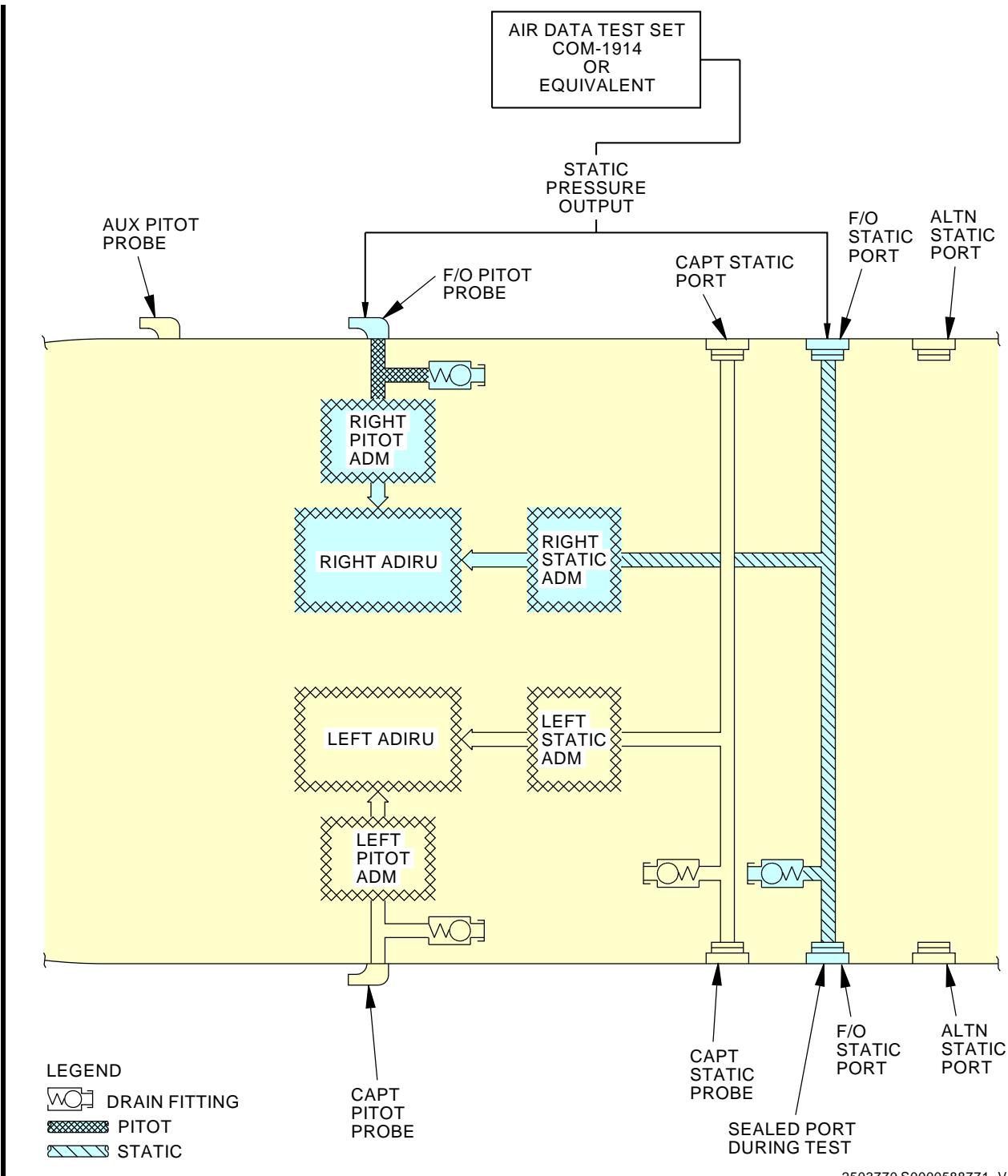
 EFFECTIVITY  
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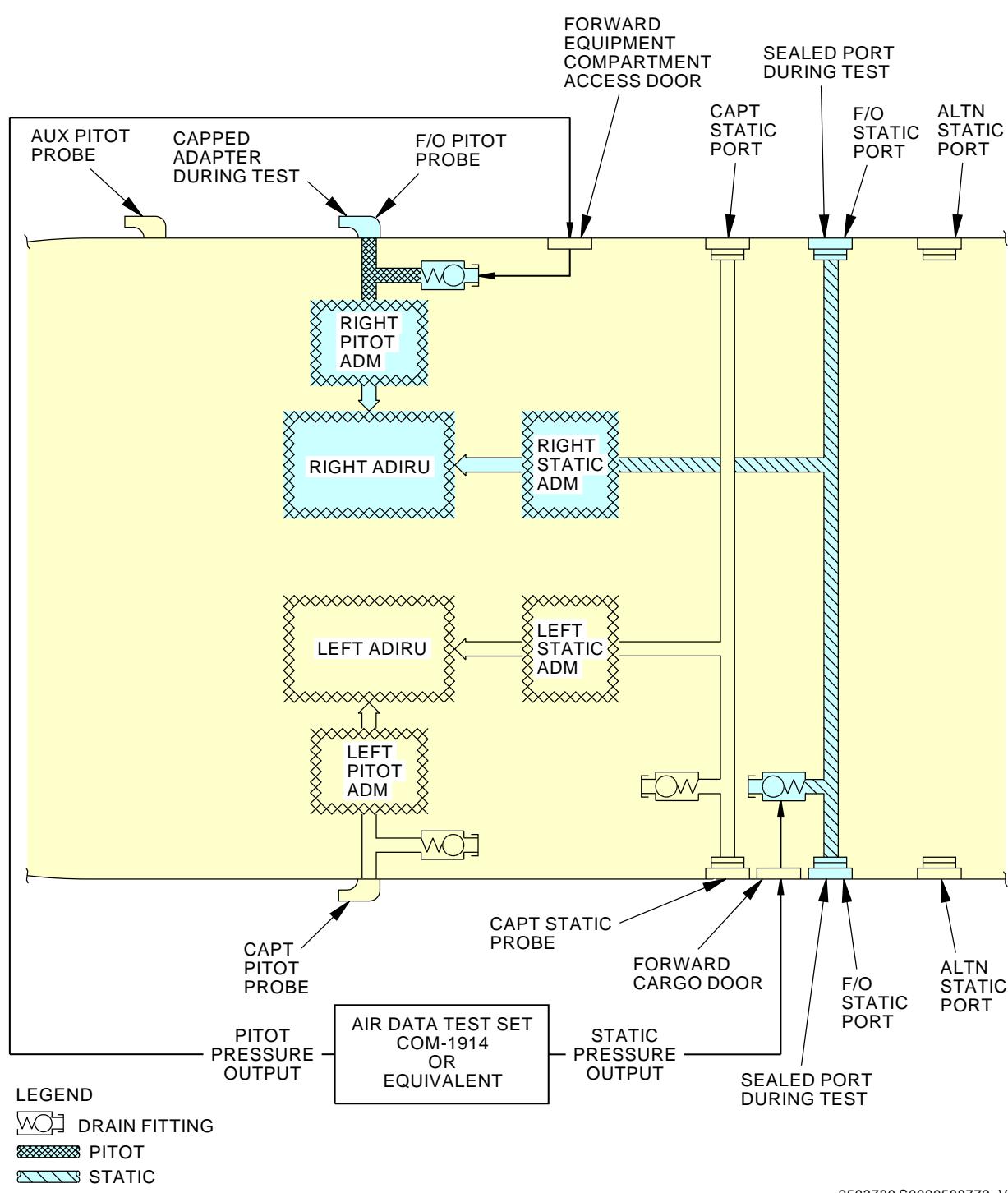
AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 6 of 17)

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AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 7 of 17)

EFFECTIVITY  
AKS ALL POST SB 737-34-2454

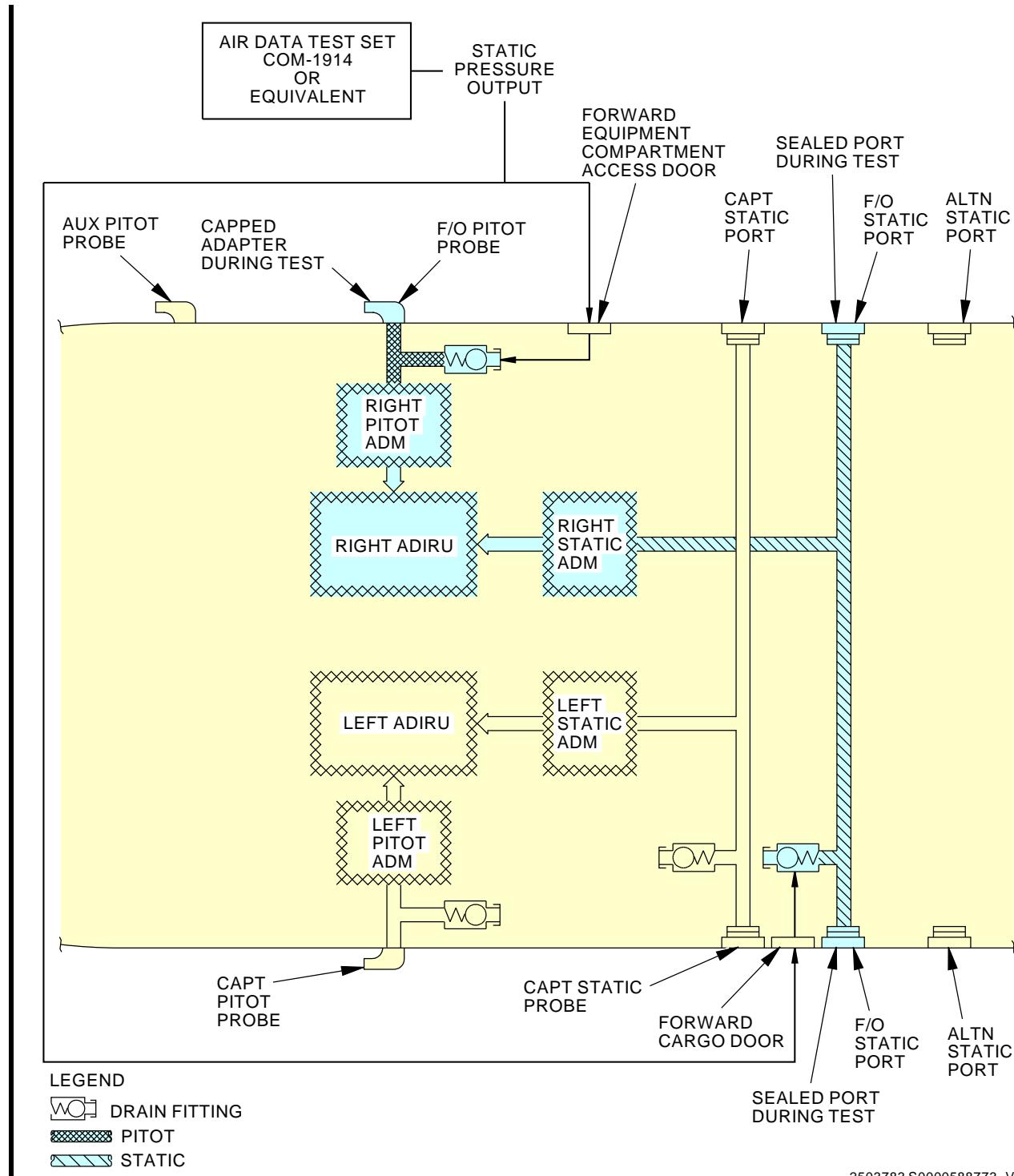
34-11-00

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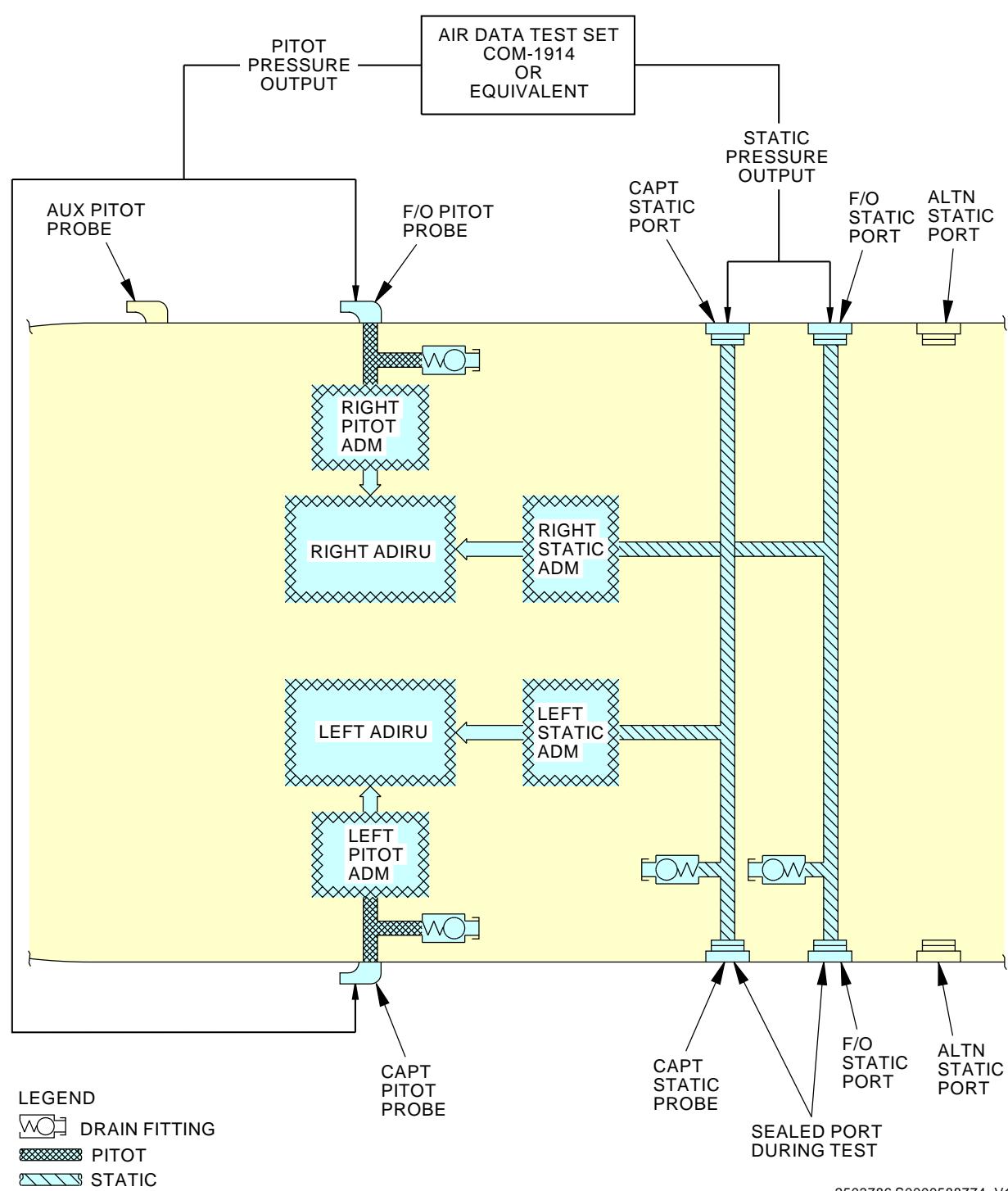
737-600/700/800/900  
AIRCRAFT MAINTENANCE MANUAL



AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 8 of 17)

EFFECTIVITY  
AKS ALL POST SB 737-34-2454

34-11-00

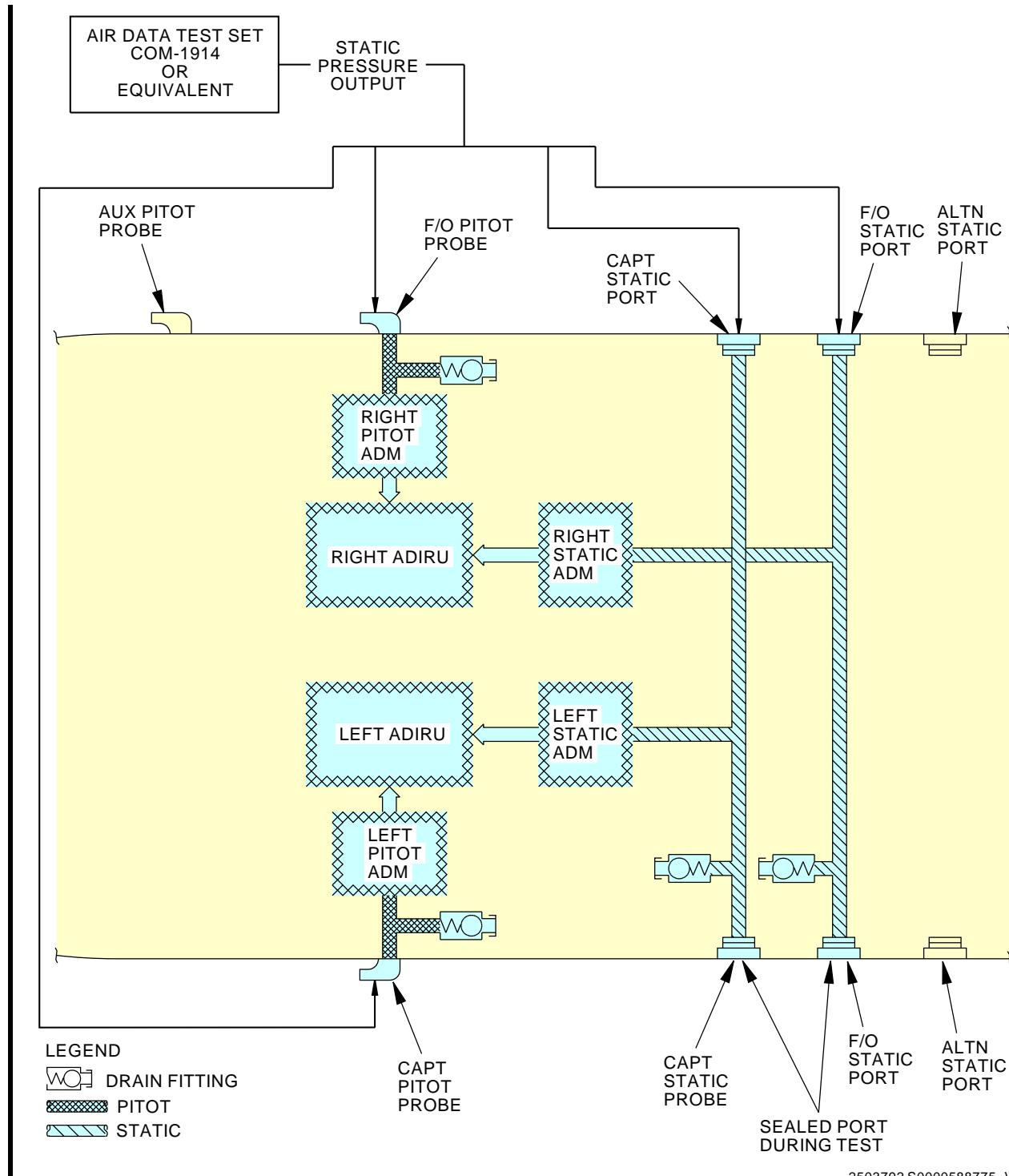


**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
Figure 502/34-11-00-990-805 (Sheet 9 of 17)

EFFECTIVITY  
AKS ALL POST SB 737-34-2454

**34-11-00**

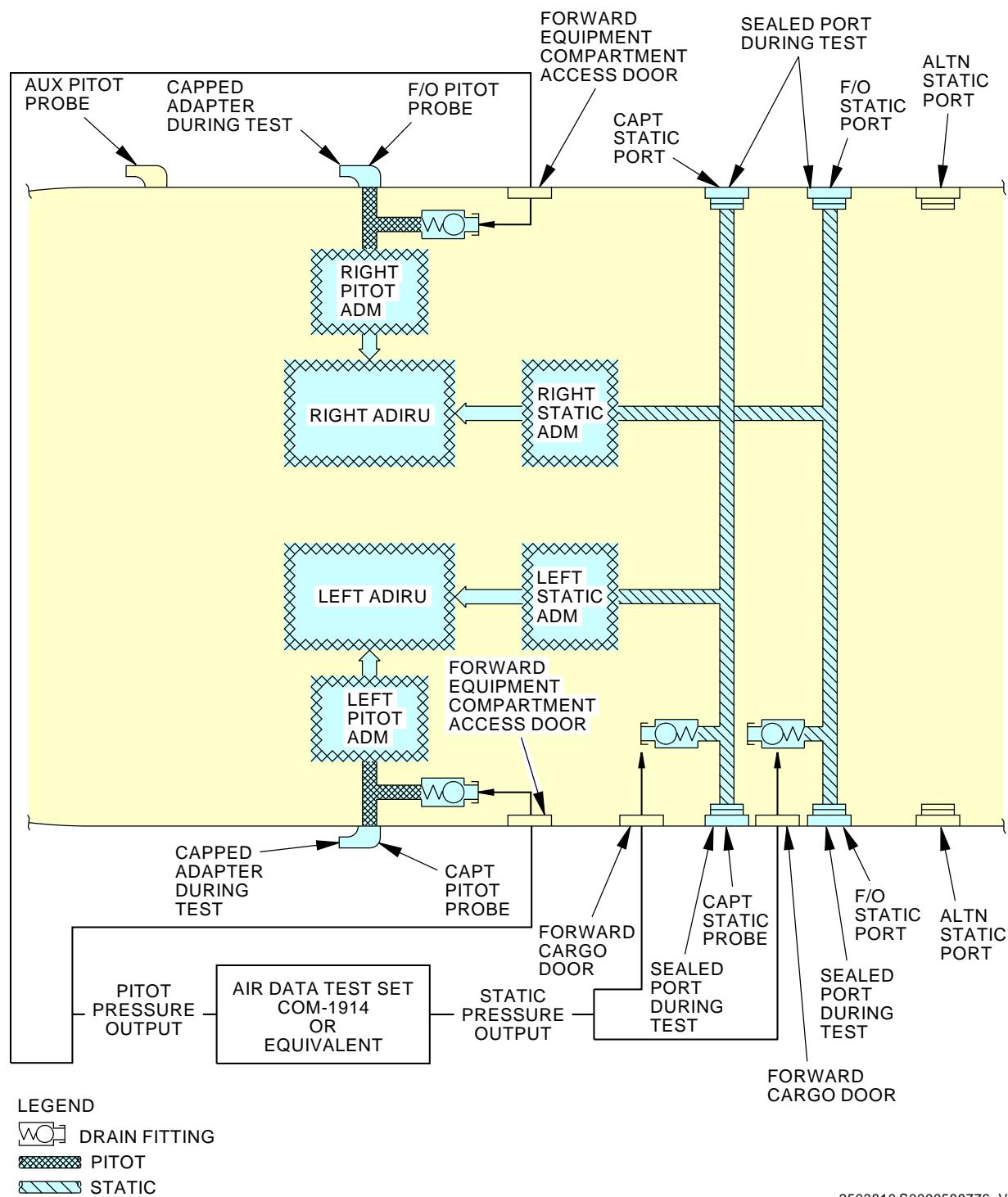
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**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 10 of 17)**

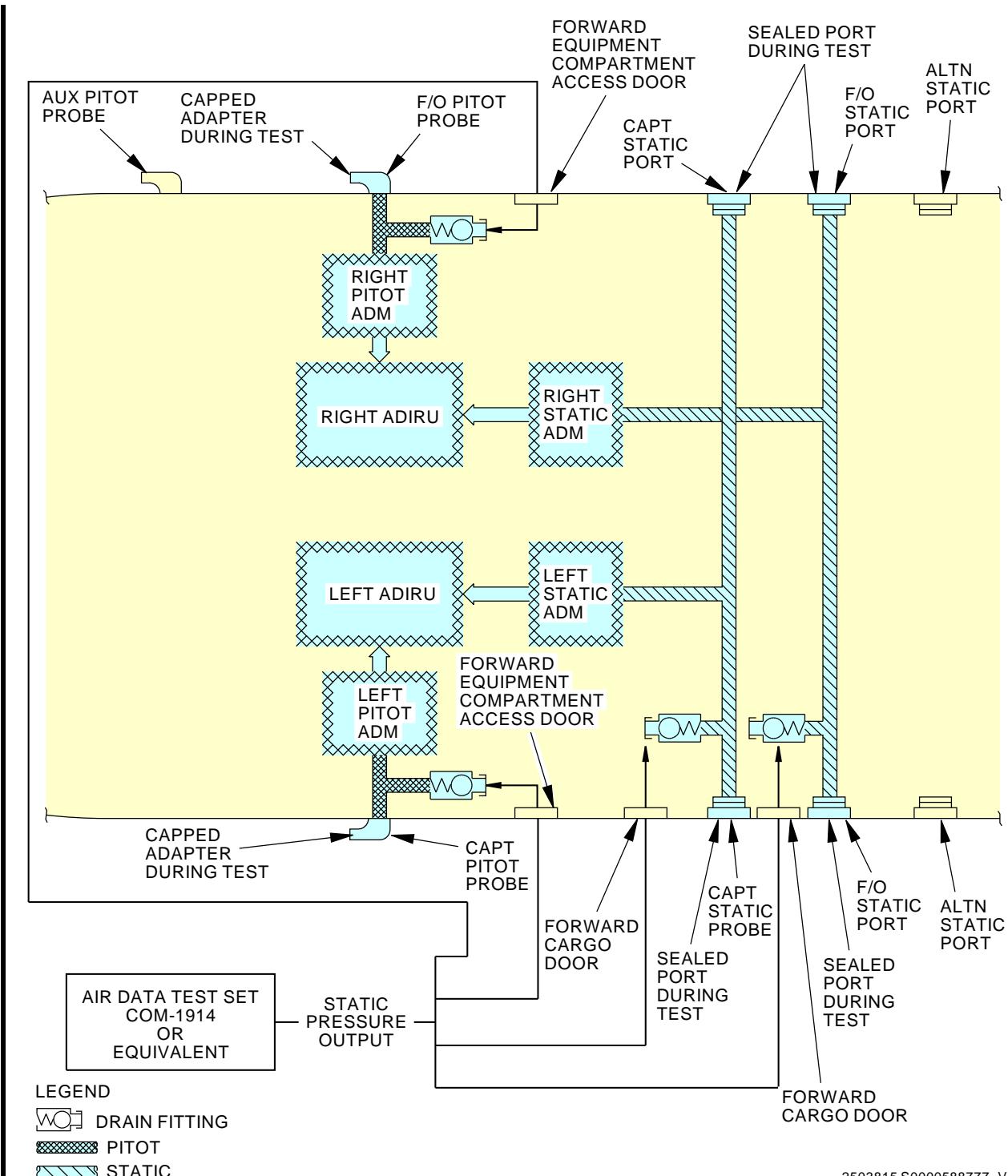
EFFECTIVITY  
 AKS ALL POST SB 737-34-2454

**34-11-00**


**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 11 of 17)**

EFFECTIVITY  
**AKS ALL POST SB 737-34-2454**

**34-11-00**
**D633A101-AKS**


**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 12 of 17)**

EFFECTIVITY  
**AKS ALL POST SB 737-34-2454**

**34-11-00**

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		Total (Pitot) Pressure Measurement- Left Pitot ADM				Static Pressure Measurement- Left Static ADM	
Entry to the Data Test Set		A	B	C	D		
1	29.917 ± 0.029	No Entry		± 0.012		± 0.012 (a)	
2	13.585 ± 0.029	No Entry		± 0.012		± 0.012 (a)	
3	5.611 ± 0.029	No Entry		± 0.009		± 0.009 (a)	
4	13.585 ± 0.029	No Entry			± 0.012	± 0.012 (a)	
5	29.917 ± 0.029	No Entry			± 0.012	± 0.012 (a)	

More Data  
Difference of the Differential Pressure (inHg)  
Difference of the Differential Pressure = C01C - C01D (inHg)  
Recorded Static Pressure, ARINC 429 Label 245 (inHg)  
Recorded Test Set, Static Pressure Output (inHg)  
Air Data Test Set, Differential Pressure (inHg)  
Difference of the Differential Pressure = C01A - C01B (inHg)  
Recorded Pitot Pressure, ARINC 429 Label 242 (inHg)  
Recorded Pitot Pressure, Q<sub>c</sub> (inHg)  
Air Data Test Set, Static Pressure Output (inHg)  
Pitot Pressure, P<sub>s</sub> (inHg)  
Test Point:

(a) Allow one minute after the Air Data Test Set reaches the input static pressure value before recording measurements.

2503967 S0000588778\_V1

**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 13 of 17)**

EFFECTIVITY  
**AKS ALL POST SB 737-34-2454**

**34-11-00**



**737-600/700/800/900**  
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		Entry to the Air Data Test Set				Total (Pitot) Pressure Measurement- Left Pitot ADM				Static Pressure Measurement- Left Static ADM			
		A	B	C	D	A	B	C	D	A	B	C	D
1	1013 ± 1.0	No Entry				± 0.4				± 0.4 (a)			
2	460 ± 1.0	No Entry				± 0.4				± 0.4 (a)			
3	190 ± 1.0	No Entry				± 0.3				± 0.3 (a)			
4	460 ± 1.0	No Entry				± 0.4				± 0.4 (a)			
5	1013 ± 1.0	No Entry				± 0.4				± 0.4 (a)			

Teept Point: Static Pressure  $P_s$  (mb), Pitot Pressure  $P_p$  (mb), Air Data Test Set, Static Pressure Output (mb), Recorded Pitot Pressure, ARINC 429 Label 242 (mb), Difference of Pitot Pressure =  $C_{01A} - C_{01B}$  (mb), Air Data Test Set, Static Pressure Output (mb), Recorded Static Pressure =  $C_{01C} - C_{01D}$  (mb), Difference of the Difference Pressure =  $C_{01C} - C_{01D}$  (mb), More Data, Difference of the Difference Pressure (mb).

(a) Allow one minute after the Air Data Test Set reaches the input static pressure value before recording measurements.

2503992 S0000588780\_V1

**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 14 of 17)**

EFFECTIVITY  
**AKS ALL POST SB 737-34-2454**

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		Entry to the Data Test Set				Total (Pilot) Pressure Measurement- Right Pitot ADM		Static Pressure Measurement- Right Static ADM	
		A	B	C	D				
1	29.917 ± 0.029	No Entry		± 0.012			± 0.012 (a)		
2	13.585 ± 0.029	No Entry		± 0.012			± 0.012 (a)		
3	5.611 ± 0.029	No Entry		± 0.009			± 0.009 (a)		
4	13.585 ± 0.029	No Entry		± 0.012			± 0.012 (a)		
5	29.917 ± 0.029	No Entry		± 0.012			± 0.012 (a)		

(a) Allow one minute after the Air Data Test Set reaches the input static pressure value before recording measurements.

2504004 S0000588781\_V1

**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 15 of 17)**

EFFECTIVITY  
**AKS ALL POST SB 737-34-2454**

**34-11-00**



**737-600/700/800/900**  
**AIRCRAFT MAINTENANCE MANUAL**

		Entry to the Air Data Test Set				Total (Pitot) Pressure Measurement- Right Pitot ADM				Static Pressure Measurement- Right Static ADM	
		A	B	C	D	A	B	C	D	A	B
1	1013 ± 1.0	No Entry				± 0.4				± 0.4 (a)	
2	460 ± 1.0	No Entry				± 0.4				± 0.4 (a)	
3	190 ± 1.0	No Entry				± 0.3				± 0.3 (a)	
4	460 ± 1.0	No Entry				± 0.4				± 0.4 (a)	
5	1013 ± 1.0	No Entry				± 0.4				± 0.4 (a)	

Tolerances of the Differential Pressure =  $C_{01C} - C_{01D}$  (mb)  
 Recorded Static Pressure,  $A_{RNG} 429$  Label 245 (mb)  
 Air Data Test Set, Static Pressure Output (mb)  
 Recorded Pitot Pressure,  $A_{RNG} 429$  Label 242 (mb)  
 Differential Pitot Pressure =  $C_{01A} - C_{01B}$  (mb)  
 Air Data Test Set, Static Pressure Output (mb)  
 Recorded Pitot Pressure,  $A_{RNG} 429$  Label 242 (mb)  
 Differential Pitot Pressure =  $C_{01A} - C_{01B}$  (mb)  
 Air Data Test Set, Static Pressure Output (mb)  
 Recorded Static Pressure Output (mb)  
 Differential Static Pressure,  $A_{RNG} 429$  Label 245 (mb)  
 More Data Differential Pressure (mb)  
 Tolerances of the Differential Pressure =  $C_{01C} - C_{01D}$  (mb)

(a) Allow one minute after the Air Data Test Set reaches the input static pressure value before recording measurements.

2504005 S0000588782\_V1

**AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC**  
**Figure 502/34-11-00-990-805 (Sheet 16 of 17)**

EFFECTIVITY  
 AKS ALL POST SB 737-34-2454

**34-11-00**



737-600/700/800/900  
AIRCRAFT MAINTENANCE MANUAL

## Engineering Data Conversion Information

To convert binary data from ARINC 429 Bus Analyzer to engineering data, perform the following:

For ADIRU Label 242 or 245:

- Make a record of bits 28 through 13. Bits 28 through 13 are the data bits, where bit 28 is the most significant bit and bit 13 is the least significant bit.
- Convert bits 28 through 13 from binary to decimal then multiply decimal value by 0.03125 to get the static pressure in mb.

For Example:

Label 245 Bit Position	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	Label 245 decimal value	Conversion rate decimal to mb	Conversion rate decimal to mb	Results in mb
Example Binary Data	0	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0.03125	0.03125	1013
Conversion to Decimal	0	2 <sup>14</sup>	2 <sup>13</sup>	2 <sup>12</sup>	2 <sup>11</sup>	2 <sup>10</sup>	2 <sup>9</sup>	0	2 <sup>7</sup>	0	2 <sup>5</sup>	0	0	0	0	0	0			
Decimal Values	0	16384	8192	4096	2048	1024	512	0	128	0	32	0	0	0	0	0	0	32416	0.03125	1013
Example Binary Data	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	14720	0.03125	460
Conversion to Decimal	0	0	2 <sup>13</sup>	2 <sup>12</sup>	2 <sup>11</sup>	0	0	2 <sup>8</sup>	2 <sup>7</sup>	0	0	0	0	0	0	0	0			
Decimal Values	0	0	8192	4096	2048	0	0	256	128	0	0	0	0	0	0	0	0	14720	0.03125	460
Example Binary Data	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	6080	0.03125	190
Conversion to Decimal	0	0	0	2 <sup>12</sup>	0	2 <sup>10</sup>	2 <sup>9</sup>	2 <sup>8</sup>	2 <sup>7</sup>	0	0	0	0	0	0	0	0			
Decimal Values	0	0	0	4096	0	1024	512	256	128	64	0	0	0	0	0	0	0	6080	0.03125	190

2504008 S0000588802\_V1

AIR DATA SYSTEM - ALTIMETRY SYSTEM TEST - TEST SCHEMATIC  
Figure 502/34-11-00-990-805 (Sheet 17 of 17)

EFFECTIVITY  
AKS ALL POST SB 737-34-2454

**34-11-00**



737-600/700/800/900  
AIRCRAFT MAINTENANCE MANUAL

PITOT PROBE - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
- (1) A removal of the pitot probe
  - (2) An installation of the pitot probe.

**TASK 34-11-01-000-801**

**2. Pitot Probe - Removal**

(Figure 401)

**A. References**

Reference	Title
20-10-44-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)

**B. Tools/Equipment**

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

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**C. Location Zones**

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



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D. Removal Procedure

SUBTASK 34-11-01-860-001

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-01-140-004

**CAUTION:** MAKE SURE THAT THE AREA AROUND THE PITOT PROBE IS CLEAR OF UNWANTED MATERIAL. CONTAMINATION OF THE PITOT SYSTEM CAN OCCUR.

- (2) Use the sealant removal tool, COM-2481 to remove the sealant from around the baseplate [1] of the pitot probe [9].

SUBTASK 34-11-01-020-002

- (3) Remove the screws [7] from the baseplate [1] of the pitot probe [9].

SUBTASK 34-11-01-020-003

**WARNING:** MAKE SURE THAT THE PITOT PROBE HEAT IS OFF. INJURY TO PERSONS CAN OCCUR.

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT. THE PITOT PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (4) Do these steps to loosen the pitot probe [9] from the airplane skin:  
(a) Hold the probe strut [8].  
(b) Loosen the grounding plate assembly [14].  
(c) Pull the pitot probe [9] out from the airplane skin until you can get access to the pitot hose fitting [11] and electrical connector [6] on the base of the pitot probe [9].

SUBTASK 34-11-01-020-004

**CAUTION:** USE WRENCHES TO APPLY COUNTER PRESSURE ON EACH SIDE OF THE FITTING DURING DISASSEMBLY. DAMAGE TO THE TUBE OR FITTING CAN OCCUR.

- (5) Disconnect the pitot hose fitting [11] at the base of the pitot probe [9].

**NOTE:** Airplanes with a straight fitting on the end of the flexible hose, the 90 degree elbow fitting is part of the pitot probe assembly.

SUBTASK 34-11-01-020-005

- (6) Remove the long screw [10] from the pitot probe side of the electrical connector [6].

SUBTASK 34-11-01-020-006

- (7) Disconnect the electrical connector [6].

SUBTASK 34-11-01-020-007

- (8) Remove the pitot probe [9].

SUBTASK 34-11-01-420-001

- (9) Install the long screw [10] in the electrical connector [6].

EFFECTIVITY  
AKS ALL

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SUBTASK 34-11-01-020-008

- (10) Temporarily attach the electrical connector [6] and pitot hose fitting [11] so they do not fall inside the fuselage.

SUBTASK 34-11-01-020-009

- (11) Put a cap on the pitot hose fitting [11] that stays on the airplane to keep out unwanted material.

NOTE: This step is not necessary when you replace the pitot probe [9] immediately.

SUBTASK 34-11-01-020-010

- (12) For the bolts [4] in the baseplate [1], do this task: Lockwire, Cotter Pins, and Lockrings - Removal, TASK 20-10-44-000-801.

SUBTASK 34-11-01-020-011

- (13) Remove the bolts [4], washers [5], and the pitot probe [9] from the baseplate [1].

NOTE: Hardened sealant can be softened with heat for easier removal. The baseplate and probe may be heated in an oven, 150 degrees F (65.5 C) for 20 minutes to soften the sealant.

SUBTASK 34-11-01-020-012

- (14) Keep the baseplate [1] for another installation.

NOTE: The baseplates [1] are not interchangeable between positions.

**AKS ALL; AIRPLANES WITH GROUNDING PLATE ASSEMBLY**

SUBTASK 34-11-01-020-062

- (15) Disconnect the bonding jumper [13] from the grounding plate assembly [14].

SUBTASK 34-11-01-020-063

- (16) Remove the grounding plate assembly [14] and discard it.

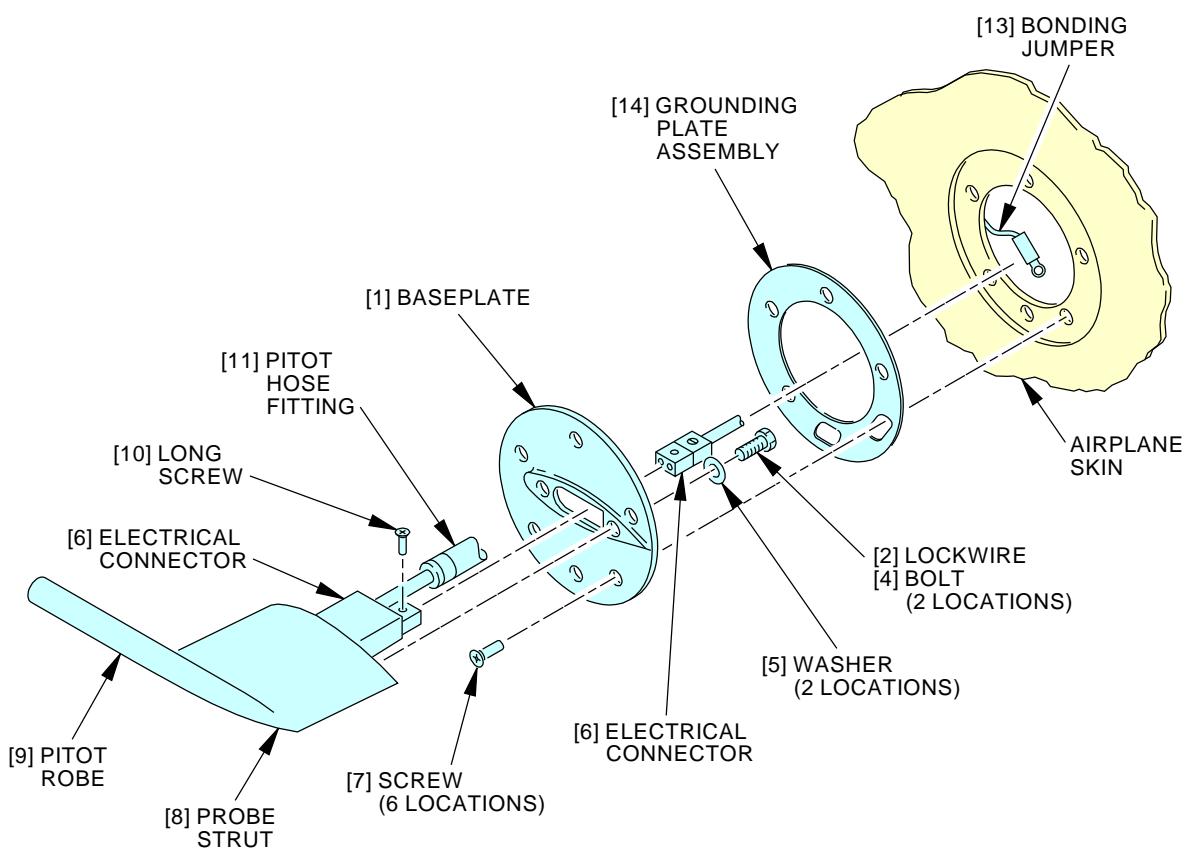
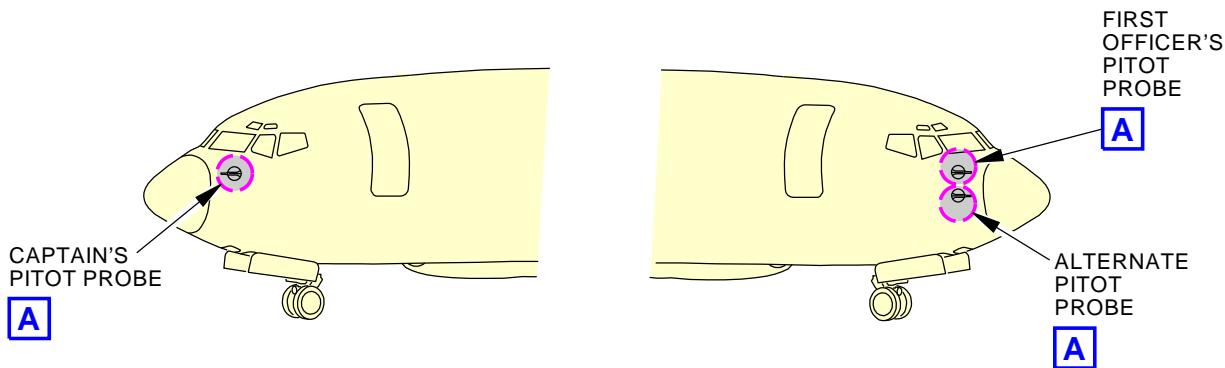
NOTE: The grounding plate assembly [14] can be reused if not damaged.

**AKS ALL**

———— END OF TASK ————



**34-11-01**



**CAPTAIN'S PITOT PROBE SHOWN  
(FIRST OFFICER'S AND ALTERNATE ARE OPPOSITE)**

**A**

2128611 S0000460032\_V3

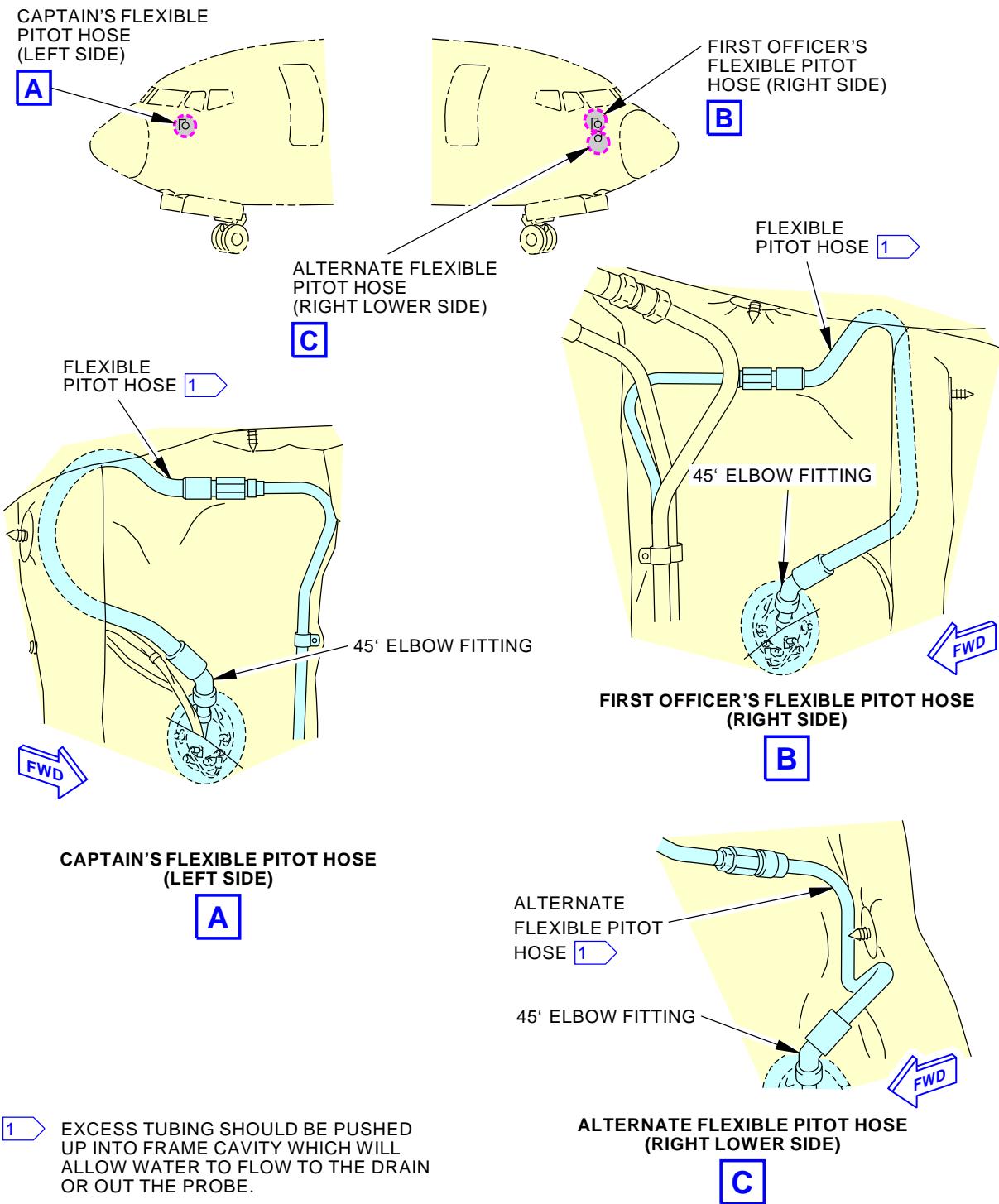
**Pitot Probe Installation**  
**Figure 401/34-11-01-990-801**

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH GROUNDING PLATE  
ASSEMBLY**

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**34-11-01**

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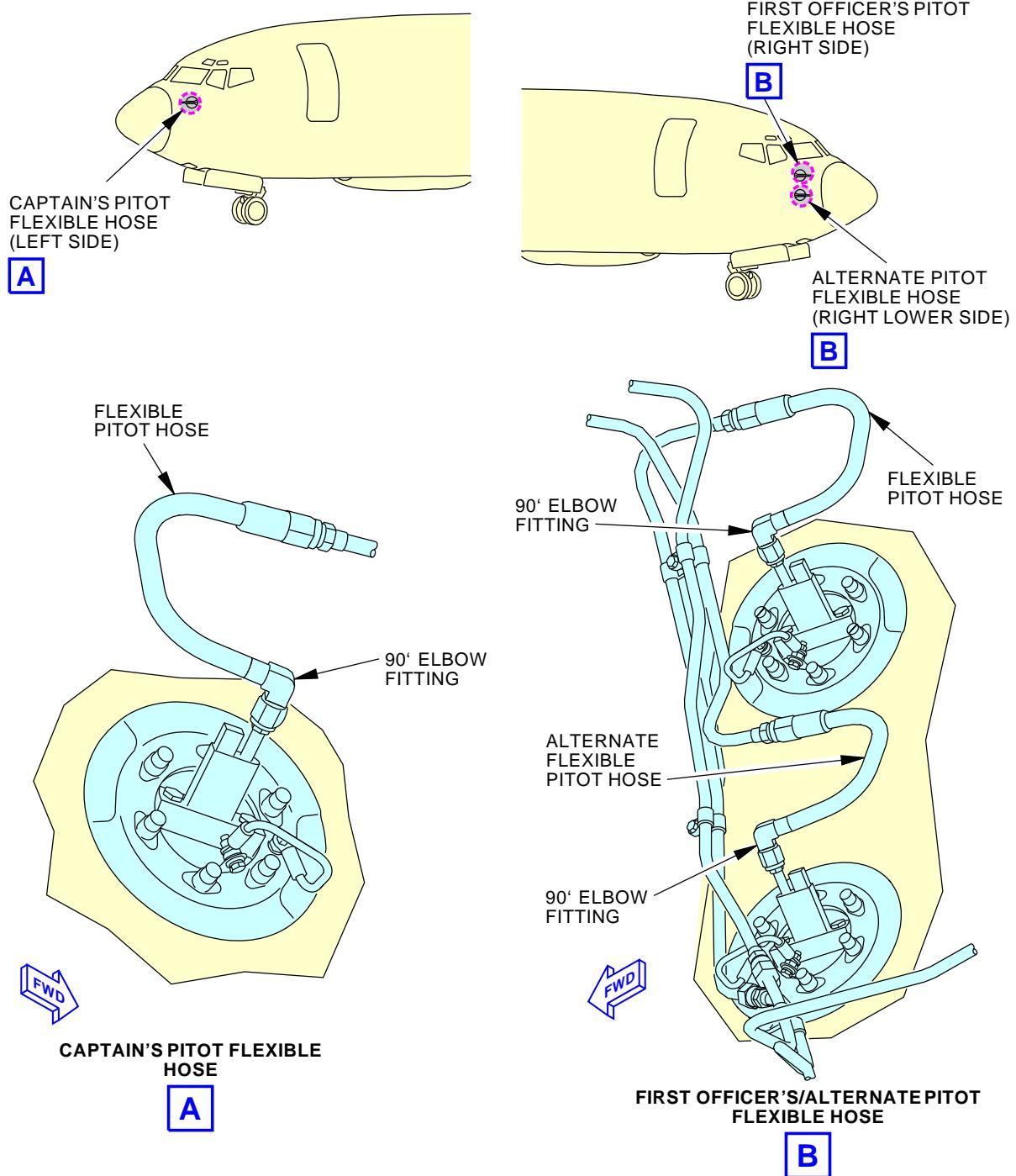
1448607 S0000262905\_V3

**Pitot Probe Flex Hose Installation**  
**Figure 402/34-11-01-990-805**

EFFECTIVITY  
 AKS ALL; AIRPLANES WITH 45 DEGREE ELBOW  
 FITTING ON THE PITOT PROBE END OF THE HOSE

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**34-11-01**

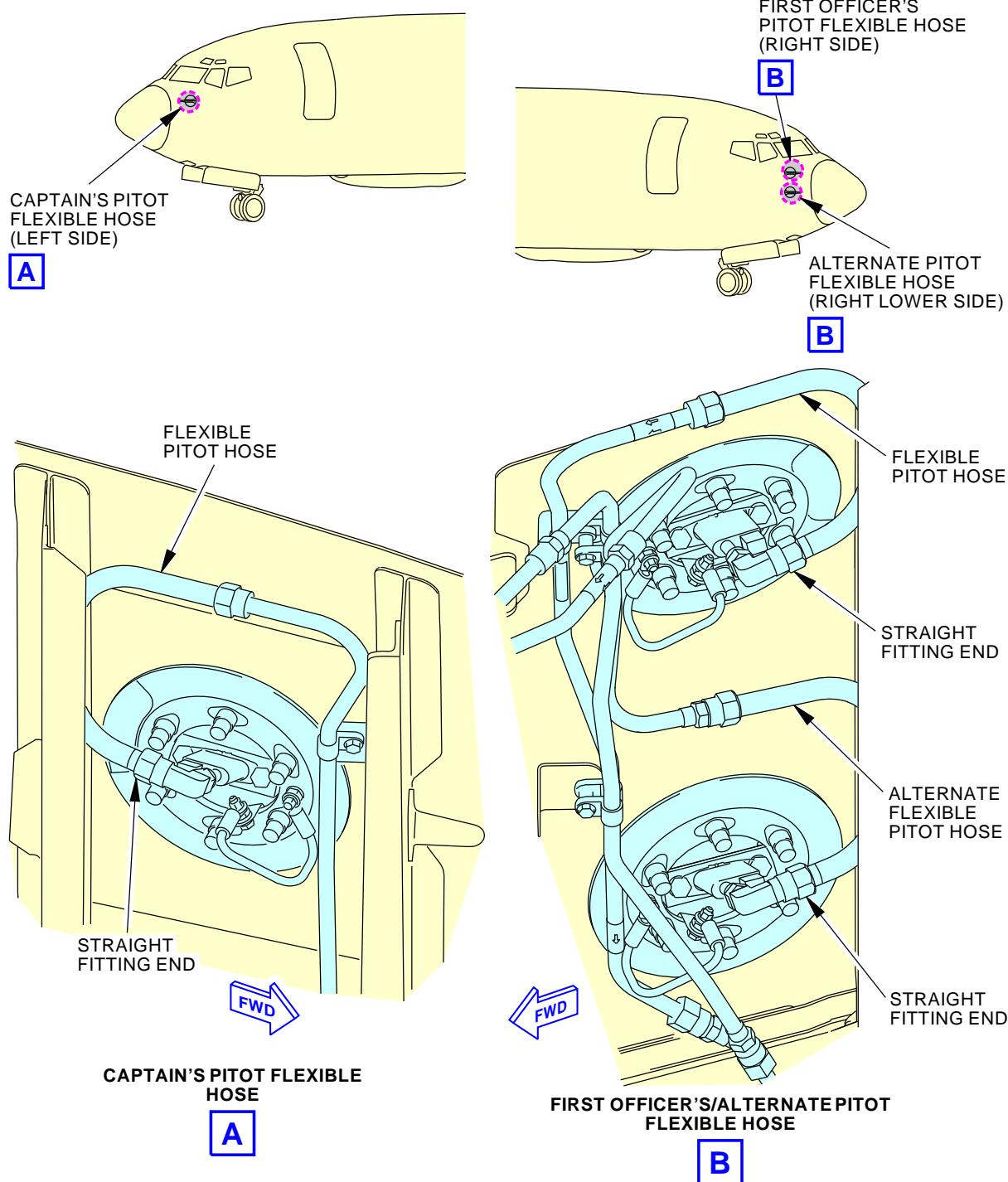
**737-600/700/800/900  
AIRCRAFT MAINTENANCE MANUAL**


2130516 S0000459996\_V2

**Pitot Probe Flex Hose Installation  
Figure 403/34-11-01-990-806**

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH 90 DEGREE ELBOW  
FITTING ON THE PITOT PROBE END OF THE HOSE**

**34-11-01**

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2131927 S0000459997\_V2

**Pitot Probe Flex Hose Installation  
Figure 404/34-11-01-990-807**

EFFECTIVITY  
AKS ALL; AIRPLANES WITH STRAIGHT FITTING ON  
THE PITOT PROBE END OF THE HOSE

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**TASK 34-11-01-400-801**

**3. Pitot Probe - Installation**

(Figure 401)

(Figure 402 or Figure 403 or Figure 404)

**A. References**

Reference	Title
20-10-34-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
20-50-11-910-801	Standard Torque Values (P/B 201)
20-50-11-993-820	Table: Installation Torques for Flared, Flareless, and Short Flareless Fittings with Lubricated Threads Used on Aluminum and Annealed CRES Tube In-Line Fittings and Hose Ends (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-11-00-790-810	Left Pitot System Leak Test (P/B 501)
34-11-00-790-811	Right Pitot System Leak Test (P/B 501)
34-11-00-790-812	Alternate Pitot System Leak Test (P/B 501)
51-31-00-390-806	Aerodynamic Smoother Application (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-614	Bonding Meters - Non-Intrinsically Safe (Used in non-hazardous locations) Part #: 247000 Supplier: 00426 Part #: 620LK Supplier: 1CRL2 Opt Part #: 247001 Supplier: 00426
COM-1523	Stand and Personnel Lifting Equipment - General Purpose Part #: B-14 Supplier: 05060 Part #: B-9 Supplier: 05060 Part #: Z-45-25J Supplier: 59497

**C. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

**D. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
9	Pitot probe	34-11-01-03-035	AKS ALL
		34-11-01-03-230	AKS ALL

**E. Location Zones**

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



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AIRCRAFT MAINTENANCE MANUAL

F. Installation Procedure

SUBTASK 34-11-01-860-166

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-01-110-001

- (2) For the surface of the baseplate [1], do this task: Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-34-110-802.

SUBTASK 34-11-01-420-002

- (3) Put the baseplate [1] on the pitot probe [9].

SUBTASK 34-11-01-420-003

- (4) Install the bolts [4] and washers [5] in the baseplate [1].

SUBTASK 34-11-01-420-004

- (5) For the bolts [4], do this task: Lockwire, Cotter Pins, and Lockrings - Installation, TASK 20-10-44-400-801.

SUBTASK 34-11-01-420-047

- (6) Apply sealant, A00247 to the following parts:

NOTE: It is not necessary to apply the sealant immediately, if the cure time will cause a flight delay. But, you must apply the sealant as soon as possible to keep moisture out of the area between the probe and airplane skin. The sealant deferral must not exceed a maximum of eight weeks.

- (a) Around the head of the two bolts [4].  
(b) A thin layer on the mating surfaces of the baseplate [1].  
(c) A thin layer on the pitot probe [9].

**AKS ALL; AIRPLANES WITH GROUNDING PLATE ASSEMBLY**

SUBTASK 34-11-01-420-048

- (7) Put the grounding plate assembly [14] into position on the baseplate [1].

SUBTASK 34-11-01-420-049

- (8) Connect the bonding jumper [13] to the grounding plate assembly [14].

**AKS ALL**

SUBTASK 34-11-01-420-006

**CAUTION:** USE WRENCHES TO APPLY COUNTER PRESSURE ON EACH SIDE OF THE FITTING DURING ASSEMBLY. DAMAGE TO THE TUBE OR FITTING CAN OCCUR.

- (9) Connect the pitot hose fitting [11] at the base of the pitot probe [9].  
(a) Make sure that the flexible pitot line is not twisted and does not have a kink. Figure 402 or Figure 403 or Figure 404



**34-11-01**



**737-600/700/800/900**  
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**AKS ALL; AIRPLANES WITH STRAIGHT FITTING ON THE PITOT PROBE END OF THE HOSE**

NOTE: The pitot probe assembly which has a 90 degree elbow fitting as part of the pitot probe assembly is required.

**AKS ALL**

SUBTASK 34-11-01-420-007

- (10) Remove the long screw [10] from the pitot probe [9] side of the electrical connector [6].

SUBTASK 34-11-01-210-001

- (11) Examine the electrical connector [6] for loose, bent, or broken pins.

SUBTASK 34-11-01-420-008

- (12) Connect the electrical connector [6].

SUBTASK 34-11-01-420-009

- (13) Install the long screw [10] in the electrical connector [6].

SUBTASK 34-11-01-420-010

**CAUTION:** DO NOT LET DUST, DIRT, OR OTHER UNWANTED MATERIAL GET IN THE PORTS.  
CONTAMINATION CAN CAUSE DAMAGE TO THE SYSTEM.

- (14) Do these steps to put the pitot probe [9] into position:

- (a) Hold the probe strut [8].

- (b) Put the pitot hose fitting [11] and electrical connector [6] in the installation hole.

- 1) Make sure there is not a loop or downward oriented dip in the flexible pitot hose.

NOTE: A loop or downward oriented dip in the flexible pitot hose can cause water accumulation. Water accumulation can cause an erratic airspeed indication, resulting in an Indicated Airspeed (IAS) disagree message.

- 2) Tighten the pitot hose fitting [11] (TASK 20-50-11-910-801),  
(Table 20-50-11-993-820).

- 3) Connect the electrical connector [6].

- (c) Put the pitot probe [9] into position on the airplane skin.

- 1) Measure the baseplate [1] to skin misfair at the forward and aft edges of the baseplate [1] to be within +/-0.040 in. (1.0 mm).

SUBTASK 34-11-01-420-011

- (15) Install the screws [7] in the baseplate [1] of the pitot probe [9].

- (a) Tighten the screws [7] to 32 in-lb (3.6 N·m) to 39 in-lb (4.4 N·m).

SUBTASK 34-11-01-760-001

- (16) Measure the resistance between the strut of the pitot probe [9] and the airplane skin with a non-intrinsically safe bonding meter, COM-614.

- (a) If the resistance is more than 0.010 ohms, do these steps:

- 1) Remove the pitot probe [9].

- 2) Clean the bonding surfaces, including the countersunk holes in the pitot probe [9] (SWPM 20-20-00).

- 3) Replace the screws with new screws.

- 4) Install the pitot probe [9].

- 5) Measure the resistance between the strut of the pitot probe [9] and the airplane skin with a non-intrinsically safe bonding meter, COM-614.

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- 6) If the resistance is more than 0.010 ohms, do these steps:
- Remove the pitot probe [9].
  - Replace the nutplates and rivets that attach the pitot probe [9] (SRM 51-40-02).
  - Install the pitot probe [9] and make sure the bonding resistance is not more than 0.010 ohm.

SUBTASK 34-11-01-860-002

- | (17) Remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

**G. Installation Test**

SUBTASK 34-11-01-860-003

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

SUBTASK 34-11-01-790-001

- (2) Do the leak check for the applicable pitot probe [9]:
- For the left pitot probe, do this task: Left Pitot System Leak Test, TASK 34-11-00-790-810.
  - For the right pitot probe, do this task: Right Pitot System Leak Test, TASK 34-11-00-790-811.
  - For the alternate pitot probe, do this task: Alternate Pitot System Leak Test, TASK 34-11-00-790-812.

SUBTASK 34-11-01-860-178

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT
C	4	C00236	HEATERS ELEV PITOT LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

- (a) Make sure the amber OVERHEAT lights on the window and pitot heat module go off.

SUBTASK 34-11-01-860-173

- (4) Put the PROBE HEAT A switch in the ON position.
- Make sure the CAPT PITOT, L ELEV PITOT, L ALPHA VANE, and TEMP PROBE lights on the window and pitot heat module go off.

SUBTASK 34-11-01-860-174

- (5) Put the PROBE HEAT B switch in the ON position.

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- (a) Make sure the F/O PITOT, R ELEV PITOT, R ALPHA VANE, and AUX PITOT lights on the window and pitot heat module go off.

**WARNING:** DO NOT TOUCH THE AIR DATA SENSORS. THE SENSORS CAN GET VERY HOT. THE SENSORS CAN BURN YOU.

- (b) Make sure the air data sensor heaters get warm. Here are some optional ways to do this:

**NOTE:** You will need a work platform, COM-1523 or equivalent to get access to the elevator pitot probe. If you use an infrared or thermal imager to check for heat, then you do not need the stand.

- 1) Spray the air data sensors with water to check for heat.
- 2) Measure the temperature of the sensor with an infrared or contact thermometer.
- 3) Look at the sensor with an infrared or thermal imager.

SUBTASK 34-11-01-860-177

- (6) Put the PROBE HEAT switches in the AUTO position.

SUBTASK 34-11-01-390-002

**CAUTION:** DO NOT USE TOO MUCH SEALANT. TOO MUCH SEALANT CAN CAUSE DAMAGE WHEN YOU REMOVE THE PROBE. IF YOU DO NOT USE SUFFICIENT SEALANT, CORROSION CAN OCCUR.

- (7) Apply an aerodynamic fillet seal to the gap between the baseplate [1] and the airplane skin with sealant, A00247, (Aerodynamic Smoother Application, TASK 51-31-00-390-806).

**NOTE:** It is not necessary to apply the sealant immediately, if the cure time will cause a flight delay. But, you must apply the sealant as soon as possible to keep moisture out of the area between the probe and airplane skin. The sealant deferral must not exceed a maximum of eight weeks.

- (a) Make sure the baseplate [1] and sealant are flat with the airplane skin.

———— END OF TASK ————

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PITOT PROBE - INSPECTION/CHECK

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) A inspection of the pitot probe.
- C. Replace the pitot probe for one or more of the following conditions:
  - (1) The flight crew sees a cross panel airspeed difference that is not acceptable.
  - (2) The damage or wear limits are out of tolerance.

**TASK 34-11-01-200-804**

**2. Pitot Probe - Detailed Inspection**

(Figure 601)

NOTE: This procedure is a scheduled maintenance task.

**A. Location Zones**

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

**B. Pitot Probe Inspection**

SUBTASK 34-11-01-860-167

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

SUBTASK 34-11-01-210-006

- (2) Visually examine the pitot probe for damage or unwanted material in the drain holes, the pitot opening, or the contour of the probe.

SUBTASK 34-11-01-220-017

- (3) Make sure the edge of the pitot opening is sharp.

SUBTASK 34-11-01-220-018

- (4) Make sure the inner surface of the probe tip is smooth and rounded.

SUBTASK 34-11-01-220-019

- (5) Make sure that the outer surface of the probe tip is smooth and rounded.

SUBTASK 34-11-01-220-020

- (6) Make sure the leading edge of the pitot probe does not have nicks.

SUBTASK 34-11-01-220-021

- (7) Make sure the leading edge of the pitot probe axis (pitot scarf) is even.

SUBTASK 34-11-01-220-022

- (8) If the detailed inspection of the pitot probe is not satisfactory, do a special detailed inspection of the pitot probe (TASK 34-11-01-200-803).

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SUBTASK 34-11-01-860-168

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

———— END OF TASK ————

**TASK 34-11-01-200-803**

**3. Pitot Probe - Special Detailed Inspection**

(Figure 601)

**A. General**

- (1) You can use a micrometer or you can use gages or wires to measure damage to the tip and the leading edge of the pitot probe. To measure most accurately, a micrometer is recommended. To use a micrometer, you must remove the pitot probe from the airplane.

**B. References**

<u>Reference</u>	<u>Title</u>
34-11-01-000-801	Pitot Probe - Removal (P/B 401)
34-11-01-400-801	Pitot Probe - Installation (P/B 401)

**C. Tools/Equipment**

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

<u>Reference</u>	<u>Description</u>
COM-2039	Micrometer, Optical (Min Depth .02 inch and Accuracy +/- .0005 Inch) Part #: 8400K Supplier: 65956
	Part #: MODEL 966A1 Supplier: 0ZYB5
	Part #: MODEL 966A1 Supplier: 88277
	Opt Part #: 8400PCK Supplier: 65956

**D. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**E. Pitot Probe Inspection**

(Figure 601)

SUBTASK 34-11-01-860-169

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT



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SUBTASK 34-11-01-210-004

- (2) Visually examine the pitot probe for damage or unwanted material in the drain holes, the pitot opening, or the contour of the probe.

SUBTASK 34-11-01-020-061

- (3) If you will use a micrometer, COM-2039, for the inspection of the pitot probe, remove the pitot probe. To remove it, do this task: Pitot Probe - Removal, TASK 34-11-01-000-801.

NOTE: When the pitot probe is on the airplane, you cannot hold the micrometer sufficiently stable to measure accurately. If you will use gages or wires for the inspection, it is not necessary to remove the pitot probe.

NOTE: Gages or wires, 0.015 to 0.470 inch (0.381 mm to 11.938 mm), can be used to measure nicks, dents, or scratches in or around the opening of a pitot probe.

SUBTASK 34-11-01-220-012

- (4) Make sure the edge of the pitot opening is sharp.

NOTE: New probes are sharpened to 0.010 inch (0.254 mm) maximum flat.

- (a) Replace the pitot probe if the pitot opening dimension is 0.025 inch (0.635 mm) or more. These are the tasks:

Pitot Probe - Removal, TASK 34-11-01-000-801,

Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-220-013

**WARNING:** IF PITOT PROBE DAMAGE OR WORN AREAS ARE MORE THAN THE LIMITS SHOWN IN FIGURE 601, YOU MUST REPLACE THE PROBE. IF YOU DO NOT REPLACE THE PROBE, ERRORS IN AIR DATA CAN HAVE AN UNWANTED EFFECT ON SAFE FLIGHT.

- (5) Make sure the inner surface of the probe tip is smooth and rounded.

- (a) Make sure the pitot probe has no dents more than 0.060 inch (1.522 mm) in depth.

NOTE: The dent can be at any location around the opening, but must not affect more than 1/5 (20%) of the lip area.

- (b) Replace the pitot probe if the damage is more than this limit.

These are the tasks:

Pitot Probe - Removal, TASK 34-11-01-000-801,

Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-220-014

- (6) Make sure that the outer surface of the probe tip is smooth and rounded.

- (a) Replace the pitot probe if the tip is flared out more than 0.470 inch (11.938 mm).

These are the tasks:

Pitot Probe - Removal, TASK 34-11-01-000-801,

Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-220-015

- (7) Make sure the leading edge of the pitot probe does not have nicks.

- (a) Replace the pitot probe if there are two or more nicks between 0.050 and 0.060 inch (1.27-1.52 mm) in depth.

These are the tasks:

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Pitot Probe - Removal, TASK 34-11-01-000-801,

Pitot Probe - Installation, TASK 34-11-01-400-801.

- (b) Replace the pitot probe if there is a nick more than 0.060 inch (1.52 mm) in depth.

These are the tasks:

Pitot Probe - Removal, TASK 34-11-01-000-801,

Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-220-016

- (8) Make sure the leading edge of the pitot scarf is even.

- (a) Replace the pitot probe if the side to side difference is 0.015 inch (0.381 mm) or more.

These are the tasks:

Pitot Probe - Removal, TASK 34-11-01-000-801,

Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-420-044

- (9) If you removed the pitot probe for the inspection, re-install it. To install it, do this task: Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-860-170

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

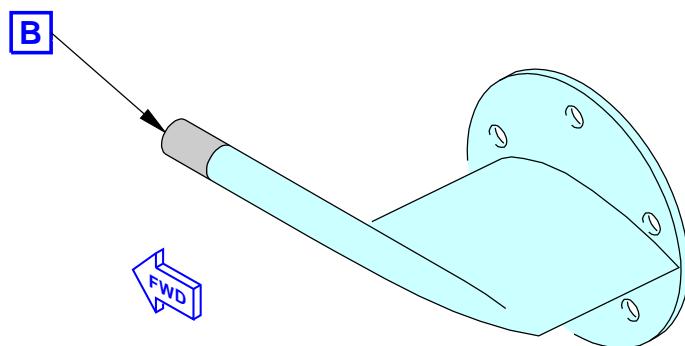
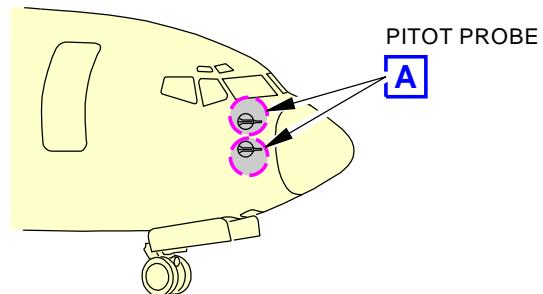
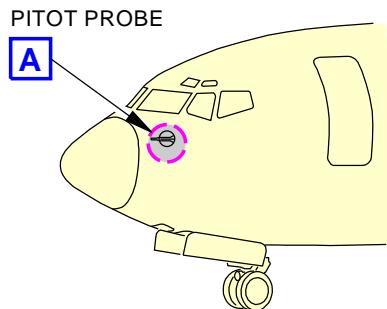
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PITOT PROBE (EXAMPLE)



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**Pitot Probe Inspection**  
Figure 601/34-11-01-990-802 (Sheet 1 of 2)

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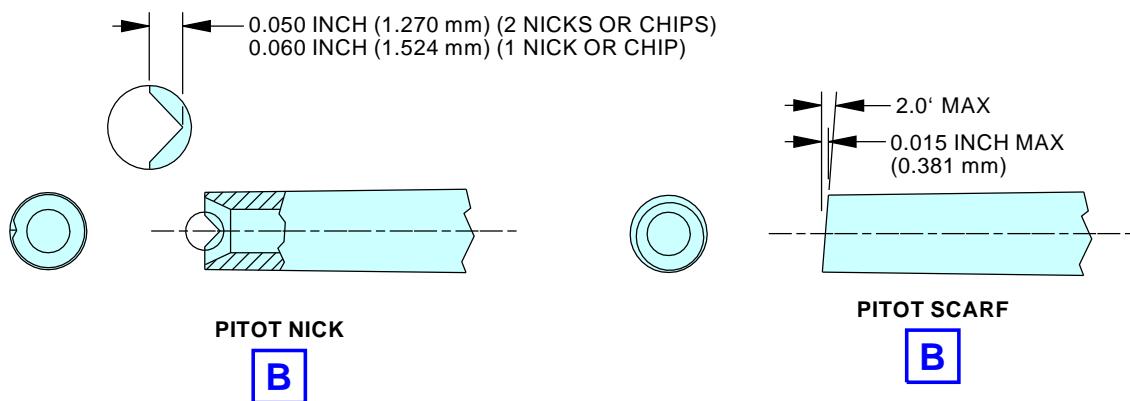
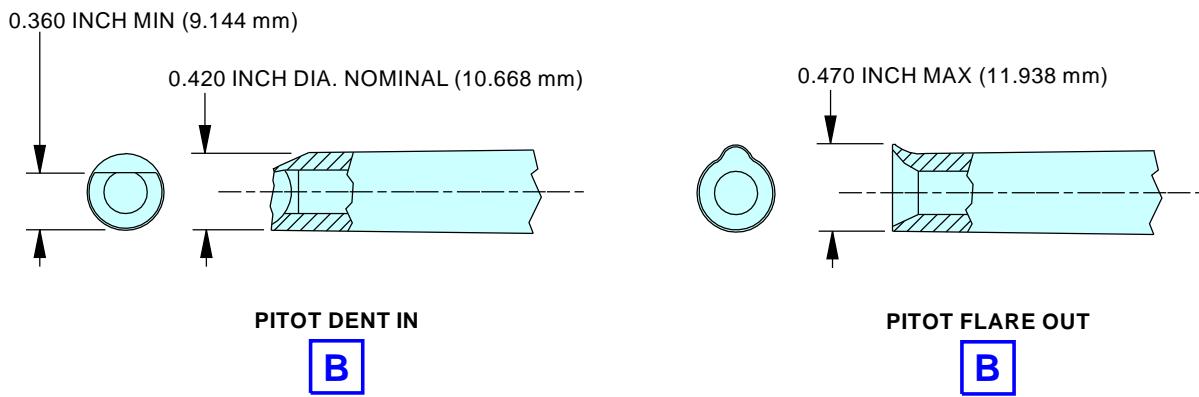
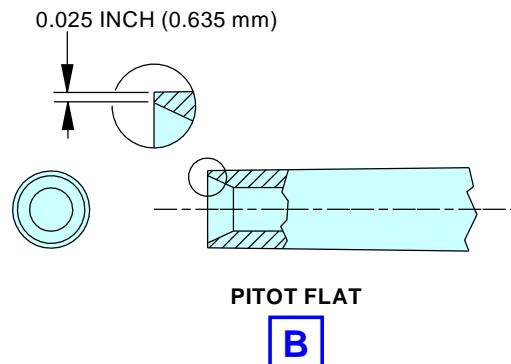
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**Pitot Probe Inspection**  
Figure 601/34-11-01-990-802 (Sheet 2 of 2)

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PITOT PROBE - CLEANING/PAINTING

1. General

- A. This procedure shows how to clean the inner and outer surfaces of the pitot probe.

**TASK 34-11-01-100-801**

2. Pitot Probe Cleaning

A. General

**CAUTION:** DO NOT PAINT THE PITOT PROBE. PAINT ON THE PITOT PROBE CAN CAUSE THE PITOT SYSTEM TO MALFUNCTION.

- (1) The pitot probe must not be painted.
- (2) To make sure that the probes do not have any damage, do this task: Pitot Probe - Special Detailed Inspection, TASK 34-11-01-200-803.

B. References

Reference	Title
34-11-01-000-801	Pitot Probe - Removal (P/B 401)
34-11-01-200-803	Pitot Probe - Special Detailed Inspection (P/B 601)
34-11-01-400-801	Pitot Probe - Installation (P/B 401)

C. Tools/Equipment

Reference	Description
STD-77	Air Source - Regulated, Dry Filtered, 0-50 psig
STD-1108	Bit - Drill, 0.026 Inch Diameter
STD-1109	Bit - Drill, 0.031 Inch Diameter

D. Consumable Materials

Reference	Description	Specification
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

E. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

F. Access Panels

Number	Name/Location
112A	Forward Access Door

G. Clean the Inner Surface of the Pitot Probe

SUBTASK 34-11-01-010-001

- (1) To get access to the applicable pitot hose, open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 34-11-01-020-001

- (2) Disconnect the hose from the pitot probe.

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SUBTASK 34-11-01-160-001

**CAUTION:** DO NOT USE MORE THAN 60 PSI (414 KPA) OF DRY, COMPRESSED AIR IN THE PITOT PROBE. AIR PRESSURE MORE THAN 60 PSI (414 KPA) CAN CAUSE DAMAGE TO THE PITOT PROBE.

- (3) Use the 0-50 psig dry filtered regulated air source, STD-77 to force air through the line and out the ports on the pitot probe.

SUBTASK 34-11-01-170-001

- (4) If unwanted material remains, do the steps that follow:
  - (a) Do this task: Pitot Probe - Removal, TASK 34-11-01-000-801.
  - (b) Soak or flush the unit with water until it is clean.
  - (c) Drain the probe.
  - (d) Do this task: Pitot Probe - Installation, TASK 34-11-01-400-801.

SUBTASK 34-11-01-140-001

**CAUTION:** MAKE SURE THE DRILL BIT DOES NOT MAKE THE DRAIN HOLE LARGER WHEN YOU CLEAN IT. DAMAGE TO THE PITOT PROBE CAN OCCUR.

- (5) If the forced air and soak methods do not clean the pitot probe, insert first a small 0.026 Inch diameter drill bit, STD-1108 and then a slightly larger 0.031 Inch diameter drill bit, STD-1109 into the drain hole.

SUBTASK 34-11-01-420-045

- (6) Connect the hose to the pitot probe.

SUBTASK 34-11-01-410-001

- (7) Close this access panel:

**Number      Name/Location**

112A      Forward Access Door

**H. Clean the Outer Surface of the Pitot Probe**

SUBTASK 34-11-01-140-002

**CAUTION:** DO NOT PERMIT SOLVENTS, OIL, OR GREASE TO GET ON THE PITOT PROBE. SOLVENTS, OIL, OR GREASE CAN CAUSE DAMAGE TO THE PITOT PROBE.

- (1) Use clean water to remove unwanted materials from the outer surface of the pitot probe.

SUBTASK 34-11-01-140-003

- (2) Dry the pitot probe with a cotton wiper, G00034.

———— END OF TASK ————



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**STATIC PORT - REMOVAL/INSTALLATION**

**1. General**

- A. This procedure has these tasks:
- (1) A removal of the primary static port
  - (2) An installation of the primary static port
  - (3) A removal of the alternate static port
  - (4) An installation of the alternate static port.

**TASK 34-11-02-020-801**

**2. Primary Static Port Removal**

(Figure 401)

**A. References**

Reference	Title
20-10-44-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)
25-21-46-000-801	Sidewall Panel - Removal (P/B 401)
25-22-00-000-801	Passenger Seat - Removal (P/B 401)
25-80-00-000-801	Insulation Blanket Removal (P/B 401)

**B. Location Zones**

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**C. Removal Procedure**

**SUBTASK 34-11-02-010-005**

- (1) For the applicable passenger seats, do this task: Passenger Seat - Removal, TASK 25-22-00-000-801.

**SUBTASK 34-11-02-010-006**

- (2) For the applicable sidewall panel, do this task: Sidewall Panel - Removal, TASK 25-21-46-000-801.

**SUBTASK 34-11-02-010-007**

- (3) For the applicable insulation blanket, do this task: Insulation Blanket Removal, TASK 25-80-00-000-801.

**SUBTASK 34-11-02-020-017**

- (4) Loosen the union [9] that connects the hose [2] to the primary static port [6].

**SUBTASK 34-11-02-020-018**

**WARNING: DO NOT BEND OR TWIST THE HOSE [2] WHEN YOU DISCONNECT THE HOSE [2].  
A BENT OR TWISTED HOSE [2] CAN CAUSE THE STATIC SYSTEM TO  
MALFUNCTION.**

- (5) Disconnect the hose [2].

**SUBTASK 34-11-02-020-019**

- (6) Remove the union [9] from the primary static port [6].

**SUBTASK 34-11-02-020-020**

- (7) Remove the o-ring [8] from the primary static port [6].

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SUBTASK 34-11-02-020-021

- (8) Put a cap on the hose [2] to prevent contamination.

SUBTASK 34-11-02-020-022

- (9) Use the sealant removal tool to remove the sealant from around the primary static port [6] and retaining nut [3].

SUBTASK 34-11-02-020-023

- (10) For the lockwire [7] on the retaining nut [3], do this task: Lockwire, Cotter Pins, and Lockrings - Removal, TASK 20-10-44-000-801.

SUBTASK 34-11-02-020-024

**CAUTION:** DO NOT CAUSE DAMAGE TO THE OUTER SURFACE OF THE AIRPLANE SKIN.  
THIS CAN CAUSE THE STATIC SYSTEM TO BE INACCURATE.

- (11) Remove the retaining nut [3], washer [4] and washer [5].

SUBTASK 34-11-02-020-025

- (12) Remove the primary static port [6] from the mounting hole.

———— END OF TASK ————

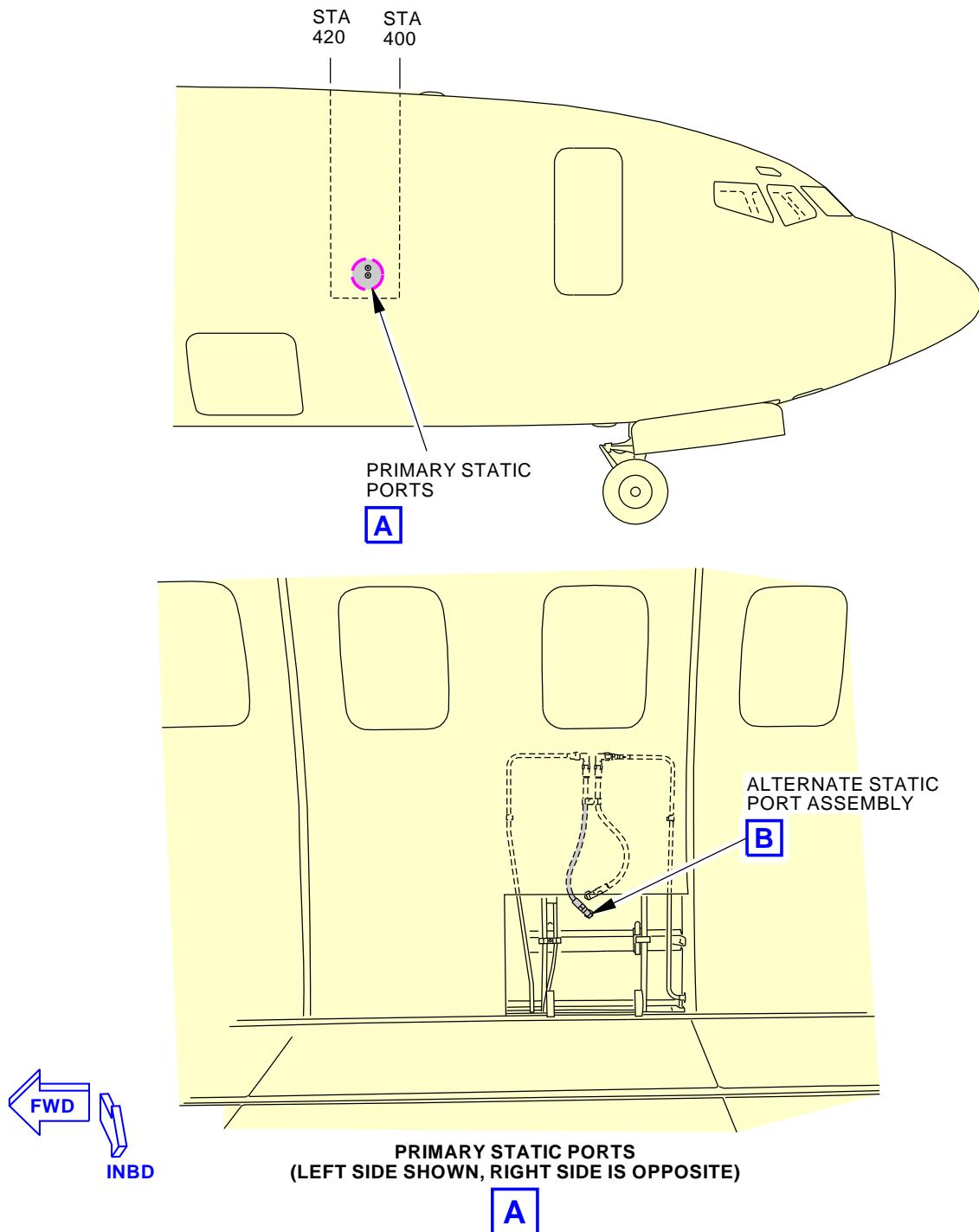
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Primary Static Port Installation  
Figure 401/34-11-02-990-802 (Sheet 1 of 2)

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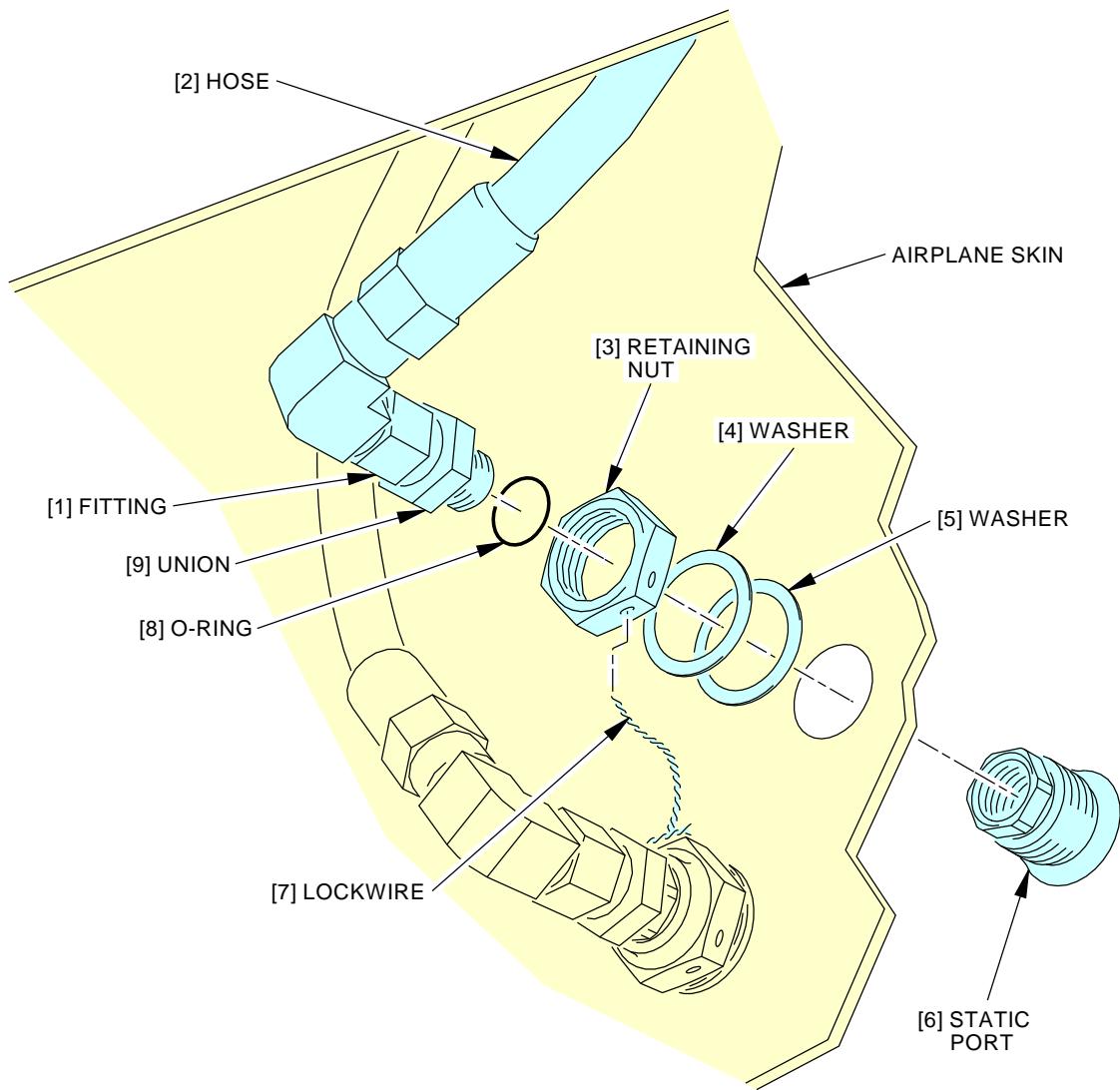
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**PRIMARY STATIC PORT ASSEMBLY  
(EXAMPLE)**

**B**

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**Primary Static Port Installation**  
**Figure 401/34-11-02-990-802 (Sheet 2 of 2)**

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AKS ALL

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**TASK 34-11-02-400-801**

**3. Primary Static Port Installation**

(Figure 401)

**A. References**

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
20-50-11-910-801	Standard Torque Values (P/B 201)
25-21-46-400-801	Sidewall Panel - Installation (P/B 401)
25-22-00-400-802	Passenger Seat - Installation (P/B 401)
25-80-00-400-801	Insulation Blanket Installation (P/B 401)
34-11-00-790-804	Left Static System Low-range Leak Test (P/B 501)
34-11-00-790-806	Right Static System Low-range Leak Test (P/B 501)
34-11-02-200-801	Static Port - Special Detailed Inspection (P/B 601)
51-21-95-300-801	Alodine Treatment Application (P/B 701)
51-31-00-390-805	Fastener Seal Application (P/B 201)
SRM 51-10-01	Structural Repair Manual

**B. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

**C. Location Zones**

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**D. Installation Procedure**

SUBTASK 34-11-02-390-001

- (1) Apply sealant, A00247, on the inner surface of the static port installation hole.

SUBTASK 34-11-02-420-001

- (2) Put the primary static port in the mounting hole.

SUBTASK 34-11-02-420-002

- (3) Install the washer [5], washer [4] and retaining nut [3] on the primary static port [6].

SUBTASK 34-11-02-420-003

- (4) Tighten the retaining nut [3] to 100 in-lb (11.3 N·m)-105 in-lb (11.9 N·m).

SUBTASK 34-11-02-420-004

- (5) For the retaining nut [3], do this task: Lockwire, Cotter Pins, and Lockrings - Installation, TASK 20-10-44-400-801.

SUBTASK 34-11-02-420-005

- (6) Make the primary static port flush with the airplane skin to + 0.003/- 0.00 inch (+0.076/-0.00 mm).

- (a) Use the microshaving tool, ZT306, to make the static port flush (SRM 51-10-01).

SUBTASK 34-11-02-220-003

- (7) Make sure that there are no scratches, burrs, or deformations on the static port finish and around the sensing holes in the primary static port.

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SUBTASK 34-11-02-210-002

- (8) Make sure that there is no unwanted material in the holes of the primary static port.

SUBTASK 34-11-02-620-001

- (9) For the surface of the primary static port, do this task: Alodine Treatment Application, TASK 51-21-95-300-801.

SUBTASK 34-11-02-420-006

- (10) Install the o-ring [8] on the union [9].

SUBTASK 34-11-02-420-007

- (11) Install the union [9] on the primary static port [6].

**CAUTION:** APPLY COUNTER PRESSURE TO THE STATIC PORT. IF YOU DO NOT, THE STATIC PORT CAN ROTATE AND CAUSE INCORRECT OPERATION OF THE STATIC SYSTEM.

- (a) Make sure that you apply counter pressure to the primary static port while you install the union [9].

SUBTASK 34-11-02-420-041

- (12) Tighten the union [9] (Standard Torque Values, TASK 20-50-11-910-801).

SUBTASK 34-11-02-390-002

- (13) For the retaining nut [3] and the primary static port, do this task: Fastener Seal Application, TASK 51-31-00-390-805.

SUBTASK 34-11-02-420-008

- (14) Remove the cap from the hose [2].

SUBTASK 34-11-02-420-009

**CAUTION:** DO NOT BEND OR TWIST THE HOSE [2] WHEN YOU CONNECT THE HOSE [2]. A BENT OR TWISTED HOSE [2] CAN CAUSE THE STATIC SYSTEM TO MALFUNCTION.

- (15) Connect the hose [2] to the primary static port.

**CAUTION:** APPLY COUNTER PRESSURE TO THE STATIC PORT. IF YOU DO NOT, THE STATIC PORT CAN ROTATE AND CAUSE INCORRECT OPERATION OF THE STATIC SYSTEM.

- (a) Make sure that you apply counter pressure to the union [9] while you install the fitting [1].

SUBTASK 34-11-02-420-010

- (16) Tighten the fitting [1] (Standard Torque Values, TASK 20-50-11-910-801).

SUBTASK 34-11-02-700-003

- (17) Do a detailed inspection of the primary static port. To do the inspection, do this task: Static Port - Special Detailed Inspection, TASK 34-11-02-200-801.

SUBTASK 34-11-02-790-001

- (18) For the primary static system, do the applicable leak test below:

- (a) Do this task: Left Static System Low-range Leak Test, TASK 34-11-00-790-804.  
(b) Do this task: Right Static System Low-range Leak Test, TASK 34-11-00-790-806.

SUBTASK 34-11-02-410-001

- (19) For the insulation blanket, do this task: Insulation Blanket Installation, TASK 25-80-00-400-801.

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SUBTASK 34-11-02-410-002

- (20) For the sidewall panel, do this task: Sidewall Panel - Installation, TASK 25-21-46-400-801.

SUBTASK 34-11-02-410-003

- (21) For the passenger seats, do this task: Passenger Seat - Installation, TASK 25-22-00-400-802.

————— END OF TASK ————

**AKS ALL; 737-600, 737-800 OR 737-900**

**TASK 34-11-02-000-803**

**4. Alternate Static Port Removal**

(Figure 402)

**A. References**

<b>Reference</b>	<b>Title</b>
20-10-44-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)
25-52-06-000-801	Cargo Compartment Sidewall Lining - Removal (P/B 401)

**B. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right



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**AKS ALL; 737-600, 737-800 OR 737-900 (Continued)**

**D. Removal Procedure**

SUBTASK 34-11-02-010-008

- (1) For the applicable cargo liner, do this task: Cargo Compartment Sidewall Lining - Removal, TASK 25-52-06-000-801.

SUBTASK 34-11-02-020-026

- (2) Loosen the fitting [1] that connects the hose [2] to the alternate static port [11].

SUBTASK 34-11-02-020-027

**CAUTION:** DO NOT BEND OR TWIST THE HOSE [2] WHEN YOU DISCONNECT THE HOSE [2].  
A BENT OR TWISTED HOSE [2] CAN CAUSE THE STATIC SYSTEM TO  
MALFUNCTION.

- (3) Disconnect the hose [2].

SUBTASK 34-11-02-020-028

- (4) Put a cap on the hose [2] to prevent contamination.

SUBTASK 34-11-02-020-029

- (5) Remove the fitting [1] from the alternate static port [11].

SUBTASK 34-11-02-020-030

- (6) Remove the o-ring [8] from the alternate static port [11].

SUBTASK 34-11-02-140-004

- (7) Use the sealant removal tool, COM-2481 to remove the sealant from around the alternate static port [11] and the retaining nut [3].

SUBTASK 34-11-02-020-031

- (8) For the lockwire [7] on the retaining nut [3], do this task: Lockwire, Cotter Pins, and Lockrings - Removal, TASK 20-10-44-000-801.

SUBTASK 34-11-02-020-032

**CAUTION:** DO NOT CAUSE DAMAGE TO THE OUTER SURFACE OF THE AIRPLANE SKIN.  
THIS CAN CAUSE THE STATIC SYSTEM TO BE INACCURATE.

- (9) Remove the retaining nut [3] and washer [9].

SUBTASK 34-11-02-020-033

- (10) Remove the alternate static port [11] from its mounting hole.

SUBTASK 34-11-02-020-034

- (11) Remove the laminated shim [10] from the assembly.

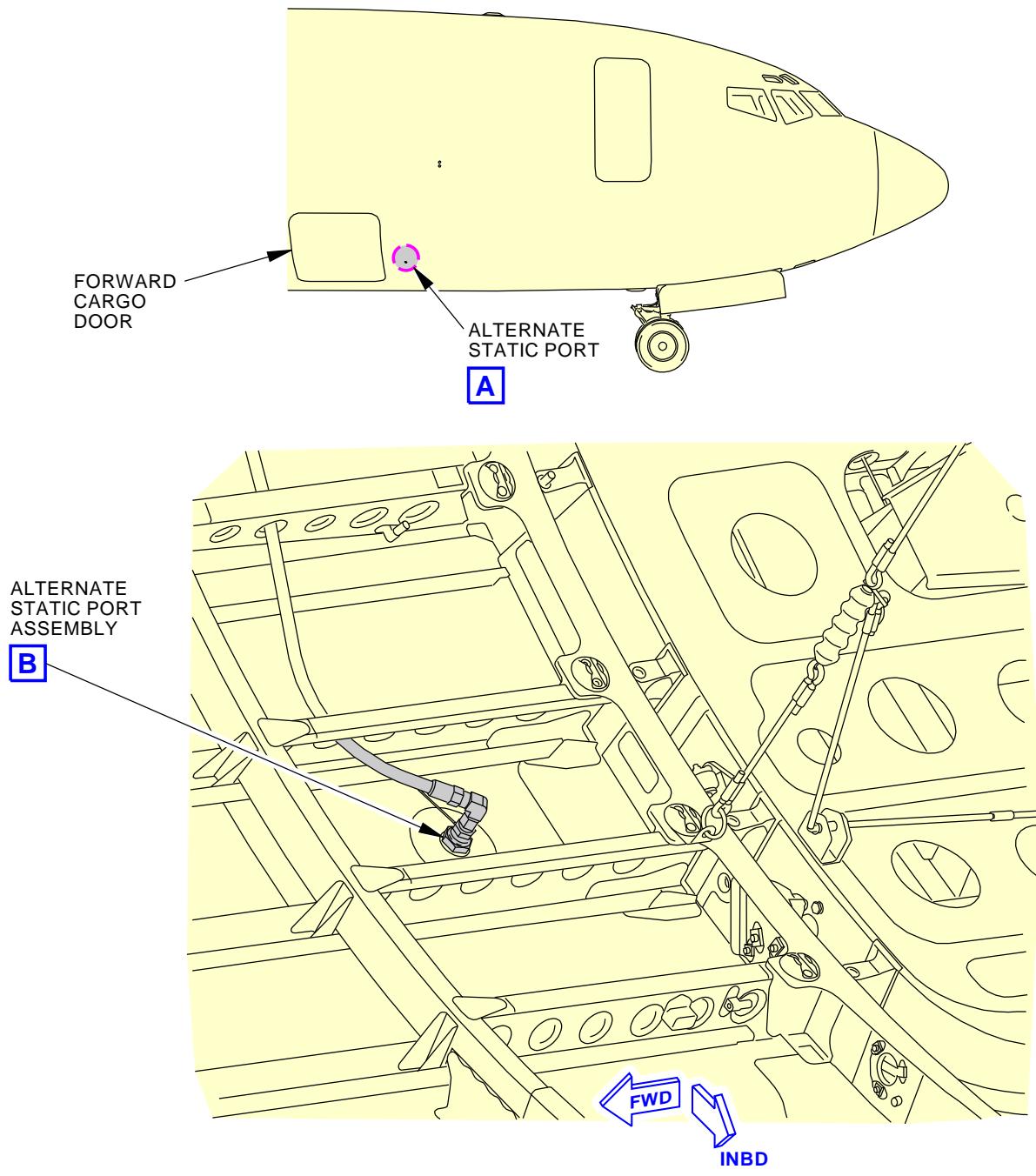
———— END OF TASK ————

EFFECTIVITY
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RIGHT SIDE ALTERNATE STATIC PORT LOCATION SHOWN  
(LEFT SIDE IS OPPOSITE)

A

H77635 S0006576530\_V2

Alternate Static Port Installation  
Figure 402/34-11-02-990-808 (Sheet 1 of 2)

EFFECTIVITY  
AKS ALL; 737-600, 737-800 OR 737-900

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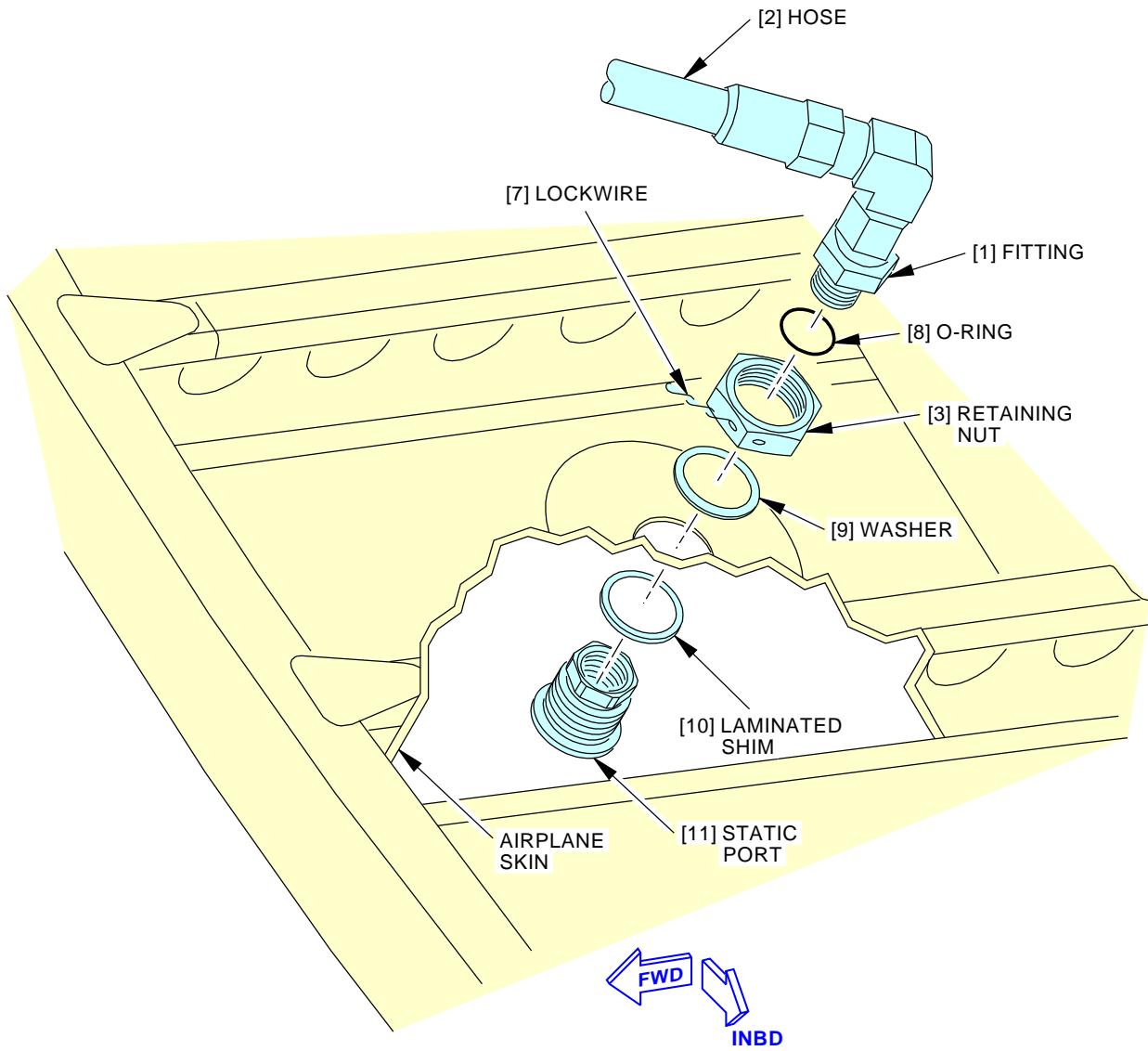
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ALTERNATE STATIC PORT ASSEMBLY

B

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Alternate Static Port Installation  
Figure 402/34-11-02-990-808 (Sheet 2 of 2)

EFFECTIVITY  
AKS ALL; 737-600, 737-800 OR 737-900

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AKS ALL; 737-600, 737-800 OR 737-900 (Continued)

**TASK 34-11-02-400-803**

**5. Alternate Static Port Installation**

(Figure 402)

**A. References**

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
20-50-11-910-801	Standard Torque Values (P/B 201)
25-52-06-400-801	Cargo Compartment Sidewall Lining - Installation (P/B 401)
34-11-00-790-808	Alternate Static System Low-range Leak Test (P/B 501)
34-11-02-200-801	Static Port - Special Detailed Inspection (P/B 601)
51-21-95-300-801	Alodine Treatment Application (P/B 701)
51-31-00-390-805	Fastener Seal Application (P/B 201)
SRM 51-10-01	Structural Repair Manual

**B. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

**C. Location Zones**

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right

**D. Installation Procedure**

SUBTASK 34-11-02-390-005

- (1) Apply sealant, A00247, on the inner surface of the static port installation hole.

SUBTASK 34-11-02-420-021

- (2) Install the laminated shim [10] on the alternate static port [11].

SUBTASK 34-11-02-420-022

- (3) Put the alternate static port [11] in the mounting hole.

SUBTASK 34-11-02-420-023

- (4) Install the washer [9] and retaining nut [3] on the alternate static port [11].

SUBTASK 34-11-02-420-024

- (5) Tighten the retaining nut [3] to 100 in-lb (11.3 N·m)-105 in-lb (11.9 N·m).

SUBTASK 34-11-02-420-025

- (6) For the retaining nut [3], do this task: Lockwire, Cotter Pins, and Lockrings - Installation, TASK 20-10-44-400-801.

SUBTASK 34-11-02-420-026

**CAUTION:** DO NOT MICROSHAVE THE COUNTERBORE ALTERNATE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE PORT WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (7) Make the alternate static port flush with the airplane skin to + 0.003/- 0.00 inch (+0.076/-0.00 mm).

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AKS ALL; 737-600, 737-800 OR 737-900 (Continued)

- (a) Add a laminated shim [10] if necessary, to make the static port flush (SRM 51-10-01).

SUBTASK 34-11-02-220-007

- (8) Make sure that there are no scratches, burrs, or deformations on the static port finish and around the sensing holes in the alternate static port [11].

SUBTASK 34-11-02-210-005

- (9) Make sure that there is no unwanted material in the holes of the alternate static port [11].

SUBTASK 34-11-02-140-005

- (10) For the surface of the alternate static port [11], do this task: Alodine Treatment Application, TASK 51-21-95-300-801.

SUBTASK 34-11-02-420-027

- (11) Install the o-ring [8] on the fitting [1].

SUBTASK 34-11-02-420-028

- (12) Install the fitting [1] on the alternate static port [11].

**CAUTION:** APPLY COUNTER PRESSURE TO THE STATIC PORT [11]. IF YOU DO NOT, THE STATIC PORT [11] CAN ROTATE AND CAUSE INCORRECT OPERATION OF THE STATIC SYSTEM.

- (a) Make sure that you apply counter pressure to the alternate static port [11] while you install the fitting [1].

SUBTASK 34-11-02-390-006

- (13) For the retaining nut [3] and the alternate static port [11], do this task: Fastener Seal Application, TASK 51-31-00-390-805.

SUBTASK 34-11-02-420-029

- (14) Remove the cap from the hose [2].

SUBTASK 34-11-02-420-030

**CAUTION:** DO NOT BEND OR TWIST THE HOSE [2] WHEN YOU CONNECT THE HOSE [2]. A BENT OR TWISTED HOSE [2] CAN CAUSE THE STATIC SYSTEM TO MALFUNCTION.

- (15) Connect the hose [2] to the alternate static port [11].

**CAUTION:** APPLY COUNTER PRESSURE TO THE STATIC PORT [11]. IF YOU DO NOT, THE STATIC PORT [11] CAN ROTATE AND CAUSE INCORRECT OPERATION OF THE STATIC SYSTEM.

- (a) Make sure that you apply counter pressure to the alternate static port [11] while you install the fitting [1].

SUBTASK 34-11-02-420-031

- (16) Tighten the fitting [1] (Standard Torque Values, TASK 20-50-11-910-801).

SUBTASK 34-11-02-700-002

- (17) Do a detailed inspection of the alternate static port. To do the inspection, do this task: Static Port - Special Detailed Inspection, TASK 34-11-02-200-801.

SUBTASK 34-11-02-790-003

- (18) For the alternate static system, do this task: Alternate Static System Low-range Leak Test, TASK 34-11-00-790-808.

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SUBTASK 34-11-02-410-005

- (19) For the applicable sidewall liner, do this task: Cargo Compartment Sidewall Lining - Installation, TASK 25-52-06-400-801.

———— END OF TASK ————

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**STATIC PORT - INSPECTION/CHECK**

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) A detailed inspection of the static ports and the skin surface near the port
  - (2) A special detailed inspection of the static ports and the skin surface near the port.

**TASK 34-11-02-200-803**

**2. Static Port - Detailed Inspection**

(Figure 601 or Figure 602)

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
34-11-02-000-803	Alternate Static Port Removal (P/B 401)
34-11-02-020-801	Primary Static Port Removal (P/B 401)
34-11-02-400-801	Primary Static Port Installation (P/B 401)
34-11-02-400-803	Alternate Static Port Installation (P/B 401)
SRM 51-10-01	Structural Repair Manual

**B. Location Zones**

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**C. Inspection Procedure**

**SUBTASK 34-11-02-220-011**

- (1) Visually examine the static port for damage.

**SUBTASK 34-11-02-210-008**

- (2) Visually examine the holes in the port for contamination.

**SUBTASK 34-11-02-900-008**

- (3) If there is a problem with a primary static port, replace the port.

(a) These are the tasks:

Primary Static Port Removal, TASK 34-11-02-020-801,

Primary Static Port Installation, TASK 34-11-02-400-801.

**SUBTASK 34-11-02-900-009**

- (4) If there is a problem with an alternate static port, replace the port.

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(a) These are the tasks:

Alternate Static Port Removal, TASK 34-11-02-000-803,

Alternate Static Port Installation, TASK 34-11-02-400-803.

**AKS ALL**

**SUBTASK 34-11-02-220-012**

- (5) Visually examine the surface of the airplane skin in a three inch radius around the port:

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- (a) Make sure that the surface of the skin is not rough.
- (b) If the skin is rough, refer to the Structural Repair Manual (SRM 51-10-01).

SUBTASK 34-11-02-200-001

- (6) If the detailed inspection of the static port is not satisfactory, do the Static Port - Special Detailed Inspection (TASK 34-11-02-200-801).

———— END OF TASK ——

**TASK 34-11-02-200-801**

**3. Static Port - Special Detailed Inspection**

(Figure 601 or Figure 602)

**A. References**

Reference	Title
34-11-02-020-801	Primary Static Port Removal (P/B 401)
34-11-02-400-801	Primary Static Port Installation (P/B 401)
SRM 51-10-01	Structural Repair Manual
SRM 51-10-03	Structural Repair Manual

**B. Location Zones**

Zone	Area
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**C. Inspection Procedure for the Primary Static Ports**

SUBTASK 34-11-02-220-001

- (1) Visually examine the primary static port for damage.
  - (a) Make sure that the depth of any scratches on the port are less than 0.010 inch (0.254 mm).

SUBTASK 34-11-02-210-001

- (2) Visually examine the holes in the port for contamination.

SUBTASK 34-11-02-900-001

- (3) If there is a problem with a primary static port, replace the port.

- (a) These are the tasks:

Primary Static Port Removal, TASK 34-11-02-020-801,

Primary Static Port Installation, TASK 34-11-02-400-801.

SUBTASK 34-11-02-900-003

- (4) Measure the step height of the primary static ports.

NOTE: The step height is the distance between the surface of the skin and the primary static ports.

- (a) Make sure the primary static port step height is 0.000 to +0.003 inch (0.076 mm) above the skin.

- (b) If the step height is too low, then replace the port.

These are the tasks:

Primary Static Port Removal, TASK 34-11-02-020-801,

Primary Static Port Installation, TASK 34-11-02-400-801.

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- (c) If the step height is too high, then decrease the port step height (SRM 51-10-03).

**SUBTASK 34-11-02-210-006**

- (5) Visually examine the airplane skin surface in a three inch radius around the static port.
- Make sure the surface of the skin is not rough.
  - If the skin is rough, refer to the Structural Repair Manual (SRM 51-10-01).

**SUBTASK 34-11-02-900-004**

- (6) Find the surface waviness of the airplane skin in the area of each primary static port:
- Find the primary static ports on each side of the airplane.
  - Measure the skin waviness in an approximate 3 inch (76.20 mm) area around each primary static port (Figure 601 or Figure 602).
    - Align the center of a metal 6-inch scale with the center of the static port.
    - Measure horizontally.
  - Examine the area for a dip or bulge condition (Table 601).

**Table 601/34-11-02-993-806**

<b>Skin Condition</b>	<b>Description</b>
Dip	The skin touches the two ends of the scale but not the middle part of the scale.
Bulge	The skin touches the middle part of the scale but not at the ends of the scale. There are two types of bulges:
Bulge with Movement	The 6-inch scale can easily move up or down on the bulge.
Bulge with Plateau	The 6-inch scale is on a level area of the bulge and is resistant to up and down movement.

- (d) Measure and record the waviness:

NOTE: Use the table in Figure 601 (Sheet 2) as an example. Record the data in the table in Figure 601 (Sheet 3). A dip value is always a negative number. A bulge value is always a positive number.

- For a dip, use these steps:
  - Use a feeler gage to measure the maximum clearance between the scale and the skin.
  - Record this data as a negative number.
- For a bulge with movement, use these steps:
  - Move the scale up or down to make the end touch the skin.
  - When one end touches the skin, use a feeler gage to measure the clearance between the high end of the scale and the skin.
  - Move the other end of the scale against the skin.
  - Measure the clearance.
  - Use the larger of the two values and record the data as a positive number.
- For a bulge with plateau, use these steps:
  - Put the scale on the level area.
  - Use a feeler gage to measure the clearance between the two ends of the scale and the skin.

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- c) Use the larger of the two values and record the data as a positive number.
- (e) Calculate the waviness for each of the four static ports.
  - 1) Use this formula if the measurements above and below the static ports are dips:
    - a) Waviness = (DIP above + DIP below)/2
  - 2) Use this formula if the measurements above and below the static ports are bulges with movement:
    - a) Waviness = (BULGE above + BULGE below)/4
  - 3) Use this formula if the measurements above and below the static ports are bulges with plateau:
    - a) Waviness = (BULGE above + BULGE below)/2
  - 4) Use this formula if one measurement is a dip and the other measurement is a bulge with movement:
    - a) Waviness = (DIP + 1/2 BULGE)/2
  - 5) Use this formula if one measurement is a dip and the other measurement is a bulge with plateau:
    - a) Waviness = (DIP + BULGE)/2
- (f) Make sure the waviness is not more than  $\pm 0.02$  inch ( $\pm 0.51$  mm).

**SUBTASK 34-11-02-900-005**

- (7) If the skin waviness is not satisfactory, go to the Structural Repair Manual (SRM 51-10-01), (SRM 51-10-03).

**SUBTASK 34-11-02-900-006**

- (8) Make sure rivets in a 3-inch radius from the center of a static pressure port are flush with the skin surface to a tolerance of +0.003 to -0.000 inch (+0.076 to -0.00 mm).
  - (a) If any of the conditions above are not satisfactory, go to the Structural Repair Manual (SRM 51-10-01), (SRM 51-10-03).

**D. Inspection Procedure for the Alternate Static Ports**

**SUBTASK 34-11-02-220-008**

- (1) Visually examine the alternate static port for damage.
  - (a) Make sure that the depth of any scratches on the port are less than 0.010 inch (0.254 mm).
- (2) Inspect the alternate static ports with the following steps:
  - (a) Put the edge of a steel rule horizontally across the center of the static pressure port.
  - (b) Make sure that the space between the skin and the steel rule does not exceed 0.010 inch (0.254 mm) 3 inches forward and aft of the center of the static port.
  - (c) Make sure rivets in a 3-inch radius from the center of a static pressure port are flush with the skin surface to a tolerance of +0.003 to -0.000 inch (+0.076 to -0.00 mm).
  - (d) Make sure the alternate static port step height is 0.000 to +0.003 inch (0.076 mm) above the skin.

**SUBTASK 34-11-02-220-009**

- (3) If any of the conditions above are not satisfactory, go to the Structural Repair Manual (SRM 51-10-01), (SRM 51-10-03).

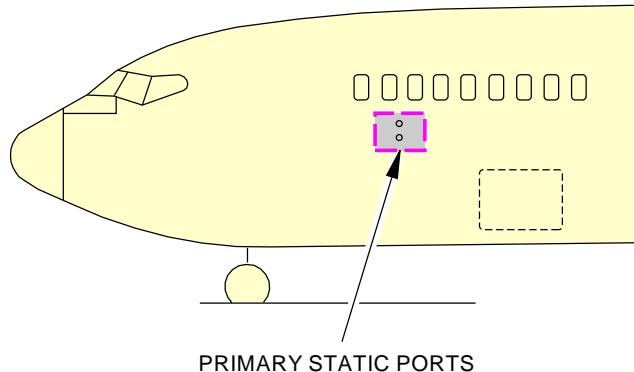
— END OF TASK —

EFFECTIVITY
AKS ALL

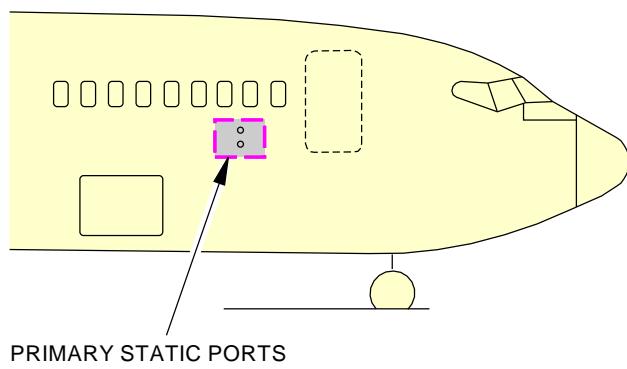
**34-11-02**



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(LEFT SIDE)



(RIGHT SIDE)

L49558 S0006576538\_V2

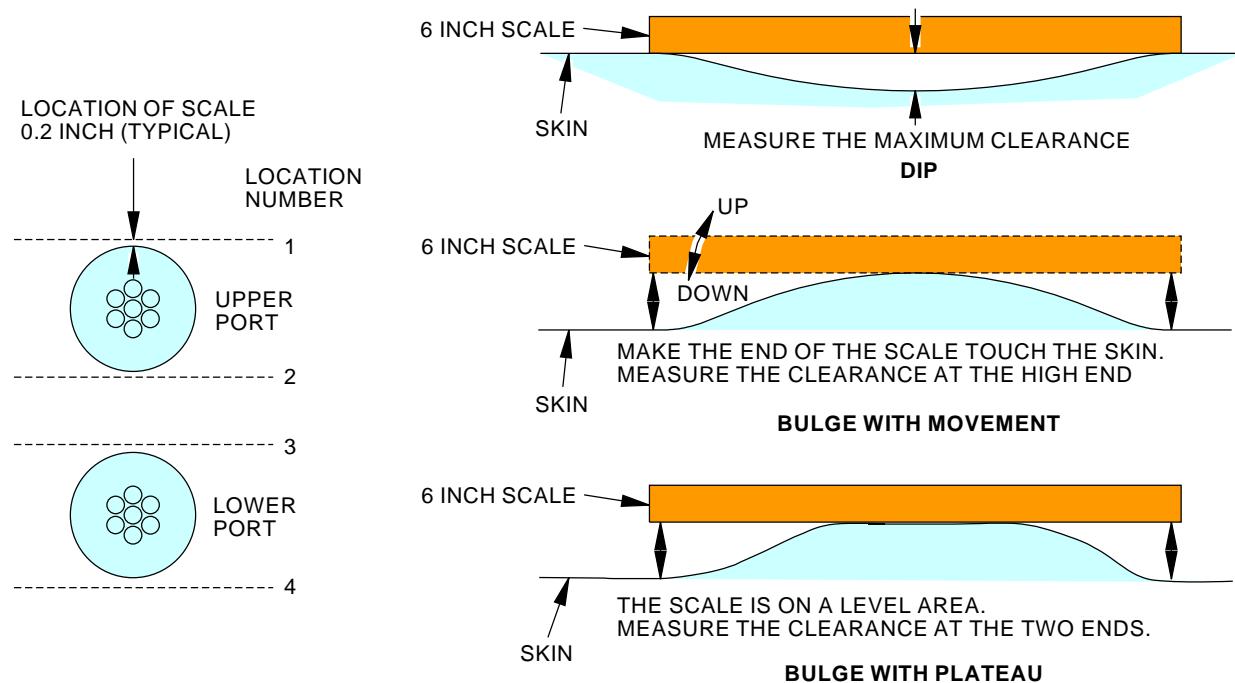
**Primary Static Port Inspection**  
**Figure 601/34-11-02-990-801 (Sheet 1 of 3)**

EFFECTIVITY  
AKS ALL

**34-11-02**



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LEFT SIDE								
	LOCATION	DIP	BULGE WITH MOVEMENT			BULGE WITH PLATEAU		
		MAXIMUM	FORWARD	AFT	MAXIMUM	FORWARD	AFT	MAXIMUM
UPPER PORT	1	-0.010						
	2	-0.004						
	WAVINESS	-0.007						
LOWER PORT	3		0.008	0.000	0.008			
	4		0.020	0.010	0.020			
	WAVINESS				0.007			
RIGHT SIDE								
	LOCATION	DIP	BULGE WITH MOVEMENT			BULGE WITH PLATEAU		
		MAXIMUM	FORWARD	AFT	MAXIMUM	FORWARD	AFT	MAXIMUM
UPPER PORT	1	-0.010						
	2	-0.000						
	WAVINESS	-0.005						
LOWER PORT	3					0.008	0.000	0.008
	4					0.020	0.010	0.020
	WAVINESS							0.014

**EXAMPLE CALCULATIONS OF SKIN WAVINESS MEASUREMENT  
NEAR PRIMARY STATIC PORTS**

L49588 S0006576539\_V2

**Primary Static Port Inspection  
Figure 601/34-11-02-990-801 (Sheet 2 of 3)**

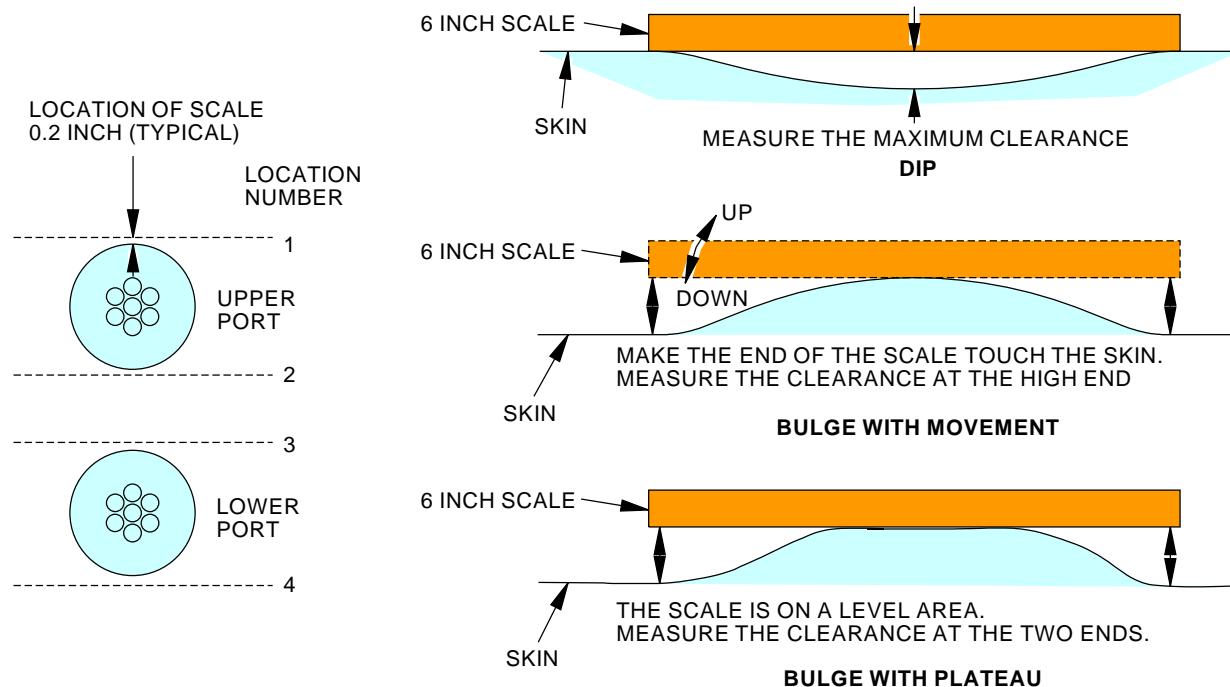
EFFECTIVITY  
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LEFT SIDE								
	LOCATION	DIP	BULGE WITH MOVEMENT			BULGE WITH PLATEAU		
			MAXIMUM	FORWARD	AFT	MAXIMUM	FORWARD	AFT
UPPER PORT	1							
	2							
	WAVINESS							
LOWER PORT	3							
	4							
	WAVINESS							
RIGHT SIDE								
	LOCATION	DIP	BULGE WITH MOVEMENT			BULGE WITH PLATEAU		
			MAXIMUM	FORWARD	AFT	MAXIMUM	FORWARD	AFT
UPPER PORT	1							
	2							
	WAVINESS							
LOWER PORT	3							
	4							
	WAVINESS							

FORM FOR SKIN WAVINESS MEASUREMENT NEAR PRIMARY STATIC PORTS

L49603 S0006576540\_V2

**Primary Static Port Inspection**  
**Figure 601/34-11-02-990-801 (Sheet 3 of 3)**

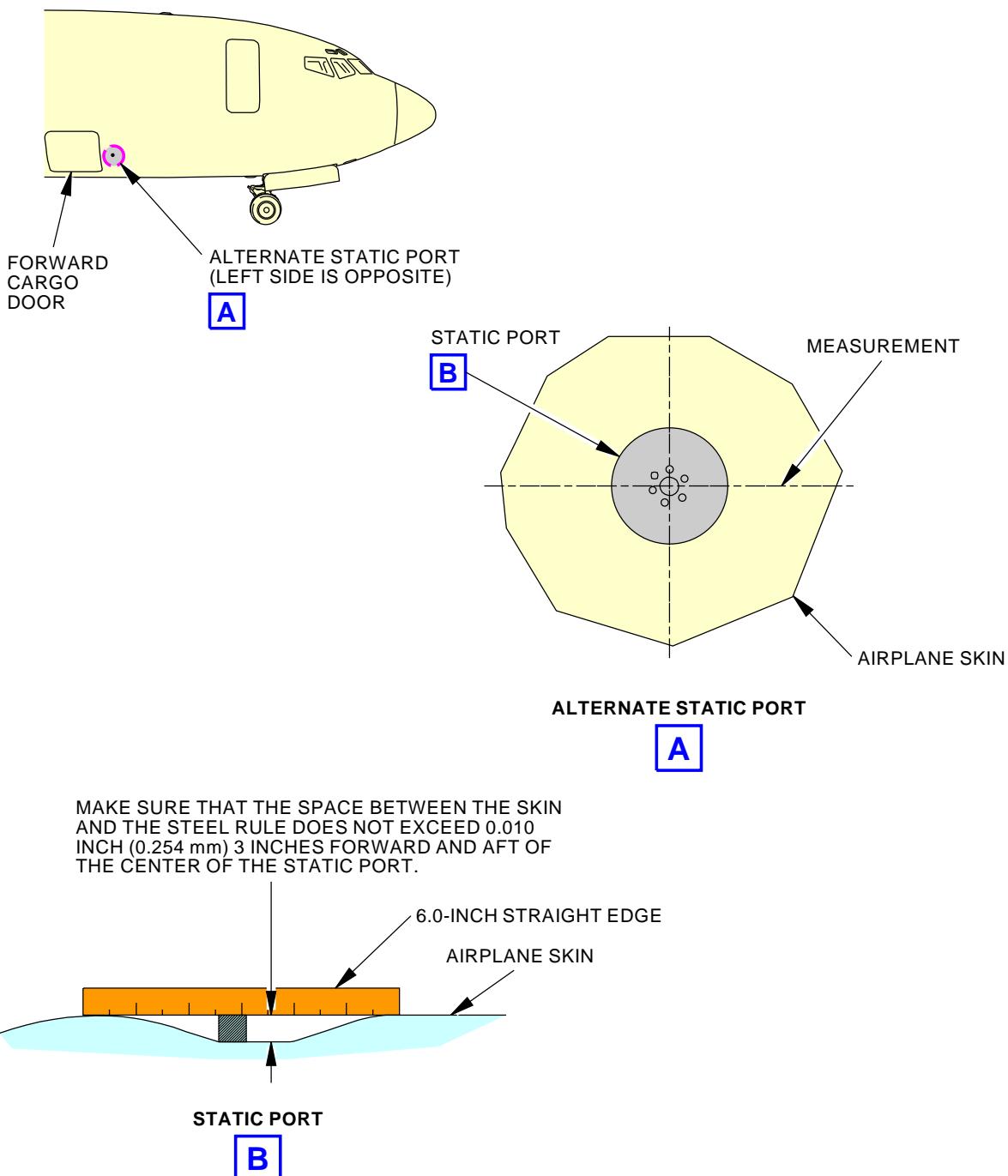
EFFECTIVITY  
AKS ALL

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G03179 S0006576541\_V3

**Alternate Static Port Inspection**  
**Figure 602/34-11-02-990-805**

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MACH AIRSPEED WARNING SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has this task:
  - (1) An aural warning discrete output test of the Mach Airspeed Warning System.  
NOTE: The aural warning discrete output test will not work if the airplane is facing into 30 knots or greater headwinds.

**TASK 34-16-00-730-801**

**2. Mach Airspeed Warning System - Aural Warning Discrete Output Test**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

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

**B. Location Zones**

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Prepare for the Aural Warning Discrete Output Test**

SUBTASK 34-16-00-860-002

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

**D. Test Procedure**

SUBTASK 34-16-00-710-001

- (1) Push and hold the NO. 1 MACH AIRSPEED WARNING TEST switch on the P5 panel.
  - (a) Make sure you hear the warning clacker.

SUBTASK 34-16-00-860-005

- (2) Release the NO. 1 MACH AIRSPEED WARNING TEST switch.
  - (a) Make sure you cannot hear the warning clacker.

SUBTASK 34-16-00-710-002

- (3) Push and hold the NO. 2 MACH AIRSPEED WARNING TEST switch on the P5 panel.
  - (a) Make sure you hear the warning clacker.

SUBTASK 34-16-00-860-006

- (4) Release the NO. 2 MACH AIRSPEED WARNING TEST switch.
  - (a) Make sure you cannot hear the warning clacker.

**E. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-16-00-840-001

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

———— END OF TASK ————

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AIR DATA INERTIAL REFERENCE SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Air Data Inertial Reference System (ADIRS) Deactivation
  - (2) Air Data Inertial Reference System (ADIRS) Activation
  - (3) Air Data Inertial Reference System (ADIRS) alignment from the FMC CDU
  - (4) An alignment of the ADIRS from the ISDU
  - (5) An IR radial position error check procedure
  - (6) A IR residual groundspeed error check procedure.

**TASK 34-21-00-040-801**

**2. Air Data Inertial Reference System - Deactivation**

**A. General**

- (1) This procedure removes electrical power to the ADIRS system.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-21-00-860-081

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

**D. ADIRS - Tryout**

NOTE: This tryout is to make sure the ADIRS system is in a zero energy state.

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SUBTASK 34-21-00-860-082

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-00-860-084

- (2) Do these steps to access the ADIRS maintenance index on the CDU:
- Push the INIT REF key.
    - Make sure the CDU shows the PERF INIT page.
  - Push the LSK 6L adjacent to the INDEX> prompt on the CDU.
    - Make sure the CDU shows the INIT REF INDEX 1/1 page.
  - Push the LSK 6R adjacent to the MAINT> prompt on the CDU.
    - Make sure the CDU shows the MAINT BITE INDEX 1/1 page.
  - Push the LSK 4L adjacent to the <ADIRS prompt on the CDU.
    - Make sure the CDU does not show the ADIRS BITE INDEX page.

———— END OF TASK ————

**TASK 34-21-00-440-801**

**3. Air Data Inertial Reference System - Activation**

**A. General**

- (1) This procedure adds electrical power to the ADIRS system.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right



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C. Procedure

SUBTASK 34-21-00-860-083

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

———— END OF TASK ————

**TASK 34-21-00-820-801**

4. Air Data Inertial Reference System - Alignment from the FMC CDU

A. General

- (1) This task provides instructions to align the air data inertial reference system (ADIRS) at regular latitude and high latitude.
- (a) Regular latitude alignment is from latitude 70.2 degrees South to latitude 70.2 degrees North. A regular latitude alignment takes 10 minutes.
- (b) High latitude alignment is from latitude 70.2 degrees to latitude 78.2 degrees North or South. The high latitude alignment takes 17 minutes.
- (c) Above the latitude of 78.2 degrees North and below the latitude of 78.2 degrees South, you cannot accurately align the ADIRS.
- (2) You cannot move the airplane while you align the ADIRS.
- (3) The local latitude and longitude are necessary to align the ADIRS.

B. References

<u>Reference</u>	<u>Title</u>
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-61-00-710-801	Flight Management Computer System - Operational Test (P/B 501)

C. Location Zones

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Procedure

SUBTASK 34-21-00-860-054

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

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SUBTASK 34-21-00-860-055

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-00-860-056

- (3) Make sure the Flight Management Computer System is on (TASK 34-61-00-710-801).

SUBTASK 34-21-00-820-001

- (4) Do these steps to align the ADIRS at regular latitude:

- (a) Set the mode select switches on the inertial reference system (IRS) mode select unit (MSU) to the NAV position.
  - 1) A regular latitude alignment takes 10 minutes. Make a note of the present time for later use in this procedure.
- (b) Make sure the ON DC lights on the IRS MSU come on for a short time.
- (c) Make sure the ALIGN lights on the IRS MSU come on.
- (d) Do these steps to enter the latitude and longitude from a control display unit (CDU):

NOTE: CDU data lines that permit a selection are identified with a caret (< or >). The CDU has 12 line-select-keys (LSK). Six keys are on each side of the display. LSK 1L thru 6L are on the left side, and LSK 1R thru 6R are on the right side.

- 1) Push the INIT REF key on the CDU.
- 2) Push the LSK 6L adjacent to the <INDEX prompt on the CDU.
  - a) Make sure the CDU shows the INIT/REF INDEX 1/1 page.
- 3) Push the LSK 2L adjacent to the <POS prompt on the CDU.
  - a) Make sure the CDU shows the POS INIT 1/3 page.
- 4) Put the latitude and longitude data in the scratch pad line of the CDU.

NOTE: Do not put a space between the latitude and longitude. The format of the latitude and longitude data is as follows:

Latitude and longitude: XDDMM.MYDDDDMM.M

Where:

X is N or S for latitude

Y is E or W for longitude

D is the number of degrees

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M is the number of minutes

- 5) Push the LSK 4R adjacent to the SET IRS POS> prompt on the CDU.
  - a) Make sure the CDU shows the latitude and longitude below the SET IRS POS line.
    - <1> Re-enter the same present position (latitude, longitude) again if the ALIGN lights start to flash.
- 6) After 10 minutes, make sure the ALIGN lights on the IRS MSU go off.

NOTE: The ADIRS is now aligned and in the navigation mode.

SUBTASK 34-21-00-820-002

- (5) Do these steps to align the ADIRS at high latitude:
  - (a) Set the mode select switches on the inertial reference system (IRS) mode select unit (MSU) to the ALIGN position.
    - 1) A high latitude alignment takes 17 minutes. Make a note of the present time for later use in this procedure.
  - (b) Make sure the ON DC lights on the IRS MSU come on for a short time.
  - (c) Make sure the ALIGN lights on the IRS MSU come on.
  - (d) Do these steps to enter the latitude and longitude from a control display unit (CDU):

NOTE: CDU data lines that permit a selection are identified with a caret (< or >). The CDU has 12 line-select-keys (LSK). Six keys are on each side of the display. LSK 1L thru 6L are on the left side, and LSK 1R thru 6R are on the right side.

    - 1) Push the INIT REF key on the CDU.
    - 2) Push the LSK 6L adjacent to the <INDEX prompt on the CDU.
      - a) Make sure the CDU shows the INIT/REF INDEX 1/1 page.
    - 3) Push the LSK 2L adjacent to the <POS prompt on the CDU.
      - a) Make sure the CDU shows the POS INIT 1/3 page.
    - 4) Put the latitude and longitude data in the scratch pad line of the CDU.

NOTE: Do not put a space between the latitude and longitude. The format of the latitude and longitude data is as follows:

Latitude and longitude: XDDMM.MYDDDDMM.M

Where:

X is N or S for latitude

Y is E or W for longitude

D is the number of degrees

M is the number of minutes
- 5) Push the LSK 4R adjacent to the SET IRS POS> prompt on the CDU.
  - a) Make sure the CDU shows the latitude and longitude below the SET IRS POS line.
    - <1> Re-enter the same present position (latitude, longitude) again if the ALIGN lights start to flash.
- 6) After 17 minutes, set the mode select switches on the IRS MSU to the NAV position.

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- a) Make sure the ALIGN lights on the IRS MSU go off.

NOTE: The ADIRS is now aligned and in the navigation mode.

———— END OF TASK ————

**TASK 34-21-00-820-802**

**5. Air Data Inertial Reference System - Alignment from the ISDU**

**A. General**

- (1) This task provides instructions to align the air data inertial reference system (ADIRS) from the inertial system display unit (ISDU) at regular latitude and high latitude.
- (a) Regular latitude alignment is from latitude 70.2 degrees South to latitude 70.2 degrees North. A regular latitude alignment takes 10 minutes.
- (b) High latitude alignment is from latitude 70.2 degrees to latitude 78.2 degrees North or South. The high latitude alignment takes 17 minutes.
- (c) Above the latitude of 78.2 degrees North and below the latitude of 78.2 degrees South, you cannot accurately align the ADIRS.
- (2) You cannot move the airplane while you align the ADIRS.
- (3) The local latitude and longitude are necessary to align the ADIRS.

**B. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-61-00-710-801	Flight Management Computer System - Operational Test (P/B 501)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Procedure**

SUBTASK 34-21-00-860-057

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

SUBTASK 34-21-00-860-058

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	14	C01008	ADIRU RIGHT AC

———— EFFECTIVITY ————  
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(Continued)

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-00-860-059

- (3) Make sure the Flight Management Computer System is on (TASK 34-61-00-710-801).

SUBTASK 34-21-00-820-003

- (4) Do these steps to align the ADIRS at regular latitude:

- (a) Set the mode select switches on the inertial reference system (IRS) mode select unit (MSU) to the NAV position.
  - 1) A regular latitude alignment takes 10 minutes. Make a note of the present time for later use in this procedure.
- (b) Make sure the ON DC lights on the IRS MSU come on for a short time.
- (c) Make sure the ALIGN lights on the IRS MSU come on.
- (d) Do these steps to enter the latitude and longitude from the ISDU:
  - 1) Set the DSPL SEL switch on the ISDU to the PPOS position.
  - 2) Push the applicable N or S key on the ISDU.
  - 3) Put in the degrees and minutes of the local latitude on the ISDU:
    - a) Make sure the latitude shows on the left side of the ISDU.
    - b) Make sure the ENT key light on the ISDU comes on.
  - 4) Push the ENT key on the ISDU to transmit the latitude to the ADIRUs.
  - 5) Push the applicable W or E key on the ISDU.
  - 6) Put in the degrees and minutes of the local longitude on the ISDU:
    - a) Make sure the longitude shows on the right side of the ISDU.
    - b) Make sure the ENT key light on the ISDU comes on.
  - 7) Push the ENT key on the ISDU to transmit the longitude to the ADIRUs.
    - a) Re-enter the same present position (latitude, longitude) again if the ALIGN lights start to flash.
  - 8) After 10 minutes, make sure the ALIGN lights on the IRS MSU go off.

NOTE: The ADIRS is now aligned and in the navigation mode.

SUBTASK 34-21-00-820-004

- (5) Do these steps to align the ADIRS at high latitude:

- (a) Set the mode select switches on the inertial reference system (IRS) mode select unit (MSU) to the ALIGN position.
  - 1) A high latitude alignment takes 17 minutes. Make a note of the present time for later use in this procedure.
- (b) Make sure the ON DC lights on the IRS MSU come on for a short time.
- (c) Make sure the ALIGN lights on the IRS MSU come on.
- (d) Do these steps to enter the latitude and longitude from the ISDU:
  - 1) Set the DSPL SEL switch on the ISDU to the PPOS position.

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- 2) Push the applicable N or S key on the ISDU.
- 3) Put in the degrees and minutes of the local latitude on the ISDU.
  - a) Make sure the latitude shows on the left side of the ISDU.
  - b) Make sure the ENT key light on the ISDU comes on.
- 4) Push the ENT key on the ISDU to transmit the latitude to the ADIRUs.
- 5) Push the applicable W or E key on the ISDU.
- 6) Put in the degrees and minutes of the local longitude on the ISDU.
  - a) Make sure the longitude shows on the right side of the ISDU.
  - b) Make sure the ENT key light on the ISDU comes on.
- 7) Push the ENT key on the ISDU to transmit the longitude to the ADIRUs.
  - a) Re-enter the same present position (latitude, longitude) again if the ALIGN lights start to flash.
- 8) After 17 minutes, set the mode select switches on the IRS MSU to the NAV position.
  - a) Make sure the ALIGN lights on the IRS MSU go off.

NOTE: The ADIRS is now aligned and in the navigation mode.

———— END OF TASK ————

**TASK 34-21-00-200-801**

**6. IR Radial Position Error Check**

(Figure 201)

**A. General**

- (1) This task provides the instructions to do a check of the inertial reference (IR) radial position error.
- (2) At the end of a flight, the radial position error of the IR can be calculated by comparing the IR final position to the airport position. The IR position data is available on the control display unit (CDU).
- (3) The IR radial position error limits are shown in a chart in this procedure.

**B. References**

Reference	Title
34-21-01-000-801	Air Data Inertial Reference Unit Removal (P/B 401)
34-21-01-400-801	Air Data Inertial Reference Unit Installation (P/B 401)

**C. Procedure**

SUBTASK 34-21-00-860-073

- (1) Make sure the mode select switches on the mode select unit (MSU) are in the NAV position.  
NOTE: You must record the IR position data at the end of the flight while the IR stays in the NAV mode.

SUBTASK 34-21-00-200-001

- (2) Do these steps to enter the airport identification into the CDU.
  - (a) Push the RTE key on the CDU.
    - 1) Make sure the RTE 1/1 shows on the CDU.
  - (b) Put the airport identification into the CDU scratchpad.
  - (c) Push the line select key (LSK) adjacent to the DEST on the CDU.

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- 1) Make sure the airport identification shows below the DEST on the CDU.

SUBTASK 34-21-00-200-002

- (3) Do these steps to enter the airplane present position into the CDU:

NOTE: When the airplane is parked at an airport gate, the present position of the airplane is the gate latitude and longitude.

- (a) Put the gate latitude and longitude into the CDU scratchpad.

NOTE: Do not use a space between the latitude and longitude. The format of the latitude and longitude data is as follows:

Latitude and longitude: XDDMM.MYDDDM.M

Where:

X is N or S for latitude

Y is E or W for longitude

D is the number of degrees

M is the number of minutes

- (b) Push the LEGS key on the CDU.

- 1) Make sure the LEGS 1/3 page shows on the CDU.

- (c) Push the LSK 1L on the CDU.

- 1) Make sure an identification waypoint of the gate latitude and longitude shows adjacent to the LSK 1L on the CDU.

- (d) Record the number in nautical miles that shows next to the first identification waypoint.

NOTE: The first identification way point is the active waypoint that shows at the top of the LEGS 1/3 page.

SUBTASK 34-21-00-200-003

- (4) Do these steps to transfer the left IRS position from the POS REF page to the LEGS page on the CDU:

- (a) Push the INIT/REF key on the CDU.

- 1) Make sure the INIT/REF INDEX page shows on the CDU.

- (b) Push the LSK adjacent to the <POS prompt on the CDU.

- 1) Make sure the POS INIT 1/3 page shows on the CDU.

- (c) Push the NEXT PAGE key on the CDU.

- 1) Make sure the POS REF 2/3 page shows on the CDU.

- (d) Push the LSK adjacent to the IRS L on the CDU.

- 1) Make sure the left IRS latitude and longitude data show on the CDU scratchpad.

- (e) Push the LEGS key on the CDU.

- 1) Make sure the LEGS 1/3 page shows on the CDU.

- (f) Push the LSK 2L on the CDU.

- 1) Make sure an identification waypoint of the IRS latitude and longitude shows adjacent to the LSK 2L on the CDU.

- (g) Record the number in nautical miles that shows next to the second identification waypoint.

- (h) Repeat these steps to record the number in nautical miles for the right IRS.

EFFECTIVITY	AKS ALL
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SUBTASK 34-21-00-200-004

- (5) The difference between the gate and the IRS waypoints in nautical miles is the IR radial position error.

SUBTASK 34-21-00-200-005

- (6) Compare the IR radial position error and the time the IRS was in the NAV mode to the radial position error limits (Figure 201).

SUBTASK 34-21-00-020-001

- (7) If one of these conditions occurs, replace the applicable ADIRU:
- (a) The IR radial position error is in the REPLACE-1 FLIGHT area.
  - (b) The IR radial position error is in the REPLACE-2 CONSECUTIVE FLIGHTS area for the second consecutive flight.
  - (c) These are the tasks:

Air Data Inertial Reference Unit Removal, TASK 34-21-01-000-801

Air Data Inertial Reference Unit Installation, TASK 34-21-01-400-801

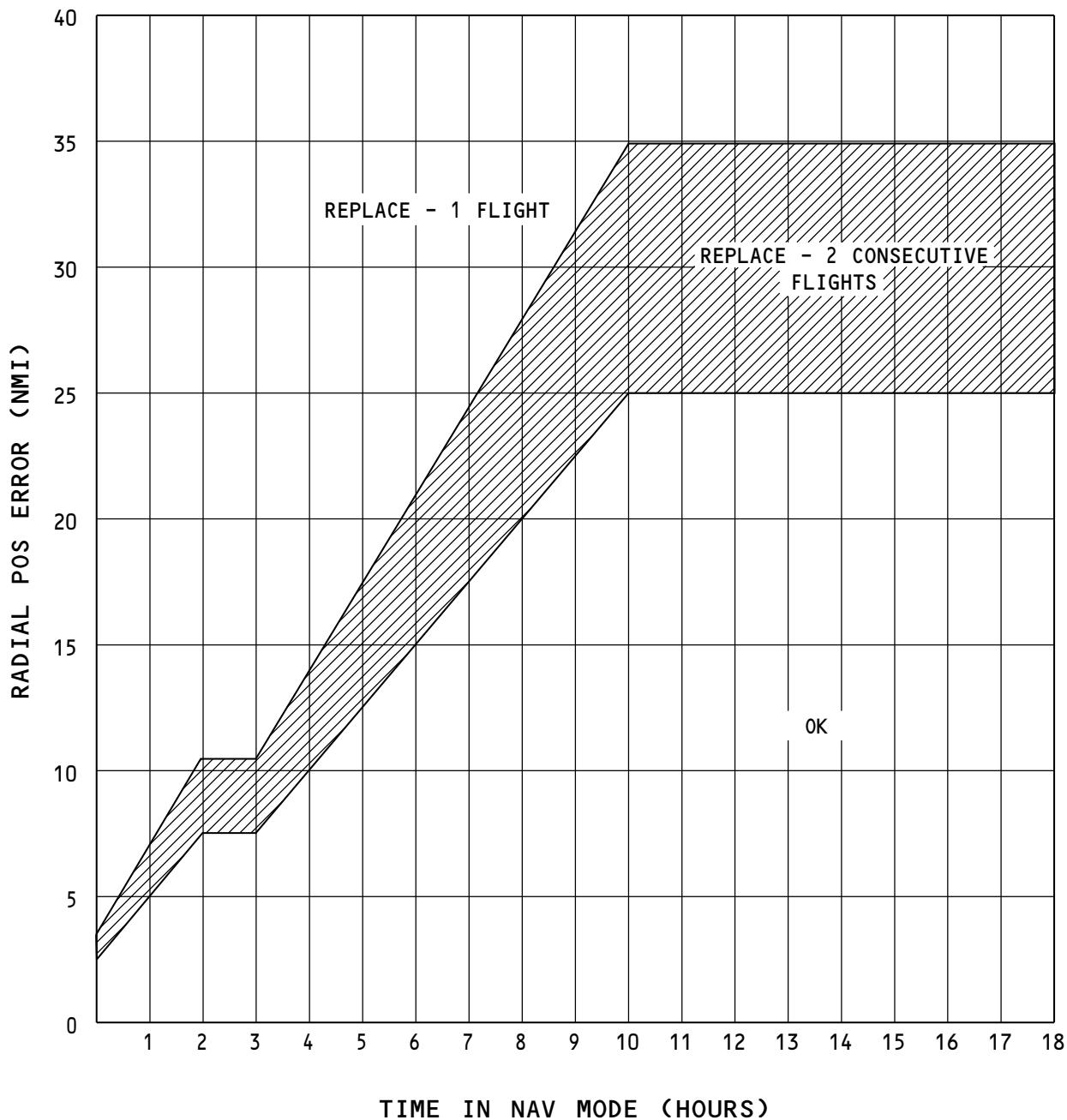
———— END OF TASK ——

EFFECTIVITY  
AKS ALL

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H77356 S0006576580\_V1

IR Radial Position Error  
Figure 201/34-21-00-990-804

EFFECTIVITY  
AKS ALL

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**TASK 34-21-00-200-802**

**7. Inertial Reference Residual Groundspeed Error Check**

**A. General**

- (1) This task provides the instructions to do a check of the inertial reference (IR) residual groundspeed error.
- (2) Groundspeed readout must be taken before the airplane has been stationary for three minutes. The system may zero the display after three minutes.

**B. References**

Reference	Title
34-21-01-000-801	Air Data Inertial Reference Unit Removal (P/B 401)
34-21-01-400-801	Air Data Inertial Reference Unit Installation (P/B 401)

**C. Procedure**

SUBTASK 34-21-00-860-075

- (1) Set the SYS switch to the L position on the ISDU.

SUBTASK 34-21-00-200-006

- (2) Set the DSPL switch to the TRK/GS position on the ISDU.

SUBTASK 34-21-00-200-007

- (3) When the airplane is stationary, the ISDU display shows the residual groundspeed error.

SUBTASK 34-21-00-200-008

- (4) Make sure these conditions do not occur:
  - (a) The residual groundspeed error is 15 knots or larger after each of two consecutive flights, one after the other.
  - (b) The residual groundspeed error is 21 knots or larger at the end of one flight.

SUBTASK 34-21-00-200-009

- (5) If one of these conditions occurs replace the ADIRU.

These are the tasks:

Air Data Inertial Reference Unit Removal, TASK 34-21-01-000-801,

Air Data Inertial Reference Unit Installation, TASK 34-21-01-400-801.

SUBTASK 34-21-00-200-010

- (6) Set the SYS switch to the R position.

SUBTASK 34-21-00-200-011

- (7) Do the procedure again for the right ADIRU.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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AIR DATA INERTIAL REFERENCE SYSTEM - ADJUSTMENT/TEST

**1. General**

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) The Air Data Inertial Reference System (ADIRS) operational test

NOTE: The ADIRS operational test is inhibited if the Computed Airspeed (CAS) is more than 30 knots.

(2) The Inertial Reference (IR) system test

(3) The Air Data Reference (ADR) system test.

**TASK 34-21-00-710-801**

**2. Air Data Inertial Reference System - Operational Test**

**A. General**

(1) This task contains these tests:

(a) The Self-Test of the inertial reference (IR) system

(b) The self-test of the air data reference (ADR) system

(c) The Built-In Test Equipment (BITE) ground test of the IR

(d) The BITE ground test of the ADR.

**B. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
FIM 34-21 TASK 801	ADIRS BITE Procedure

**C. Location Zones**

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

**D. Prepare for the Operational Test**

**SUBTASK 34-21-00-860-001**

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

**SUBTASK 34-21-00-860-065**

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

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**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	3	C00170	MACH WARN SYS-1
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00549	MACH WARN SYS -2
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-00-860-066

**WARNING:** FAILURE TO OPEN THE FLAP LOAD RELIEF CIRCUIT BREAKER MAY CAUSE INJURY TO PERSONNEL.

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-21-00-860-004

- (4) Make sure the mode select switches on the Mode Select Unit (MSU) are in the OFF position.

**NOTE:** Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

SUBTASK 34-21-00-860-005

- (5) Set the IRS Transfer switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-007

- (6) Set the mode select switch on the captain's and first officer's EFIS control panel to the VOR position.

SUBTASK 34-21-00-860-006

- (7) Set the VHF NAV switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-007

- (8) Set the CDS switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-008

- (9) Set the EQUIPMENT COOLING switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-009

- (10) Set the FMCS switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-010

- (11) Set the STBY PWR switch on the P5 overhead panel to the AUTO position.

**E. Air Data Inertial Reference System - Self-Test**

SUBTASK 34-21-00-740-001

- (1) Do these steps to do a self-test of the left IR system:

- (a) Set the mode select switches on the MSU to the ALIGN position.

**NOTE:** Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.



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- 1) Make sure the ALIGN lights on the MSU are on.
- (b) Set the SYS DSPL switch on the Inertial System Display Unit (ISDU) to the L position.
- (c) Set and hold the DSPL SEL switch on the ISDU in the TEST position.  
**NOTE:** The DSPL SEL switch is spring-loaded in the TEST position. It will return to the TK/GS position when released. Release the switch to stop the test. You will possibly have to do this step again to see all results of the test.
- (d) For seconds 0-2, make sure that:
  - 1) The display segments and indicators on the ISDU come on.
  - 2) The ALIGN, FAULT, ON DC, and DC FAIL annunciators on the left side of the MSU come on.
  - 3) The MASTER CAUTION and IRS lights on the captain's glareshield come on.
- (e) For seconds 2-10, make sure that:
  - 1) The display segments and indicators on the ISDU are blank.
  - 2) The FAULT, ON DC, and DC FAIL annunciators on the left side of the MSU go off.
  - 3) The MASTER CAUTION and IRS lights on the captain's glareshield go off.
  - 4) The HDG flag comes into view and the compass card goes out of view on the captain's Navigation Display (ND) and Primary Flight Display (PFD).
  - 5) The ATT flag on the captain's PFD comes into view.

**AKS 001-024**

- 6) The VERT flag on the captain's PFD comes into view.

**AKS 025-999**

- 7) The VSI flag on the captain's PFD comes into view.

**AKS ALL**

- (f) For seconds 10 and on, make sure that:
  - 1) The 5° pitch up shows on the captain's PFD.
  - 2) The 45° roll right shows on the captain's PFD.
  - 3) The 15° heading shows on the captain's PFD and ND.
  - 4) The -10° slip/skid indicator angle shows on the captain's PFD.  
**NOTE:** The slip/skid indicator shows below the bank pointer on the PFD.
- 5) The vertical speed of -600 feet/minute descending (down pitch) shows on the captain's PFD.
- (g) Set the IRS switch on the P5 overhead panel to BOTH ON R.
  - 1) Make sure that “---” shows in the HDG field on the ND or actual heading is shown if the system is fully aligned.
- (h) Release the DSPL SEL switch.
- (i) Set the IRS Transfer switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-710-001

- (2) Do these steps to do the self-test of the right IR system:
  - (a) Set the SYS DSPL switch on the ISDU to the R position.

EFFECTIVITY  
**AKS ALL**

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- (b) Set and hold the DSPL SEL switch on the ISDU in the TEST position.

**NOTE:** The DSPL SEL switch is spring-loaded in the TEST position. It will return to the TK/GS position when released. Release the switch to stop the test. You will possibly have to do this step again to see all results of the test.

- (c) For seconds 0-2, make sure that:

- 1) The display segments and indicators on the ISDU come on.
- 2) The ALIGN, FAULT, ON DC, and DC FAIL annunciators on the right side of the MSU come on.
- 3) The MASTER CAUTION light on the first officer's glareshield comes on.

- (d) For seconds 2-10, make sure that:

- 1) The display segments and indicators on the ISDU go off.
- 2) The FAULT, ON DC, and DC FAIL annunciators on the right side of the MSU go off.
- 3) The MASTER CAUTION light on the first officer's glareshield goes off.
- 4) The HDG flag comes into view and the compass card goes out of view on the first officer's PFD and ND.
- 5) The ATT flag on the first officer's PFD comes into view.

**AKS 025-999**

- 6) The VSI flag on the first officer's PFD comes into view.

**AKS 001-024**

- 7) The VERT flag on the first officer's PFD comes into view.

**AKS ALL**

- (e) For seconds 10 and on, make sure that:

- 1) The 5° pitch up shows on the first officer's PFD.
- 2) The 45° roll right shows on the first officer's PFD.
- 3) The 15° heading shows on the first officer's PFD and ND.
- 4) The -10° slip/skid indicator angle shows on the first officer's PFD.
- 5) The vertical speed of 600 feet/minute descending (down pitch) shows on the first officer's PFD.

- (f) Set the IRS switch on the P5 overhead panel to BOTH ON L.

- 1) Make sure that “---” shows in the HDG field on the ND or actual heading is displayed if the system is fully aligned.

- (g) Release the DSPL SEL switch.

- (h) Set the IRS Transfer switch on the P5 overhead panel to the NORMAL position.

**SUBTASK 34-21-00-710-002**

- (3) Do these steps to do the self-test of the left ADR system:

- (a) Push the MACH AIRSPEED WARNING TEST NO. 1 switch on the P5 aft overhead panel for a moment.
  - 1) Make sure the overspeed warning clacker comes on momentarily.
- (b) Push the MACH AIRSPEED WARNING TEST NO. 2 switch on the P5 aft overhead panel for a moment.
  - 1) Make sure the overspeed warning clacker comes on momentarily.

EFFECTIVITY  
**AKS ALL**

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- (c) Set the left mode select switch on the MSU to the ALIGN position.
- (d) Set the left altimeter baro correction data to 29.92 inches of Hg.
- (e) Set the SYS DSPL switch on the ISDU to the L position.
- (f) Set and hold the DSPL SEL switch on the ISDU in the TEST position.
- (g) For the 0-2 seconds, make sure the overspeed warning clacker comes on for 2 seconds.
- (h) After 7 seconds, make sure that:
  - 1) The altitude of 10,000 ±40 feet shows on the captain's PFD.
  - 2) The true airspeed of 170 ±4 knots shows on the captain's ND.
  - 3) Total air temperature of 35.0 ± 2°C shows on the engine display.
- (i) Release the DSPL SEL switch.

SUBTASK 34-21-00-710-003

- (4) Do these steps to do the self-test of the right ADR system :
  - (a) Push the MACH AIRSPEED WARNING TEST NO. 1 switch on the P5 aft overhead panel for a moment.
    - 1) Make sure the overspeed warning clacker comes on momentarily.
  - (b) Push the MACH AIRSPEED WARNING TEST NO. 2 switch on the P5 aft overhead panel for a moment.
    - 1) Make sure the overspeed warning clacker comes on momentarily.
  - (c) Set the right mode select switch on the MSU to the ALIGN position.
  - (d) Set the right altimeter baro correction data to 29.92 inches of Hg.
  - (e) Set the SYS DSPL switch on the ISDU to the R position.
  - (f) Set and hold the DSPL SEL switch on the ISDU in the TEST position.
  - (g) For the 0-2 seconds, make sure the overspeed warning clacker comes on for 2 seconds.
  - (h) After 7 seconds, make sure that:
    - 1) The altitude of 10,000 ±40 feet shows on the first officer's PFD.
    - 2) The mach indication on the first officer's PFD is blank.
    - 3) The true airspeed of 170 ±4 knots shows on the first officer's ND.
  - (i) Release the DSPL SEL switch.

**F. Air Data Inertial Reference System - BITE Test**

SUBTASK 34-21-00-860-012

- (1) Do these steps to access the ADIRS maintenance index on the CDU:

NOTE: CDU data lines that permit a selection are identified with a caret (< or >). The CDU has 12 line-select-keys. Six keys are on each side of the display. 1L thru 6L are on the left side, and 1R thru 6R are on the right side.

- (a) Push the INIT REF key.
  - 1) Make sure the CDU shows the PERF INIT page.
- (b) Push the LSK 6L adjacent to the INDEX> prompt on the CDU.
  - 1) Make sure the CDU shows the INIT REF INDEX 1/1 page.
- (c) Push the LSK 6R adjacent to the MAINT> prompt on the CDU.
  - 1) Make sure the CDU shows the MAINT BITE INDEX 1/1 page.



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- (d) Push the LSK 4L adjacent to the <ADIRS prompt on the CDU.
  - 1) Make sure the CDU shows the ADIRS BITE INDEX page.

SUBTASK 34-21-00-710-004

- (2) Do these steps to access the left ADIRS current faults:
  - (a) Push the LSK 1L adjacent to the <ADIRS L prompt on the CDU.
    - 1) Make sure the CDU shows the ADIRS L BITE MAIN MENU page.
  - (b) Push the LSK 1L adjacent to the <CURRENT STATUS prompt on the CDU.
    - 1) Make sure the CDU shows the ADIRS L BITE CURRENT FAULTS page.
    - 2) Make sure the CDU shows the NO CURRENT FAULTS message.

NOTE: If there is a maintenance message that shows on the CDU, you can go to the ADIRS fault isolation procedures to fix the fault FIM 34-21 TASK 801.

SUBTASK 34-21-00-710-005

- (3) Do these steps to access the right ADIRS current faults.
    - (a) If you are not at the ADIRS BITE page, do this step:
      - 1) Push the LSK 6L adjacent to the INDEX> prompt on the CDU to access the ADIRS L BITE MAIN MENU page.
      - 2) Push the LSK 6L adjacent to the adjacent to the <INDEX prompt on the CDU to access the MAINT BITE INDEX 1/1 page.
      - 3) Push the LSK 4L adjacent to the <ADIRS prompt on the CDU to access the ADIRS BITE page.
    - (b) Push the LSK 2L adjacent to the <ADIRS R prompt on the CDU from the ADIRS BITE 1/1 page.
      - 1) Make sure the CDU shows the ADIRS R BITE MAIN MENU page.
    - (c) Push the LSK 1L adjacent to the <CURRENT STATUS prompt on the CDU.
      - 1) Make sure the CDU shows the ADIRS R BITE CURRENT FAULTS page.
      - 2) Make sure the CDU shows the NO CURRENT FAULTS message.
- NOTE: If there is a maintenance message that shows on the CDU, you can go to the ADIRS fault isolation procedure to fix the fault FIM 34-21 TASK 801.
- (d) Push the LSK 6L adjacent to the <INDEX prompt on the CDU two times.
    - 1) Make sure the CDU shows the MAIN BITE INDEX 1/1 page.
  - (e) Push the LSK 6L adjacent to the INDEX prompt on the CDU.

SUBTASK 34-21-00-740-002

- (4) Do these steps to do a BITE ground test of the left and right IR system:

NOTE: You can do a separate ground test of the left ADIRS and the right ADIRS. The ADIRS L BITE MAIN MENU contains the ground test for the left ADIRS. The ADIRS R BITE MAIN MENU contains the ground test for the right ADIRS.

- (a) Make sure the air data inertial reference unit (ADIRU) is aligned to the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801
- (b) Push the LSK 3L adjacent to the <ADIRS-IR L+R GND TEST prompt on the CDU from the ADIRS BITE 1/1 page.

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- 1) Make sure the CDU shows the ADIRS-IR L+R BITE GROUND TEST 1/3 page.
- (c) Push the LSK 5L adjacent to the <TEST START prompt on the CDU to start the IR ground test.

NOTE: After you start the test, you can push the LSK 5R adjacent to the TEST STOP> prompt on the CDU to stop the test.

- 1) For seconds 0-2, make sure that:
  - a) All the display segments and indicators on the ISDU come on.
  - b) The ALIGN, FAULT, ON DC, and DC FAIL annunciators on the MSU come on.
  - c) The MASTER CAUTION and IRS lights on the glareshield come on.
- 2) For seconds 2-10, make sure that:
  - a) All the display segments and indicators on the ISDU are blank.
  - b) The ALIGN, FAULT, ON DC, and DC FAIL annunciators on the MSU go off.
  - c) The HDG flag comes into view and the compass card goes out of view on the PFD.
  - d) The ATT flags on the PFD come into view.

**AKS 025-999**

- e) The VSI flag on the captain's secondary display comes into view.

**AKS 001-024**

- f) The VERT flag on the captain's PFD comes into view.

**AKS 025-999**

- g) The VSI flag on the first officer's primary display comes into view.

**AKS 001-024**

- h) The VERT flag on the first officer's PFD comes into view.

**AKS ALL**

- 3) Push the NEXT PAGE key on the CDU to go to page 2/3 of this test.
- 4) For seconds 10 and on, make sure that:
  - a) The 5° pitch up angles show on the PFDs.
  - b) The 45° roll right angles on the PFDs.
  - c) The groundspeed of 200 knots shows on the ISDU display.
  - d) The latitude of N22°30.0' shows on the ISDU display.  
NOTE: The CDU will indicate N22deg.50.
  - e) The longitude of E22°30.0' shows on the ISDU display.  
NOTE: The CDU will indicate E22deg.50.
- 5) Push the LSK 5R adjacent to the <TEST STOP prompt on the CDU to stop the test.
- 6) Push the INIT REF key on the CDU to go out of the ADIRS BITE page.

**SUBTASK 34-21-00-710-006**

- (5) Do these steps to do a ground test for the left and right ADR system:
  - (a) Push the LSK 4L adjacent to the <ADIRS-ADR L+R GND TEST prompt on the CDU from the ADIRS BITE 1/1 page.

EFFECTIVITY	AKS ALL
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- 1) Make sure the CDU shows the ADIRS-ADR L+R BITE GROUND TEST 1/2 page.
- (b) Push the LSK 5L adjacent to the <TEST START prompt on the CDU to start the ADR ground test.  
**NOTE:** After you start the test, you can push the LSK 5R adjacent to the <TEST STOP prompt on the CDU to stop the test.
- (c) For 0-2 seconds, make sure that:
  - 1) The overspeed warning and the flags on the PFDs come into view.
- (d) For 0-7 seconds, make sure that:
  - 1) The ALT flag shows on the captain's PFD.
  - 2) The ALT flag shows on the first officer's PFD.
  - 3) The total air temperature does not show on the engine display.
- (e) For seconds 7 and on, make sure that:
  - 1) The altitude of 10000 feet shows on the captain's PFD.
  - 2) The altitude of 10000 feet shows on the first officer's PFD.
  - 3) The true airspeed of 170 knots show on the captain's ND.
  - 4) The true airspeed of 170 knots shows on the first officer's ND.
- (f) Push the LSK 5R adjacent to the <TEST STOP prompt on the CDU to stop the test.
- (g) Push the MASTER CAUTION reset switch.
  - 1) Make sure the MASTER CAUTION and IRS lights on the captain's glareshield go off.
- (h) Push the INIT REF key on the CDU to go out of the ADIRS BITE page.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-21-00-860-013

- (1) Set the mode select switches on the MSU to the OFF position.

SUBTASK 34-21-00-860-050

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

———— END OF TASK ————

**TASK 34-21-00-730-801**

**3. Inertial Reference - System Test**

**A. General**

- (1) The system test contains these tests:
  - (a) The ON DC Operation and No Cooling Warning Test
  - (b) The MSU ALIGN and DC FAIL Annunciator and MCU DC FAIL Annunciator Test
  - (c) The Master Dim and Test
  - (d) The Five Minute Time Delay Check
  - (e) The ISDU/FMC digital and MCU fault discrete interface test.



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**B. References**

<b>Reference</b>	<b>Title</b>
21-27-00-700-802	Equipment Cooling Fans - Operational Test (P/B 501)
23-43-00-710-801	Flight and Ground Crew Call System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
31-62-00-710-801	Common Display System - Operational Test (P/B 501)
32-09-10-710-801	Proximity Switch Electronics Unit (PSEU) - Operational Test (P/B 501)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
34-61-00-710-801	Flight Management Computer System - Operational Test (P/B 501)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Prepare for the IR System Test**

SUBTASK 34-21-00-860-015

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

SUBTASK 34-21-00-860-067

- (2) Make sure the equipment cooling system is operational (TASK 21-27-00-700-802).

SUBTASK 34-21-00-860-068

- (3) Make sure the common display system (CDS) is operational (TASK 31-62-00-710-801).

SUBTASK 34-21-00-860-069

- (4) Make sure the flight management computer system (FMCS) is operational (TASK 34-61-00-710-801).

SUBTASK 34-21-00-860-070

- (5) Make sure the proximity switch electronics unit (PSEU) is operational (TASK 32-09-10-710-801).

SUBTASK 34-21-00-860-071

- (6) Make sure the flight crew call system is operational (TASK 23-43-00-710-801).

SUBTASK 34-21-00-860-016

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC



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**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-00-860-017

**WARNING:** FAILURE TO OPEN THE FLAP LOAD RELIEF CIRCUIT BREAKER MAY CAUSE INJURY TO PERSONNEL.

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-21-00-860-018

- (9) Make sure the mode select switches on the MSU are in the OFF position.

**NOTE:** Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

SUBTASK 34-21-00-860-019

- (10) Set the IRS switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-020

- (11) Set the VHF NAV switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-021

- (12) Set the CDS switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-022

- (13) Set the EQUIPMENT COOLING switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-023

- (14) Set the FMCS switch on the P5 overhead panel to the NORMAL position.

SUBTASK 34-21-00-860-024

- (15) Set the STBY PWR switch on the P5 overhead panel to the AUTO position.

**E. ON DC Operation and No Cooling Warning Test**

SUBTASK 34-21-00-860-025

- (1) Do these steps to do a check of the ADIRU ON DC Operation.

- (a) Set the mode select switches on the MSU to the ATT position.

**NOTE:** Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

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- 1) Make sure the left ON DC light on the MSU comes on.
  - 2) Make sure the MASTER CAUTION and the IRS lights on the glareshield come on.
  - 3) After at least 25 seconds, make sure the crew call horn sounds.
- (c) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

- 1) Make sure the crew call horn stops.
- 2) Make sure the left ON DC light on the MSU goes off.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC

- 1) Make sure the right ON DC light on the MSU comes on.
- 2) Make sure the MASTER CAUTION and the IRS lights on the captain's glareshield come on.
- 3) After at least 25 seconds, make sure the crew call horn sounds.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC

- 1) Make sure the crew call horn stops.
- 2) Make sure the right ON DC light on the MSU goes off.

SUBTASK 34-21-00-860-034

- (2) Do these steps to do a ADIRU No Cooling Warning Test:

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

**F/O Electrical System Panel, P6-4**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01435	EQPT COOLING EXHAUST FAN CONT NORMAL

- 1) Make sure the EQUIPMENT COOLING OFF light on the P5 overhead panel is on.
- 2) Within 60 seconds after the EQUIPMENT COOLING OFF light comes on, make sure the crew call horn sounds.

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

**F/O Electrical System Panel, P6-4**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01435	EQPT COOLING EXHAUST FAN CONT NORMAL

- 1) Make sure the EQUIPMENT COOLING OFF light on the P5 overhead panel goes off.
- 2) Make sure the crew call horn stops.

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

**F/O Electrical System Panel, P6-4**

**Row Col Number Name**

C 12 C01116 EQPT COOLING SUPPLY FAN CONT-NORMAL

- 1) Make sure the EQUIPMENT COOLING OFF light on the P5 overhead panel is on.
- 2) Within 60 seconds after the EQUIPMENT COOLING OFF light comes on, make sure the crew call horn sounds.

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

**F/O Electrical System Panel, P6-4**

**Row Col Number Name**

C 12 C01116 EQPT COOLING SUPPLY FAN CONT-NORMAL

- 1) Make sure the EQUIPMENT COOLING OFF light on the P5 overhead panel goes off.
- 2) Make sure the crew call horn stops.

- (e) Set the mode select switches on the MSU to the OFF position.

NOTE: Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

**F. DC FAIL and ALIGN Annunciators Test**

SUBTASK 34-21-00-730-011

- (1) Do these steps to do a DC FAIL and ALIGN Annunciators Test:

- (a) Set the left mode select switch on the MSU to the ATT position.
  - 1) Make sure the left ALIGN light on the MSU comes on for not more than 40 seconds.
- (b) Open this circuit breaker and install safety tag:

**CAPT Electrical System Panel, P18-1**

**Row Col Number Name**

E 5 C01009 ADIRU LEFT DC

- 1) Make sure the left DC FAIL light on the MSU comes on.
- 2) Make sure the MASTER CAUTION and IRS light on the pilot's glareshield come on.

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

**CAPT Electrical System Panel, P18-1**

**Row Col Number Name**

E 5 C01009 ADIRU LEFT DC

- 1) Make sure the left DC FAIL light goes off.
- (d) Push the MASTER CAUTION button on the pilot's glareshield to turn off the MASTER CAUTION and the IRS light.
- (e) Set the left mode select switch on the MSU to the OFF position.
- (f) Set the right mode select switch on the MSU to the ATT position.
  - 1) Make sure the right ALIGN light on the MSU comes on for not more than 40 seconds.



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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	17	C01010	ADIRU RIGHT DC

- 1) Make sure the right DC FAIL light on the MSU comes on.
- 2) Make sure the MASTER CAUTION and IRS lights on the captain's glareshield come on.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	17	C01010	ADIRU RIGHT DC

- 1) Make sure the right DC FAIL light goes off.

- (i) Push the MASTER CAUTION button on the captain's glareshield to turn off the MASTER CAUTION and the IRS light.

- (j) Set the mode select switch on the MSU to the OFF position.

**G. Master Dim and Test**

SUBTASK 34-21-00-860-039

- (1) Do these steps to do a Master Dim and Test for the ADIRS:

- (a) Align the left and right ADIRS in the ALIGN mode (TASK 34-21-00-820-802 or TASK 34-21-00-820-801).

- (b) Make sure the mode select switches on the MSU are in the ALIGN position.

NOTE: Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

- (c) Set the DSPL SEL switch on the ISDU to the PPOS position.

- (d) Turn the inner DSPL SEL switch (BRT) on the ISDU clockwise.

- (e) Set and hold the DIM and TEST switch on the pilot's center instrument panel to the TEST position.

- 1) Make sure all of the lights on the ISDU come on bright.

- 2) Make sure all of the lights on the MSU come on bright.

- (f) Release the DIM and TEST switch.

- (g) Turn the inner DSPL SEL switch (BRT) on the ISDU counterclockwise.

- (h) Set the DIM and TEST switch on the pilot's center instrument panel to the DIM position.

- 1) Make sure the ALIGN lights on the MSU are dim.

- 2) Push the lights on the MSU one at a time.

- 3) Make sure the lights come on dim one at a time.

- (i) Set the DIM and TEST switch on the pilot's center instrument panel to the BRT position.

- 1) Make sure only the ALIGN lights on the MSU are on.

- (j) Set the mode select switches on the MSU to the OFF position.

NOTE: Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

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**H. Five Minute Time Delay Check**

SUBTASK 34-21-00-860-041

- (1) Do these steps to do a Five Minute Time Delay Check:

- (a) Set the mode select switches on the MSU to the ALIGN position.

NOTE: Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC

- 1) In less than 30 seconds, make sure the crew call horn sounds.

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

- 1) Make sure the crew call horn stops.
- 2) Set the STANDBY POWER switch on the P5 overhead panel to the BAT position.
- 3) Make sure the ALIGN lights on the MSU are on.
- 4) Make sure the DC lights on the MSU are on.
- 5) After approximately 5 seconds, make sure the MASTER CAUTION and IRS lights on the pilot's glareshield come on.
- 6) After 5 minutes, make sure that:
  - a) The ALIGN and ON DC lights on the right side of the MSU are off.
  - b) The ALIGN and ON DC lights on the left side of the MSU are on.

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

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- (e) Push the MASTER CAUTION switch on the pilot's glareshield to turn off the MASTER CAUTION and the IRS lights.
- (f) Set the left and right mode select switches on the MSU to the OFF position.
  - 1) Make sure the ALIGN lights go off.
- (g) Open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC

- (h) Wait for approximately 2 seconds, then

Remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC

- (i) Set the STANDBY POWER switch on the P5 overhead panel to the AUTO position.

**I. ISDU/FMC Digital and MCU Fault Discrete Interface Test**

SUBTASK 34-21-00-860-045

- (1) Do these steps to do a ISDU/FMC Digital and MCU Discrete Interface Test:

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2

- (b) Set the left and right mode select switches on the MSU to the NAV position.

- (c) Set the SYS DSPL switch on the ISDU to the PPOS position.

- 1) Make sure the left and right ALIGN lights on the MSU are on.

- (d) Set the SYS DSPL switch on the ISDU to the L position.

- (e) Push the INIT REF key on the CDU 1.

- 1) Make sure the PERF INIT page shows on the CDU 1.

- (f) Push the LSK 6L adjacent to the <INDEX prompt on the CDU.

- 1) Make sure the INIT/REF INDEX page shows on the CDU 1.

- (g) Push the LSK 2L adjacent to the <POS prompt on the CDU.

- 1) Make sure the POS INIT 1/3 page shows on the CDU 1.

- (h) Enter the latitude of N0000.0 and the longitude of E00000.0 on the CDU 1.

- 1) Make sure the latitude and longitude show on the scratch pad of the CDU 1.

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- (i) Push the LSK 4R adjacent to the POS> prompt on the CDU.
  - 1) Make sure the latitude and longitude show on the line 9 of the CDU 1.
  - 2) Wait until the left and right ALIGN lights on the MSU start flashing.  
NOTE: This may take up to 10 minutes.
  - 3) Make sure the ENTER IRS POSITION shows on the CDU 1.
  - 4) Make sure the latitude of N00°00.0' and the longitude of E000°00.0' show on the ISDU.
- (j) Set the SYS DSPL on the ISDU to the R position.
  - 1) Make sure the latitude of N00°00.0' and the longitude of E000°00.0' show on the ISDU.
- (k) Set the SYS DSPL on the ISDU to the L position.
- (l) Re-enter the latitude of N0000.0 and the longitude of E00000.0 on the CDU 1.
  - 1) Make sure the latitude and longitude show on the scratch pad of the CDU 1.
- (m) Push the LSK 4R adjacent to the POS> prompt on the CDU.
  - 1) Make sure the latitude and longitude show on the line 9 of the CDU 1.
  - 2) Make sure the left and right ALIGN lights on the MSU come on steadily.
  - 3) Make sure the left and right ALIGN lights start to flash when the alignment time reaches zero on the ISDU.
- (n) Enter the incorrect latitude of N00°00.0' on the ISDU.
- (o) Push the ENT key on the ISDU to send the latitude data.
- (p) Enter the correct longitude on the ISDU.  
NOTE: The correct longitude is dependent on the location of the airplane.
- (q) Push the ENT key on the ISDU to send the longitude data.
  - 1) Make sure the left and right ALIGN and FAULT lights come on.
  - 2) Make sure the MASTER CAUTION and the IRS lights on the glareshield come on.
- (r) Enter the correct latitude on the ISDU.  
NOTE: The correct latitude is dependent on the location of the airplane.
- (s) Push the ENT key on the ISDU to send the latitude data.
- (t) Enter the correct longitude on the ISDU.  
NOTE: The correct longitude is dependent on the location of the airplane.
- (u) Push the ENT key on the ISDU to send the longitude data.
  - 1) Make sure the left and right FAULT lights go off.
- (v) Push the MASTER CAUTION switch on the glareshield to turn off the MASTER CAUTION and the IRS lights.
- (w) Set the DSPL SEL switch to the HDG/STS position.
  - 1) Make sure there is no fault code shown on the ISDU.
  - 2) Make sure the left ALIGN light on the MSU comes on steadily or goes off.
  - 3) Make sure the aircraft true heading shows on the ISDU when the ALIGN light on the MSU went off.
- (x) Set the SYS DSPL switch on the ISDU to the R position.

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- 1) Make sure there is no fault code shown on the ISDU.
- 2) Make sure the right ALIGN light on the MSU comes on steadily or goes off.
- 3) Make sure the aircraft true heading shows on the ISDU when the ALIGN light on the MSU went off.

**J. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-21-00-860-051

- (1) Set the mode select switches on the MSU to the OFF position.

NOTE: Some switches must be pulled before you turn them. If you try to turn these switches before you pull them, you can damage them.

SUBTASK 34-21-00-860-072

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2

SUBTASK 34-21-00-860-052

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

**F/O Electrical System Panel, P6-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

———— END OF TASK ————

**TASK 34-21-00-730-802**

**4. Air Data Reference - System Test**

Figure 501

**A. General**

- (1) This task contains these tests:

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- (a) ADM and integrated standby flight display test

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- (b) TAT probe and TAT probe heater test
- (c) AOA interface test
- (d) ALTERNATE VMO/MMO switch test

**B. References**

<u>Reference</u>	<u>Title</u>
24-22-00-860-812	Remove Electrical Power (P/B 201)

**C. Tools/Equipment**

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



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Reference	Description
COM-1562	Analyzer - Data Bus, ARINC 429 Part #: 01-1001-05 Supplier: 0Z3C6 Part #: 01-1001-12 Supplier: 0Z3C6 Part #: 403557 Supplier: \$1272 Part #: 800-0630 Supplier: 1JSZ6 Part #: DT400H Supplier: 0Z3C6 Part #: TYPE 030/026 Supplier: \$0494 Part #: UA1410 Supplier: 0H231 Opt Part #: 01-1001-10 Supplier: 0Z3C6 Opt Part #: 01-1404-00 Supplier: 41364 Opt Part #: 429EBP Supplier: 41364 Opt Part #: 429EX Supplier: 41364 Opt Part #: 702125-01 Supplier: \$1272 Opt Part #: MODEL 429HBA Supplier: 5J927
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
SPL-1917	Fixture - Test, Angle of Attack Sensor, ROSEMOUNT AOA's Part #: J34002-19 Supplier: 81205 Opt Part #: A34012-19 Supplier: 81205 Opt Part #: A34012-24 Supplier: 81205 Opt Part #: J34002-18 Supplier: 81205
SPL-3896	Box - Breakout, Multipurpose, 100/124 pin Part #: C22005-22 Supplier: 81205 Opt Part #: C22005-1 Supplier: 81205
SPL-3897	Assembly - Cable, Flight Control Computer and/or Digital Flight Control System Testing Part #: C22005-32 Supplier: 81205
STD-1336	Thermometer - Digital, 0-150 +/- 2 Degrees F, with a Probe, Thermocouple or Equivalent

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D. Location Zones

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

E. Prepare for the Air Data Reference System Test

SUBTASK 34-21-00-730-002

- (1) Examine each pitot-static probe before and after this test for damage to the circular leading edge of its barrel.

SUBTASK 34-21-00-730-003

- (2) Examine each pitot-static probe before and after this test for blockage in the drain or static ports.

SUBTASK 34-21-00-860-079

**WARNING:** KEEP PERSONS AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES. THE AILERONS, ELEVATORS, RUDDER, FLAPS, SLATS, SPOILERS, STABILIZER AND NOSE GEAR CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

SUBTASK 34-21-00-730-004

**CAUTION:** OBEY THESE PRECAUTIONS BEFORE YOU APPLY PRESSURE TO THE PITOT-STATIC SYSTEM. IF YOU DO NOT OBEY THESE PRECAUTIONS, DAMAGE TO THE EQUIPMENT AND INSTRUMENTS CAN OCCUR.

- (4) Obey these precautions before you apply pressure to the pitot-static system.
  - (a) Supply the electrical power for the ADIRS before you make the static or total pressure hook-ups.
  - (b) Keep power on until all pressure hook-up are opened.
  - (c) Pressure changes must be flow controlled to prevent sudden changes in pressure and possible damage to the air data hardware.
  - (d) Keep the static pressure in the range of 3.26 to 33.31 inches Hg.
  - (e) Do not permit the static pressure to be more than 28 inches Hg. from the ambient pressure.
  - (f) Keep the total pressure in the range of 3.26 to 41.34 inches Hg.
  - (g) When you adjust the pressure, make sure the rate of change of altitude is less than 5,000 feet per minute.
  - (h) When you adjust the pressure, make sure the rate of change of airspeed is less than 300 knots per minute.
  - (i) Keep the static line pressure less than the pitot line pressure.



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- (j) Make sure the difference between the static and pitot line pressure is not larger than 10 inches Hg.
- (k) Make sure the autopilot system stays off during the test.

**CAUTION:** MAKE SURE YOU DO NOT SUPPLY ELECTRICAL POWER TO THE PITOT PROBE HEATER. THIS CAN CAUSE DAMAGE TO THE PITOT PROBE.

- (l) Make sure the pitot probe heaters stay off during the test.
- (m) Connect the captain's, F/O's, and alternate static systems together during the test.
- (n) Apply static pressure to all systems at the same time.
- (o) Connect the captain's, F/O's, and alternate pitot tubes together during the test.
- (p) Apply pitot pressure to all systems at the same time.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

**F. ADM and Integrated Standby Flight Display Test**

SUBTASK 34-21-00-730-012

- (1) Do these steps to do an ADM and Integrated Standby Flight Display Test:
  - (a) Disconnect and plug the static pressure line at the cabin differential pressure indicator.
  - (b) Turn the altimeter BARO knobs on the captain's EFIS control panel, F/O's EFIS control panel, and integrated standby flight display through the full range.
  - (c) Set the altimeter BARO knobs on the captain's EFIS control panel, F/O's EFIS control panel, and integrated standby flight display to 29.92 inches of Hg.
  - (d) Set the ATC mode switch on the ATC control panel, P8-29, to the STBY position.

**AKS ALL**

- (e) Make sure that the AOA vanes are set to zero degrees +/-5, with respect to the AOA sensor Alignment Pin [3].

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- (f) Connect the air data model test set, COM-1914, to the airplane.
- (g) Apply pressures as shown in the table below for all the test points.

**NOTE:** At each test value, permit the pressure to become stable for one minute.

All values must be in the limits shown.

Do not hit or shake the indicators before you read the values.

Read the indicators at the same time for each value.

Make sure the indicators move smoothly during pressure changes.

**Table 501/34-21-00-993-808**

Test Point	Static Pressure in. Hg	Altitude feet	Pitot Pressure in. Hg	Airspeed Knots
1	29.921	0	30.311	90
2	24.896	5,000	27.996	250
3	16.886	15,000	17.703	130
4	11.104	25,000	17.013	340
5	7.041	35,000	10.963	280
6	5.286	41,000	7.95	233

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**AKS ALL; 737-800**

- 1) Make sure all the outputs are within the limits specified in the table below.

Use this table:

**Table 502/34-21-00-993-812**

Test Point	Primary Altitude feet	Primary Airspeed knots	Standby Altitude feet	Standby Airspeed Knots
1	-38±15	85±2	0±30	90±3.5
2	4,688±25	238±2	5,000±70	250±5
3	14,880±25	123±2	15,000±110	130±3.5
4	23,887±50	325±2	25,000±160	340±8
5	33,930±60	267±2	35,000±210	279±6
6	40,018±70	222±2	41,000±235	233±6

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- 2) Make sure the differences between the captain's and first officer's primary altimeters and airspeed indicators are not larger than the values shown in the table below.

**Table 503/34-21-00-993-814**

Test Point	Altitude Input feet	Altimeters feet	Airspeed Input knots	Airspeed Indicators knots
1	0	<30	90	<4
2	5,000	<50	250	<4
3	15,000	<50	130	<4
4	25,000	<100	340	<4
5	35,000	<120	280	<4
6	41,000	<140	233	<4

- (h) Remove the pressure from the pitot static lines.
- (i) Disconnect the air data model test set, COM-1914.
- (j) Connect the cabin altitude differential pressure indicator to its static pressure source.

**SUBTASK 34-21-00-210-002**

- (2) Do a visual inspection of the quick-disconnect fittings that you connected.
  - (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

**AKS ALL**

**G. TAT Probe and TAT Probe Heater Test**

**SUBTASK 34-21-00-860-048**

- (1) Do these steps to do the TAT probe and TAT probe heater test:
  - (a) Make sure the air data model test set, COM-1914, test fixtures, adapters, and clamps were removed from the airplane external probes.

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- (b) Use the 0-150 +/- 2 degrees F digital thermometer, STD-1336 to check the temperature of the TAT probe.
- (c) Wait until the temperature shown on the thermometer is steady, then record the TAT temperature value.
- (d) Record the TAT temperature shown on the engine display.
- (e) Make sure the TAT temperature on the engine display is within 2° of the thermometer temperature.
- (f) Open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	4	C00236	HEATERS ELEV PITOT LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
C	3	C01072	HEATERS ALPHA VANE LEFT

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	16	C00570	PROBE INDICATION F/O
F	18	C00569	PROBE INDICATION CAPT

- (h) Set the PROBE HEAT A switch on the forward overhead panel, P5, to the ON position.
- (i) Make sure the TAT temperature on the engine display increases after you permit time for the heaters to warm up.
- (j) Set the PROBE HEAT A switch on the forward overhead panel, P5, to the OFF/AUTO position.
- (k) Connect the analyzer, COM-1562 to the FCC-L test connector J3, pin 51 (HI) and pin 52 (LO) to read the left ADIRU output, ADR label 270.  
*NOTE:* A box, SPL-3896 and cable, SPL-3897 can be used to connect the data bus analyzer and the flight control computer.
- (l) Set the PROBE HEAT A switch on the forward overhead panel, P5, to the ON position.
  - 1) Make sure the ADR label 270 bits 14, 16, and 17 are set to "1".
- (m) Set the PROBE HEAT A switch on the forward overhead panel, P5, to the OFF/AUTO position.
  - 1) Make sure the ADR label 270 bits 14, 16, and 17 are set to "0".
- (n) Disconnect the analyzer, COM-1562 from the FCC-L test connector J3.  
*NOTE:* Disconnect the box, SPL-3896 and cable, SPL-3897 if you used them to connect the data bus analyzer and the flight control computer.

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- (o) Connect the analyzer, COM-1562 to the FCC-R test connector J3, pin 51 (HI) and pin 52 (LO) to read the right ADIRU output, ADR label 270.

NOTE: A box, SPL-3896 and cable, SPL-3897 can be used to connect the data bus analyzer and the flight control computer.

- (p) Close these circuit breakers:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT

- (q) Set the PROBE HEAT B switch on the forward overhead panel, P5, to the ON position.  
1) Make sure the ADR label 270 bits 14, and 17 are set to "1".
- (r) Set the PROBE HEAT A switch on the forward overhead panel, P5, to the ON position.  
1) Make sure the ADR label 270 bit 16 is set to "1".
- (s) Set the PROBE HEAT B switch on the forward overhead panel, P5, to the OFF/AUTO position.  
1) Make sure the ADR label 270 bits 14, and 17 are set to "0".
- (t) Set the PROBE HEAT A switch on the forward overhead panel, P5, to the OFF/AUTO position.  
1) Make sure the ADR label 270 bit 16 is set to "0".
- (u) Remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	4	C00236	HEATERS ELEV PITOT LEFT
D	4	C00237	HEATERS ELEV PITOT RIGHT
D	6	C00524	HEATERS AUX PITOT

## H. AOA Interface Test

SUBTASK 34-21-00-730-013

- (1) Do the following steps to test the left AOA:  
(a) Install the angle of attack probe test fixture, SPL-1917, on the left AOA sensor.  
(b) Connect the analyzer, COM-1562 to the FCC-L test connector J3, pin 51(HI) and pin 52(LO) to read the left ADIRU output, ADR label 221.  
NOTE: A box, SPL-3896 and cable, SPL-3897 can be used to connect the data bus analyzer and the flight control computer.  
(c) Rotate the left AOA vane trailing edge 30.0 degrees up.  
(d) Make sure that the ADIRU-Left ADR output label 221 reads 30.0 +/- 1.0 degrees.  
(e) Rotate the left AOA vane trailing edge to 0.0 degrees.  
(f) Make sure that the ADIRU-Left ADR output label 221 reads 0.0 +/- 1.0 degrees.  
(g) Remove the angle of attack probe test fixture, SPL-1917, from the left AOA sensor.  
(h) Remove the analyzer, COM-1562, from the left FCC.

SUBTASK 34-21-00-730-014

- (2) Do the following steps to test the right AOA:  
(a) Install the angle of attack probe test fixture, SPL-1917, on the right AOA sensor.

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- (b) Connect the analyzer, COM-1562 to the FCC-R test connector J3, pin 51(HI) and pin 52(LO) to read the right ADIRU output, ADR label 221.

NOTE: A box, SPL-3896 and cable, SPL-3897 can be used to connect the data bus analyzer and the flight control computer.

- (c) Rotate the right AOA vane trailing edge 30.0 degrees up.
- (d) Make sure that the ADIRU-Right ADR output label 221 reads 30.0 +/- 1.0 degrees.
- (e) Rotate the right AOA vane trailing edge to 0.0 degrees.
- (f) Make sure that the ADIRU-Right ADR output label 221 reads 0.0 +/- 1.0 degrees.
- (g) Remove the angle of attack probe test fixture, SPL-1917, from the right AOA sensor.
- (h) Remove the analyzer, COM-1562, from the right FCC.

**I. ALTERNATE VMO/MMO Switch Test**

SUBTASK 34-21-00-860-074

- (1) Do these steps to do the ALTERNATE VMO/MMO switch test:
- (a) Connect the analyzer, COM-1562 to the FCC-L test connector J3, pin 51(HI) and pin 52(LO) to read the left ADIRU output, ADR label 270.
  - (b) Make sure that the ALTERNATE VMO/MMO switch in the EE bay service panel, Maintenance Zone 118, is set to the NORM position.
    - 1) Make sure the ADR label 270 bit 23 is set to "0".
  - (c) Set the ALTERNATE VMO/MMO switch in the EE bay service panel, Maintenance Zone 118, to the ALTN position.
    - 1) Make sure the ADR label 270 bit 23 is set to "1".
  - (d) Set the ALTERNATE VMO/MMO switch in the EE bay service panel, Maintenance Zone 118, to the NORM position.
    - 1) Make sure the ADR label 270 bit 23 is set to "0".
  - (e) Disconnect the analyzer, COM-1562 from the FCC-L test connector J3.
  - (f) Connect the analyzer, COM-1562 to the FCC-R test connector J3, pin 51(HI) and pin 52(LO) to read the right ADIRU output, ADR label 270.
  - (g) Make sure that the ALTERNATE VMO/MMO switch in the EE bay service panel, Maintenance Zone 118, is set to the NORM position.
    - 1) Make sure the ADR label 270 bit 23 is set to "0".
  - (h) Set the ALTERNATE VMO/MMO switch in the EE bay service panel, Maintenance Zone 118, to the ALTN position.
    - 1) Make sure the ADR label 270 bit 23 is set to "1".
  - (i) Set the ALTERNATE VMO/MMO switch in the EE bay service panel, Maintenance Zone 118, to the NORM position.
    - 1) Make sure the ADR label 270 bit 23 is set to "0".

**J. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-21-00-730-009

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

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SUBTASK 34-21-00-860-080

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

**F/O Electrical System Panel, P6-2**

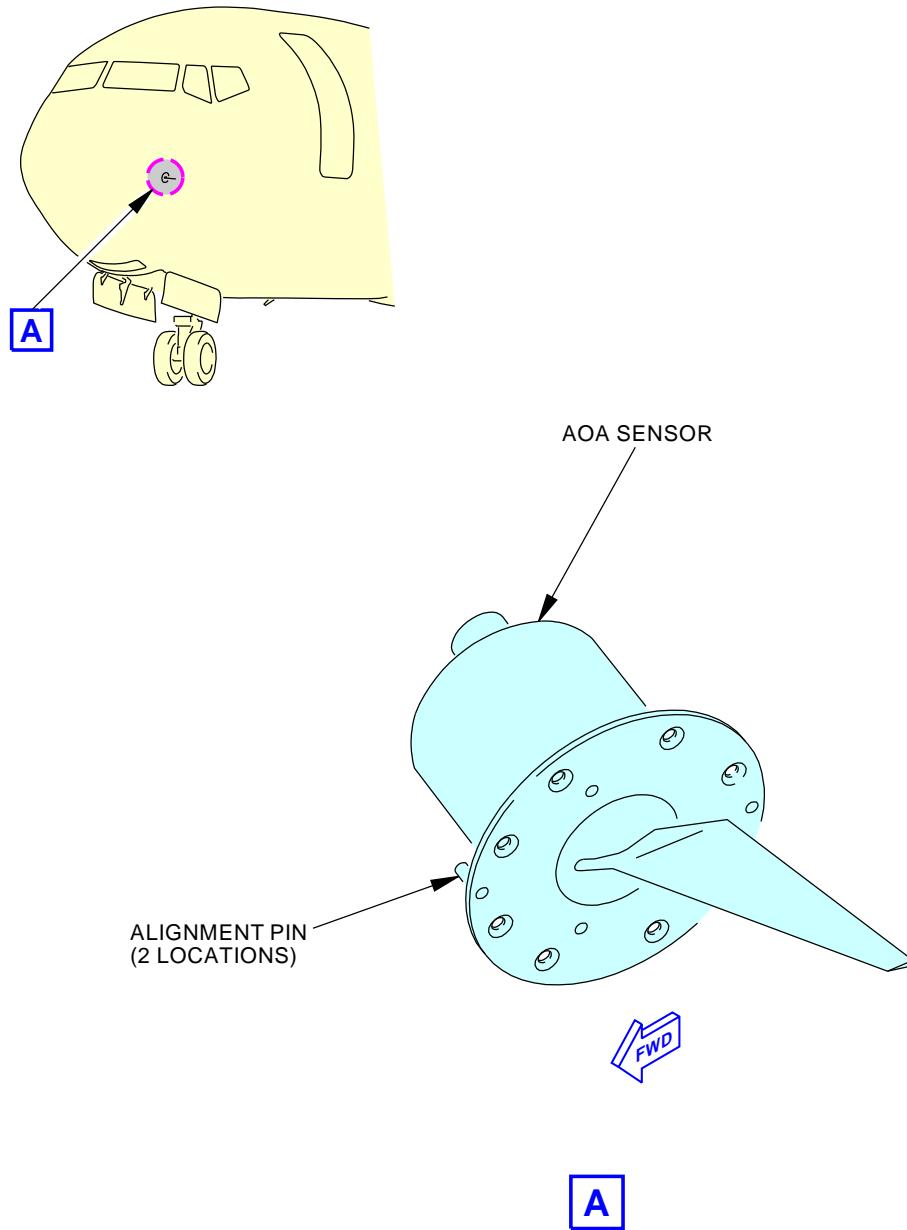
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C00566	FLIGHT CONTROL FLAP LOAD RELIEF

———— END OF TASK ————

EFFECTIVITY  
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**NOTE:**

LEFT AOA SENSOR IS SHOWN, RIGHT AOA SENSOR IS OPPOSITE.

J74791 S0000178076\_V2

**Angle of Attack (AOA) Alignment**  
**Figure 501/34-21-00-990-805**

EFFECTIVITY  
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AIR DATA INERTIAL REFERENCE UNIT - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the air data inertial reference unit (ADIRU)
  - (2) An installation of the ADIRU.
- B. Two ADIRUs are installed in the main equipment center. The left and right ADIRUs are installed on shelf No. 2 in the E5 electronic equipment rack.

**TASK 34-21-01-000-801**

**2. Air Data Inertial Reference Unit Removal**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to remove the air data inertial reference unit (ADIRU).
- (2) The removal instructions are the same for the two ADIRUs.

**B. References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-000-801	E/E Box Removal (P/B 201)

**C. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Removal Procedure**

SUBTASK 34-21-01-860-001

- (1) Set the applicable mode select switch on the IRS mode select unit (MSU) to the OFF position.

SUBTASK 34-21-01-860-002

- (2) For the left ADIRU, open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

- (3) For the right ADIRU, open these circuit breakers and install safety tags:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC

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(Continued)

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-01-010-001

- (4) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

(TASK 06-41-00-800-801).

SUBTASK 34-21-01-020-001

**WARNING:** DO NOT REMOVE THE SHIMS FROM THE SHELF. SPECIAL EQUIPMENT AND BOEING AID IS NECESSARY TO ALIGN THE SHELF IF YOU REMOVE THE SHIMS. YOU CANNOT ALIGN THE SHELF IF YOU REMOVE THE SHIMS. IF YOU REMOVE THE SHIMS, THE AIR DATA WILL NOT BE ACCURATE, WHICH CAN CAUSE PROBLEMS WITH SAFETY OF FLIGHT.

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

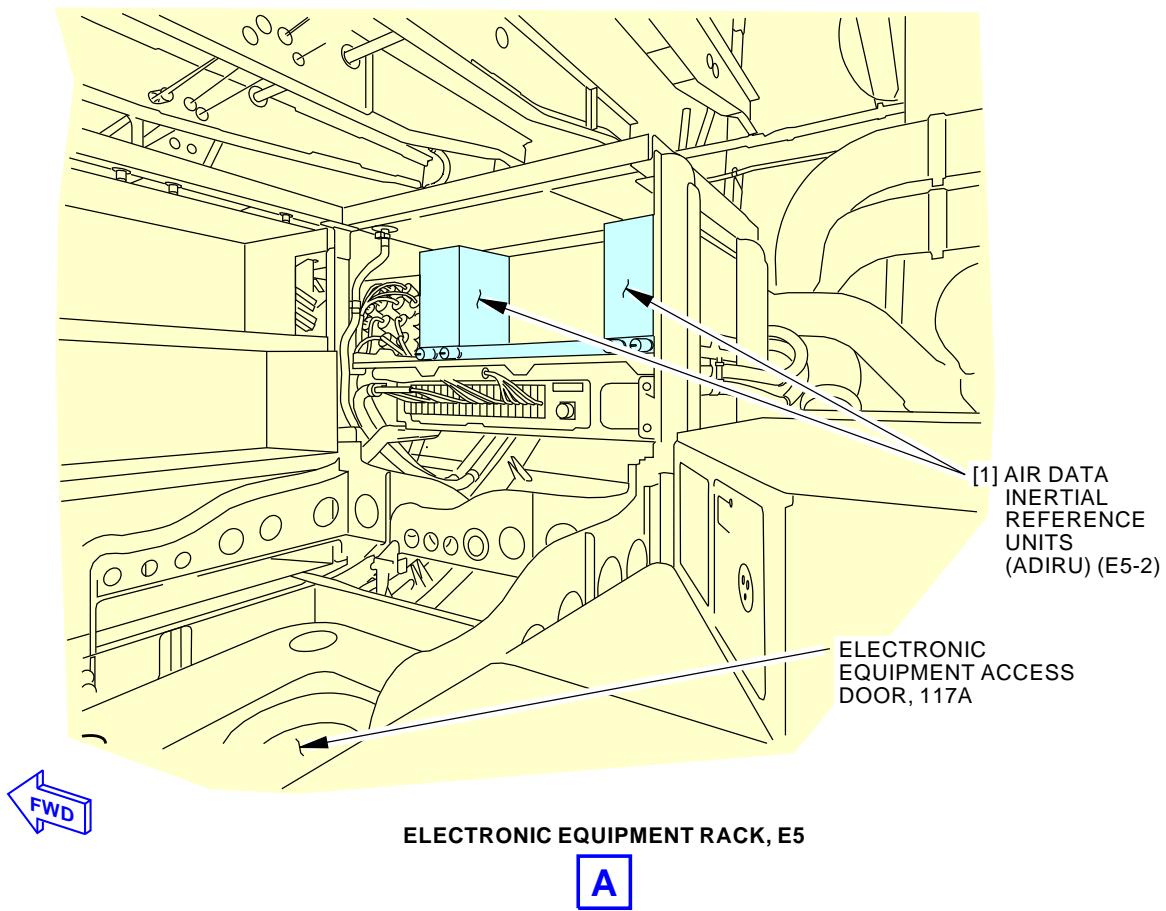
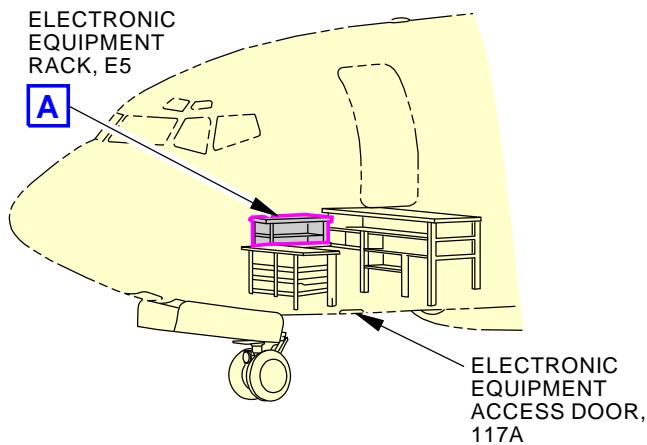
**CAUTION:** REMOVAL OF THE ADIRU WILL DISABLE THE GROUND CREW CALL FUNCTION OF THE EQUIPMENT COOLING LOW FLOW DETECTION. THIS COOLING LOW FLOW CONDITION COULD CAUSE DAMAGE TO THE EQUIPMENT.

- (5) Remove the ADIRU [1] from the shelf (TASK 20-10-07-000-801).

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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**Air Data Inertial Reference Unit (ADIRU) Installation  
Figure 401/34-21-01-990-801**

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**TASK 34-21-01-400-801**

**3. Air Data Inertial Reference Unit Installation**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to install the ADIRU [1].

NOTE: The air data inertial reference unit is referred as the ADIRU in this task.

- (2) The installation instructions are the same for the two ADIRUs.

- (3) The installation test makes sure that the ADIRU [1] is installed correctly.

**B. References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-710-801	Air Data Inertial Reference System - Operational Test (P/B 501)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**C. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ADIRU	34-21-01-005	AKS ALL
		34-21-01-005Z	AKS 001-006

**D. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**E. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**F. Installation Procedure**

SUBTASK 34-21-01-860-003

- (1) Make sure the applicable mode select switch on the IRS MSU is in the OFF position.

SUBTASK 34-21-01-860-004

- (2) For the left ADIRU, make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

EFFECTIVITY  
AKS ALL

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- (3) For the right ADIRU, make sure that these circuit breakers are open:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-01-420-001

**WARNING:** DO NOT REMOVE THE SHIMS FROM THE SHELF. SPECIAL EQUIPMENT AND BOEING AID IS NECESSARY TO ALIGN THE SHELF IF YOU REMOVE THE SHIMS. YOU CANNOT ALIGN THE SHELF IF YOU REMOVE THE SHIMS. IF YOU REMOVE THE SHIMS, THE AIR DATA WILL NOT BE ACCURATE, WHICH CAN CAUSE PROBLEMS WITH SAFETY OF FLIGHT.

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

- (4) Install the ADIRU [1] on the shelf (TASK 20-10-07-400-801).

SUBTASK 34-21-01-860-005

- (5) For the left ADIRU, remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

- (6) For the right ADIRU, remove the safety tags and close these circuit breakers:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-01-410-001

- (7) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door  
(TASK 06-41-00-800-801).

**G. Installation Test**

SUBTASK 34-21-01-860-006

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

SUBTASK 34-21-01-741-001

- (2) Do this task: Air Data Inertial Reference System - Operational Test, TASK 34-21-00-710-801

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SUBTASK 34-21-01-860-007

- (3) For the applicable ADIRU, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-21-01-860-008

- (4) Set the applicable mode select switch on the IRS MSU to the OFF position.

SUBTASK 34-21-01-860-009

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

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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INERTIAL SYSTEM DISPLAY UNIT - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has two tasks:
  - (1) A removal of the inertial system display unit (ISDU)
  - (2) An installation of the ISDU.
- B. The ISDU is installed on the P5 overhead panel in the flight compartment.

**TASK 34-21-02-000-801**

**2. Inertial System Display Unit Removal**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to remove the ISDU [1].

**B. Location Zones**

Zone	Area
211	Flight Compartment - Left

**C. Removal Procedure**

SUBTASK 34-21-02-860-001

- (1) Set the two mode select switches on the IRS mode select unit (MSU) to the OFF position.

SUBTASK 34-21-02-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-02-020-001

- (3) Do these steps to remove the ISDU [1]:
  - (a) Release the quarter-turn fasteners [2] on the front of the ISDU [1].

**CAUTION:** CAREFULLY REMOVE THE ISDU FROM THE INSTRUMENT PANEL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE ELECTRICAL CABLES ON THE REAR OF THE ISDU.

- (b) Carefully lower the ISDU [1] until you can get access to the electrical connectors [3].

EFFECTIVITY  
AKS ALL

**34-21-02**



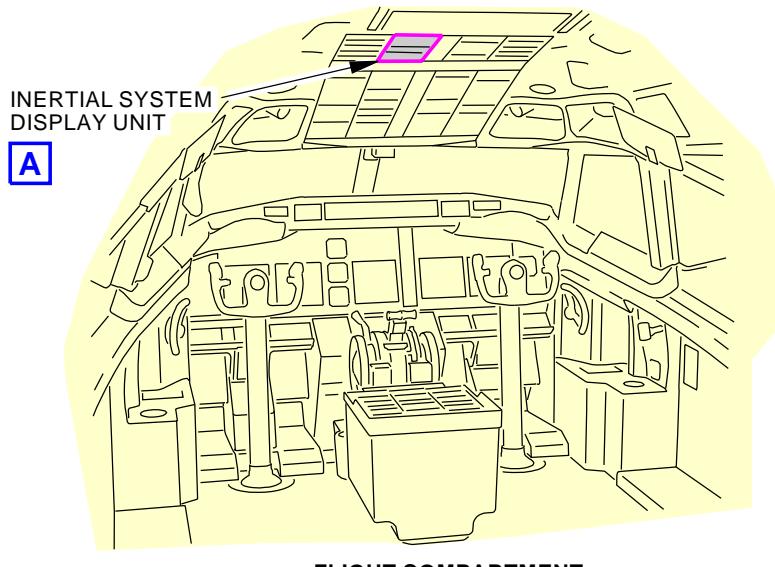
**737-600/700/800/900**  
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- (c) Disconnect the electrical connectors [3] from the rear of the ISDU [1].

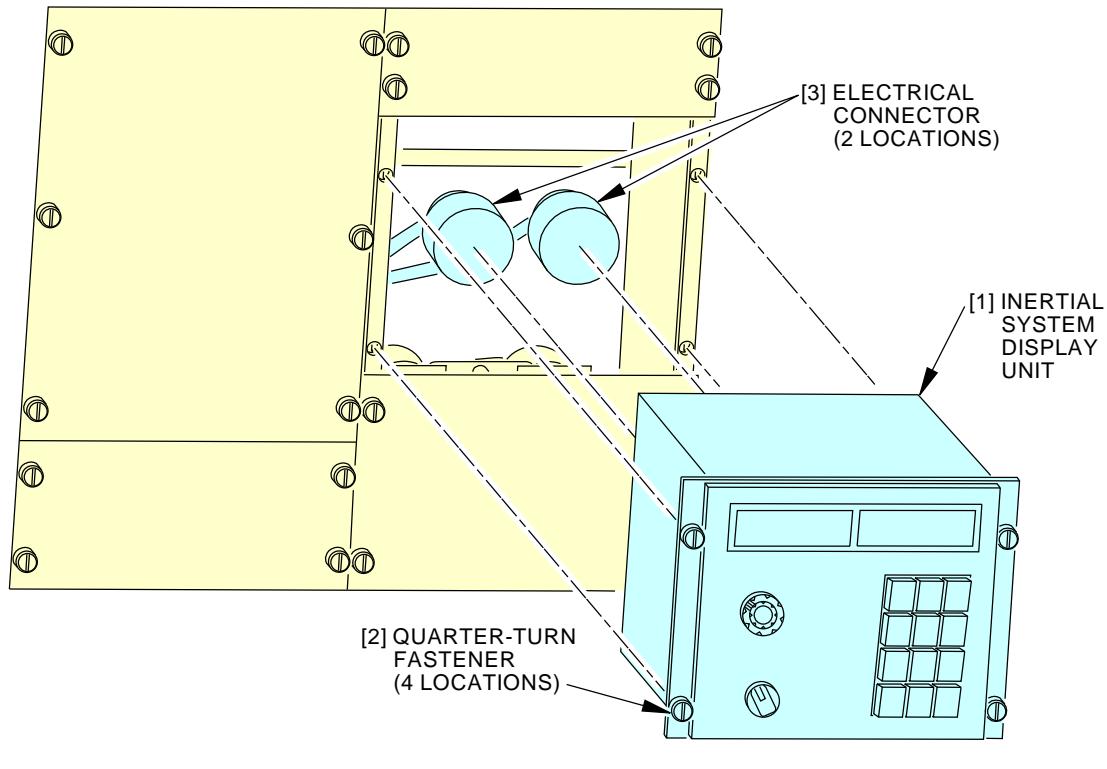
———— END OF TASK ——

———— EFFECTIVITY ——  
AKS ALL

**34-21-02**



FLIGHT COMPARTMENT



G48059 S0006576608\_V2

**Inertial System Display Unit Installation**  
Figure 401/34-21-02-990-801

EFFECTIVITY  
AKS ALL

**34-21-02**



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TASK 34-21-02-400-801

3. Inertial System Display Unit Installation

(Figure 401)

A. General

- (1) This procedure gives instructions to install the ISDU [1].

B. References

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

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ISDU	34-21-02-03-020	AKS ALL

D. Location Zones

Zone	Area
211	Flight Compartment - Left

E. Installation Procedure

SUBTASK 34-21-02-860-003

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-02-420-001

- (2) Do these steps to install the ISDU [1]:
- Connect the electrical connectors [3] to the ISDU [1].
  - Carefully install the ISDU [1] into the P5 panel.
  - Lock the quarter-turn fasteners [2] on the front of the ISDU [1].

SUBTASK 34-21-02-860-004

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC

EFFECTIVITY  
AKS ALL

**34-21-02**



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(Continued)

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

**F. Installation test**

SUBTASK 34-21-02-860-005

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

SUBTASK 34-21-02-860-006

- (2) Set the two mode select switches on the IRS MSU to the NAV position.

SUBTASK 34-21-02-710-001

- (3) Do a test of the ISDU as follows:

- (a) Set the SYS DSPL switch on the ISDU [1] to the L position.
- (b) Hold the DSPL SEL switch on the ISDU [1] in the TEST position.
- (c) Make sure all the annunciators on the left side of the IRS MSU come on for approximately two seconds.
- (d) Release the DSPL SEL switch.
- (e) Set the SYS DSPL switch on the ISDU [1] to the R position.
- (f) Hold the DSPL SEL switch on the ISDU [1] in the TEST position.
- (g) Make sure all the annunciators on the right side of the IRS MSU come on for approximately two seconds.
- (h) Release the DSPL SEL switch.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-21-02-860-007

- (1) Set the two mode select switches on the IRS MSU to the OFF position.

SUBTASK 34-21-02-860-008

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

———— END OF TASK ————



**34-21-02**



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IRS MODE SELECT UNIT - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the IRS mode select unit (MSU)
  - (2) An installation of the IRS MSU.
- B. The IRS MSU is installed on the P5-69 aft overhead panel in the flight compartment.
- C. Each mode select switch has a mechanically locked position. The mechanically locked positions prevent accidental movement of the switch. When you change the switch position, you need to pull the switch away from the unit and set the switch to the different position. This will prevent damage to the switch.

**TASK 34-21-03-000-801**

**2. IRS Mode Select Unit Removal**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to remove the IRS MSU [2].

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left

**C. Removal Procedure**

SUBTASK 34-21-03-860-001

- (1) Set the two mode select switches on the IRS MSU [2] to the OFF position.

SUBTASK 34-21-03-860-002

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT

SUBTASK 34-21-03-020-001

- (3) Do these steps to remove the IRS MSU [2]:

- (a) Release the quarter-turn fasteners [3] on the front of the IRS MSU [2].

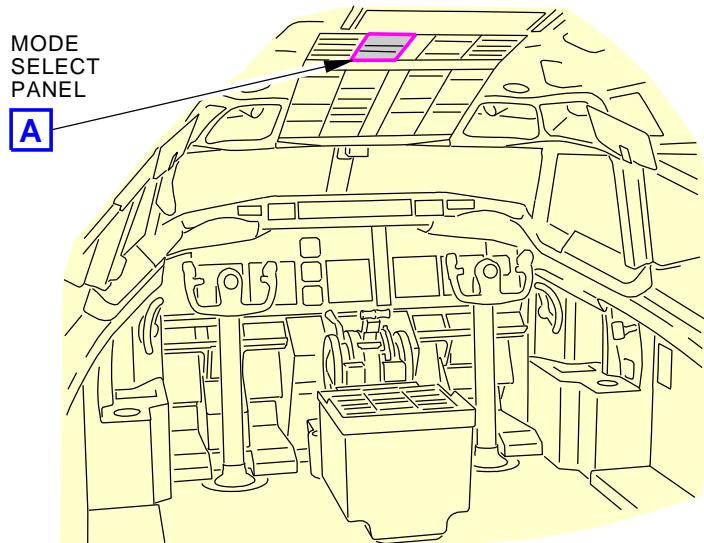
**CAUTION:** CAREFULLY REMOVE THE IRS MSU FROM THE INSTRUMENT PANEL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE ELECTRICAL CABLE AT THE REAR OF THE IRS MSU.

- (b) Carefully lower the IRS MSU [2] until you can get access to the electrical connector [1].
  - (c) Disconnect the electrical connector [1] from the rear of the IRS MSU [2].

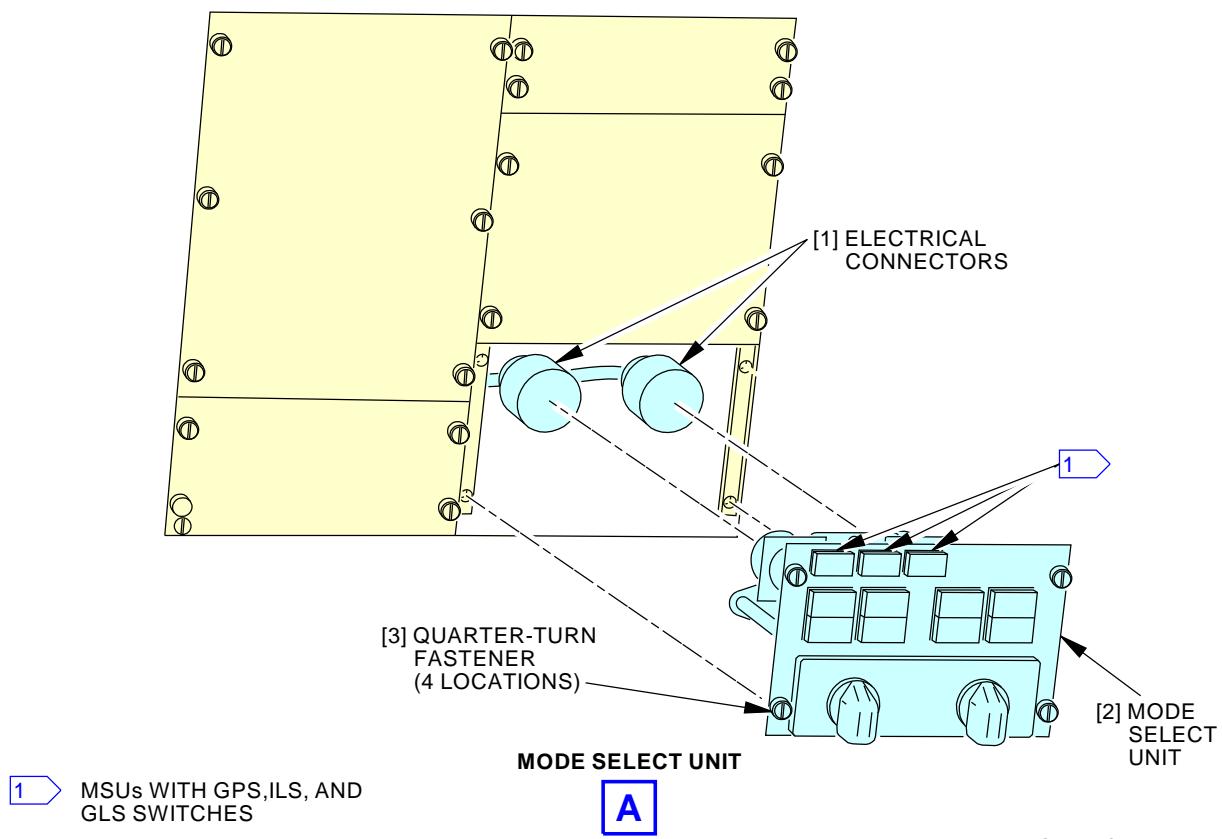
———— END OF TASK ————



**34-21-03**



FLIGHT COMPARTMENT



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### Mode Select Unit (MSU) Installation

Figure 401/34-21-03-990-801

EFFECTIVITY  
AKS ALL

**34-21-03**



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TASK 34-21-03-400-801

3. IRS Mode Select Unit Installation

(Figure 401)

A. General

- (1) This procedure gives instructions to install the IRS MSU [2].
- (2) The installation test makes sure the IRS MSU [2] is installed correctly.

B. References

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

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	MSU	31-11-95-05S-030	AKS 007, 008, 011, 012, 014, 019, 026, 028-999
		31-11-95-13G-030	AKS 001-006, 009, 010, 013, 015-018, 020-025, 027
		33-11-52-08S-020	AKS 014, 019, 026, 028-999
		33-11-52-08S-030	AKS 007, 008, 011, 012, 014, 019, 026, 028-999
		33-11-52-13G-020	AKS 001-006, 009, 010, 013, 015-018, 020-025, 027
		34-21-03-01-015	AKS 001-013, 015-018, 020-025, 027
		34-21-03-01-025	AKS 001-013, 015-018, 020-025, 027
		34-21-03-01-200	AKS 014, 019, 026, 028-999
		34-21-03-01-210	AKS 014, 019, 026, 028-999

D. Location Zones

Zone	Area
211	Flight Compartment - Left

E. Installation Procedure

SUBTASK 34-21-03-860-003

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT

SUBTASK 34-21-03-420-001

- (2) Do these steps to install the IRS MSU [2]:

EFFECTIVITY
AKS ALL

**34-21-03**



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- (a) Connect the electrical connector [1] to the IRS MSU [2].
- (b) Carefully install the IRS MSU [2] into the P5-69, aft overhead panel.
- (c) Lock the quarter-turn fasteners [3] on the front of the IRS MSU [2].

SUBTASK 34-21-03-860-004

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT

**F. Installation Test**

SUBTASK 34-21-03-860-005

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

SUBTASK 34-21-03-860-006

- (2) Set the two mode select switches on the IRS MSU [2] to the NAV position.

SUBTASK 34-21-03-750-001

- (3) Make sure the two ON DC annunciators on the IRS MSU [2] come on for approximately 5 seconds.

SUBTASK 34-21-03-750-002

- (4) Make sure the two ALIGN annunciators on the IRS MSU [2] come on after the two ON DC annunciators go off.

SUBTASK 34-21-03-750-003

- (5) Adjust the Overhead Panel Light Bright/Dim Control Switch from the off position to the fully bright position.
  - (a) Make sure that the panel lights on the MSU become brighter.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-21-03-860-007

- (1) Set the two mode select switches on the IRS MSU [2] to the OFF position.

SUBTASK 34-21-03-860-008

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

———— END OF TASK ————



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AIR DATA MODULE - REMOVAL/INSTALLATION

**1. General**

A. This procedure has these tasks:

- (1) A removal of the pitot air data module (ADM)
- (2) An installation of the pitot ADM
- (3) A removal of the static ADM
- (4) An installation of the static ADM.

**TASK 34-21-04-000-801**

**2. Pitot Air Data Module - Removal**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to remove the pitot ADM [4]. The two pitot ADMs [4] are located in the forward equipment compartment at STA 200, WL 180. They are accessed thru the forward equipment access door.
- (2) The removal instructions are the same for the two pitot ADMs [4].

**B. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

**C. Removal Procedure**

SUBTASK 34-21-04-860-001

- (1) For the left ADM [4], open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

- (2) For the right ADM [4], open these circuit breakers and install safety tags:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-04-020-001

- (3) Do these steps to remove the pitot ADM [4]:

- (a) Disconnect the pneumatic connector [3] from the ADM [4].
- (b) Put a protective cover on the pneumatic connector [3] of the ADM [4].
- (c) Disconnect the electrical connector [2] from the ADM [4].
- (d) Put a protective cover on the electrical connector [2] of the ADM [4].

EFFECTIVITY  
AKS ALL

**34-21-04**



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- (e) While you hold the ADM [4], loosen the captive screws [1] at each corner of the ADM [4].
- (f) Remove the ADM [4].

———— END OF TASK ————

———— EFFECTIVITY ————  
**AKS ALL**

**34-21-04**

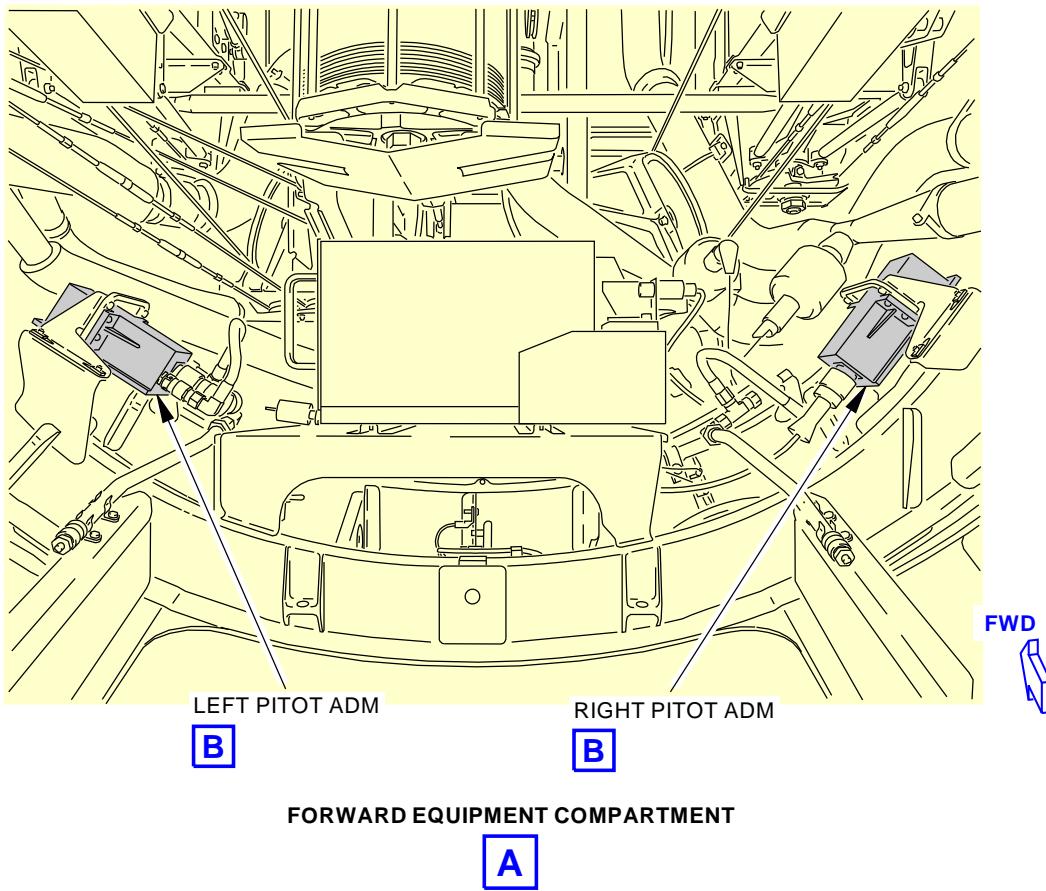
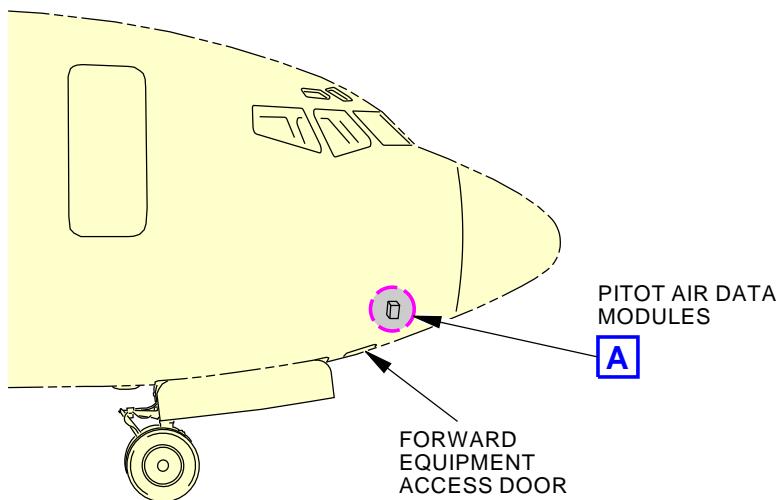
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**Pitot Air Data Module (ADM) Installation**  
Figure 401/34-21-04-990-801 (Sheet 1 of 2)

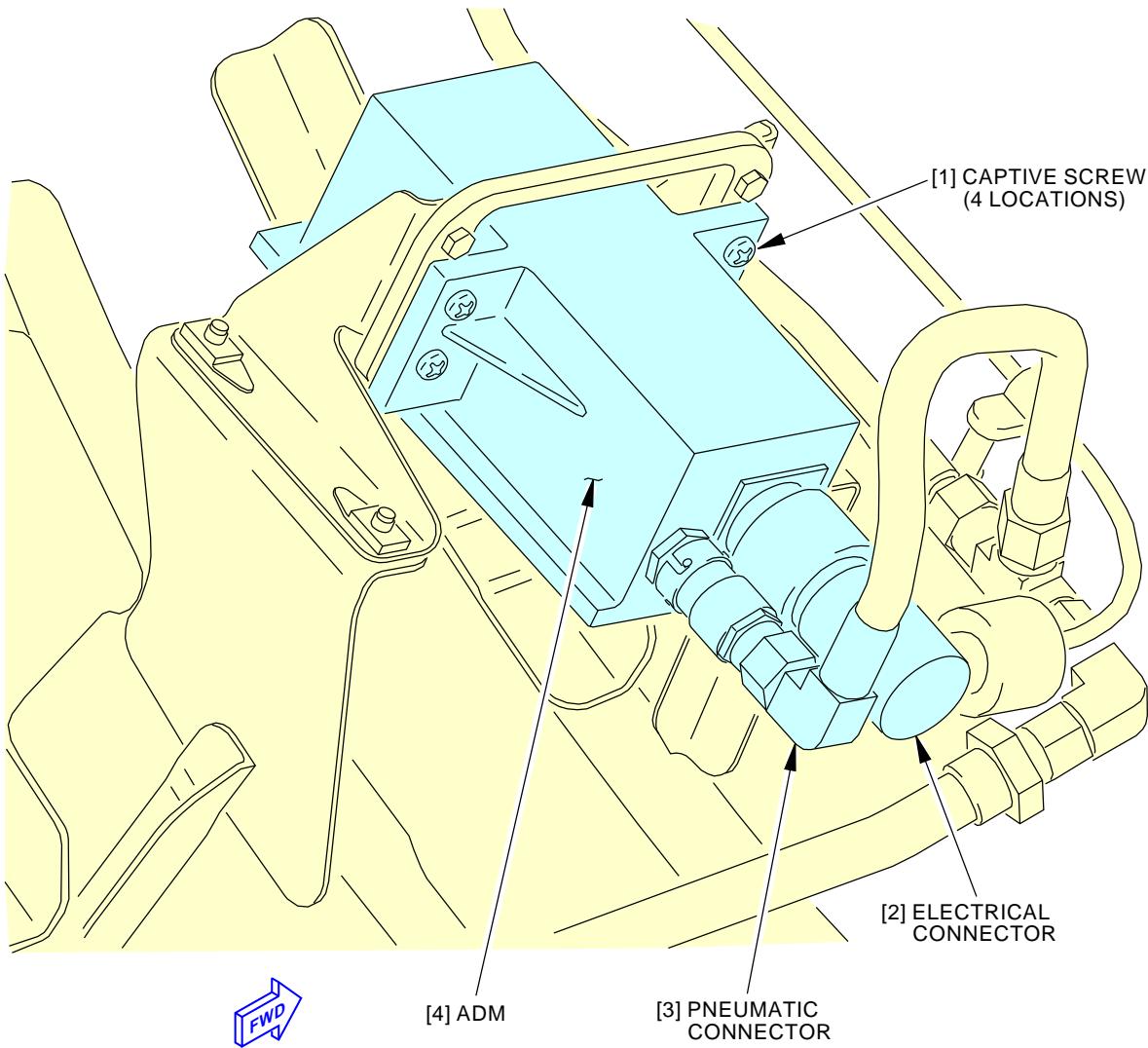
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PITOT AIR DATA MODULE (ADM)  
(EXAMPLE)

B

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Pitot Air Data Module (ADM) Installation  
Figure 401/34-21-04-990-801 (Sheet 2 of 2)

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**TASK 34-21-04-400-801**

**3. Pitot Air Data Module - Installation**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to install the pitot ADM [4]. The two pitot ADMs [4] are located in the forward equipment compartment at STA 200, WL 180. They are accessed thru the forward equipment access door.
- (2) The installation instructions are the same for the two pitot ADMs [4].

**B. References**

Reference	Title
34-21-00-710-801	Air Data Inertial Reference System - Operational Test (P/B 501)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**C. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

**D. Installation Procedure**

SUBTASK 34-21-04-860-003

- (1) For the left ADM [4], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

- (2) For the right ADM [4], make sure that these circuit breakers are open:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-04-420-001

- (3) Do these steps to install the pitot ADM [4]:

- (a) Put the ADM [4] into position on the airplane.
- (b) Tighten the captive screws [1] at each corner of the ADM [4] to 15 in-lb (1.7 N·m) to 25 in-lb (2.8 N·m).
- (c) Remove the protective cover from the electrical connector [2] of the ADM [4].
- (d) Examine the electrical connector [2] for loose, bent or broken pins.
- (e) Connect the electrical connector [2] to the ADM [4].



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- (f) Remove the protective cover from the pneumatic connector [3] of the ADM [4].
- (g) Connect the pneumatic connector [3] to the ADM [4].

SUBTASK 34-21-04-210-001

- (4) Make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fittings.

SUBTASK 34-21-04-860-004

- (5) For the left ADM [4], remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

- (6) For the right ADM [4], remove the safety tags and close these circuit breakers:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

**E. Post Installation Test**

SUBTASK 34-21-04-860-005

- (1) Do this task: (Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801).

SUBTASK 34-21-04-740-001

- (2) Do this task: Air Data Inertial Reference System - Operational Test, TASK 34-21-00-710-801.
  - (a) Make sure the NO CURRENT FAULT message shows on the CDU.

————— END OF TASK ————

**TASK 34-21-04-000-802**

**4. Static Air Data Module - Removal**

(Figure 402)

**A. General**

- (1) This procedure gives instructions to remove the static ADM [4]. The two static ADMs [4] are located in the forward cargo compartment at STA 405 and STA 435, WL 206, BL 0. They are accessed thru the forward cargo door.
- (2) The removal instructions are the same for the two static ADMs [4].

**B. References**

<b>Reference</b>	<b>Title</b>
25-52-09-000-801	Cargo Compartment Ceiling Liner - Removal (P/B 401)



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C. Location Zones

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right

D. Removal Procedure

SUBTASK 34-21-04-860-002

- (1) For the left ADM [3], open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

- (2) For the right ADM [3], open these circuit breakers and install safety tags:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-04-010-001

- (3) To remove the ceiling liner for the applicable static ADM [4] in the forward cargo compartment, do this task: Cargo Compartment Ceiling Liner - Removal, TASK 25-52-09-000-801.

SUBTASK 34-21-04-020-002

- (4) Do these steps to remove the static ADM [4]:

- (a) Disconnect the pneumatic connector [3] from the ADM [4].
- (b) Put a protective cover on the pneumatic connector [3] of the ADM [4].
- (c) Disconnect the electrical connector [2] from the ADM [4].
- (d) Put a protective cover on the electrical connector [2] of the ADM [4].
- (e) While you hold the ADM [4], loosen the captive screws [1] at each corner of the ADM [4].
- (f) Remove the ADM [4].

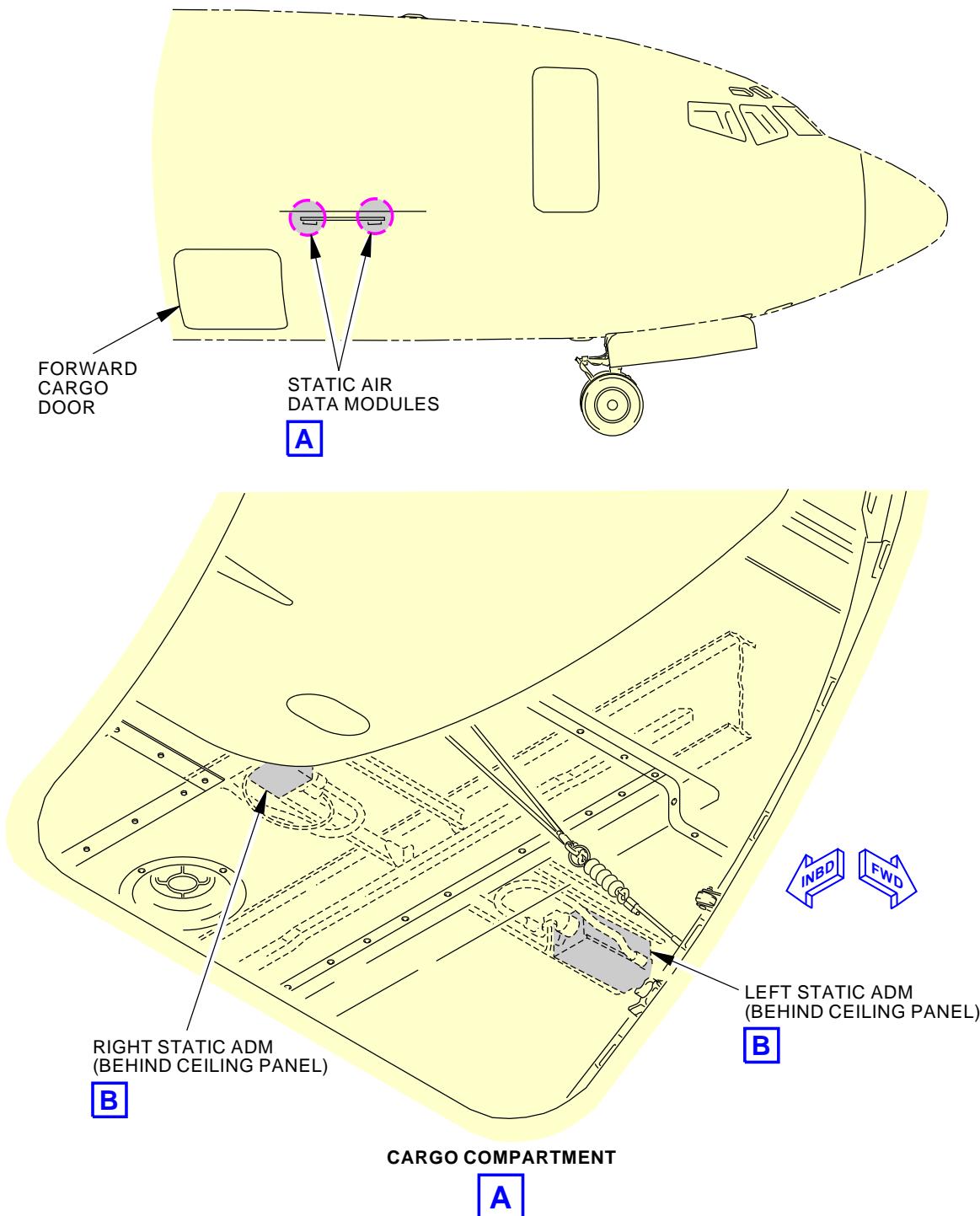
———— END OF TASK ————



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**Static Air Data Module (ADM) Installation**  
Figure 402/34-21-04-990-802 (Sheet 1 of 2)

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**34-21-04**

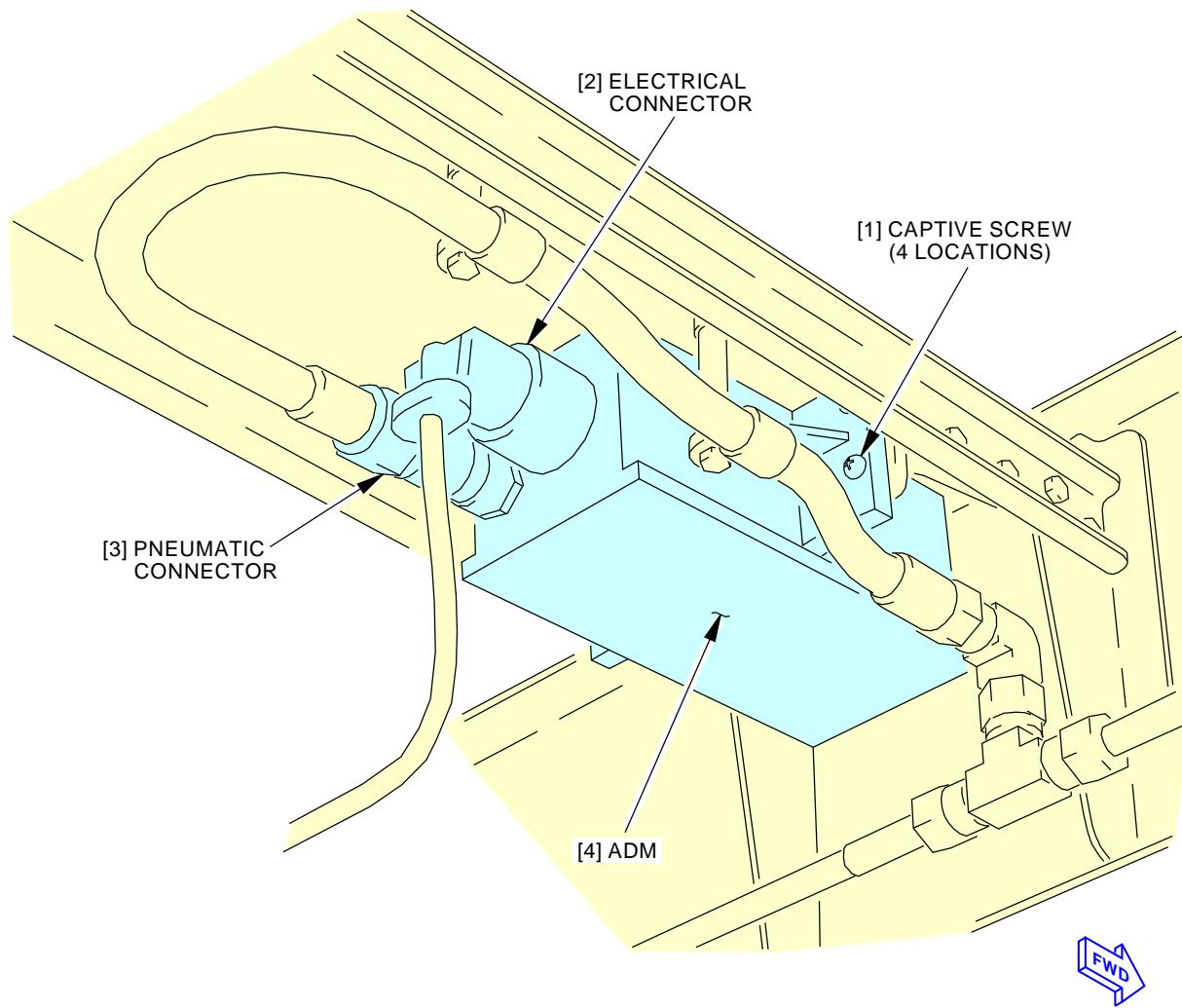
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STATIC AIR DATA MODULE (ADM)  
(EXAMPLE)

B

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Static Air Data Module (ADM) Installation  
Figure 402/34-21-04-990-802 (Sheet 2 of 2)

EFFECTIVITY  
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34-21-04



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**TASK 34-21-04-400-802**

**5. Static Air Data Module - Installation**

(Figure 402)

**A. General**

- (1) This procedure gives instructions to install the static ADM [4]. The two static ADMs [4] are located in the forward cargo compartment at STA 405 and STA 435, WL 206, BL 0. They are accessed thru the forward cargo door.
- (2) The installation instructions are the same for the two static ADM [4].

**B. References**

Reference	Title
25-52-09-400-801	Cargo Compartment Ceiling Liner - Installation (P/B 401)
34-21-00-710-801	Air Data Inertial Reference System - Operational Test (P/B 501)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**C. Location Zones**

Zone	Area
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right

**D. Installation Procedure**

SUBTASK 34-21-04-860-006

- (1) For the left ADM [3], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
E	8	C00425	ADIRU LEFT EXC

- (2) For the right ADM [3], make sure that these circuit breakers are open:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-21-04-420-002

- (3) Do these steps to install the static ADM [4]:

- (a) Put the ADM [4] into position on the airplane.
- (b) Tighten the captive screws [1] at each corner of the ADM [4] to 15 in-lb (1.7 N·m) to 25 in-lb (2.8 N·m).
- (c) Remove the protective cover from the electrical connector [2] of the ADM [4].

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- (d) Examine the electrical connector [2] for loose, bent or broken pins.
- (e) Connect the electrical connector [2] to the ADM [4].
- (f) Remove the protective cover from the pneumatic connector [3] of the ADM [4].
- (g) Connect the pneumatic connector [3] to the ADM [4].

SUBTASK 34-21-04-210-002

- (4) Make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fittings.

SUBTASK 34-21-04-410-001

- (5) To install the ceiling liner for the applicable static ADM [4] in the forward cargo compartment, do this task: Cargo Compartment Ceiling Liner - Installation, TASK 25-52-09-400-801.

SUBTASK 34-21-04-860-007

- (6) For the left ADM [3], remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

- (7) For the right ADM [3], remove the safety tags and close these circuit breakers:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	15	C00426	ADIRU RIGHT EXC
C	17	C01010	ADIRU RIGHT DC

**E. Post Installation Test**

SUBTASK 34-21-04-860-008

- (1) Do this task: (Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801).

SUBTASK 34-21-04-740-002

- (2) Do this task: Air Data Inertial Reference System - Operational Test, TASK 34-21-00-710-801.
  - (a) Make sure the NO CURRENT FAULT message shows on the CDU.

———— END OF TASK ————



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**ANGLE OF ATTACK SENSOR - REMOVAL/INSTALLATION**

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the Angle of Attack (AOA) sensor
  - (2) An installation of the AOA sensor.
- B. Two AOA sensors are installed on the airplane. The left and right AOA sensors are mounted on the left and right sides respectively, outboard and above the nose landing gear wheel well.

**TASK 34-21-05-000-801**

**2. Angle of Attack Sensor - Removal**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to remove the AOA Sensor [1].
- (2) The removal instructions are the same for the two AOA Sensors [1].

**B. Tools/Equipment**

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

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**C. Location Zones**

Zone	Area
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right



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D. Prepare for Removal

SUBTASK 34-21-05-860-001

- (1) For the left AOA sensor [1], open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	6	C01205	SMYD-1 SNSR EXC AC
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C01072	HEATERS ALPHA VANE LEFT

- (2) For the right AOA sensor [1], open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01207	SMYD-2 SNSR EXC AC
C	15	C00426	ADIRU RIGHT EXC

E. AOA Sensor Removal

SUBTASK 34-21-05-020-002

**WARNING:** MAKE SURE THAT THE AOA HEAT IS NOT ON. IF YOU DO NOT, INJURY TO PERSONS CAN OCCUR.

- (1) Do these steps to remove the AOA Sensor [1]:

- Use a sealant removal tool, COM-2481 to remove the sealant from around the AOA Sensor [1].
- Remove the screws [2] from the AOA Sensor [1].

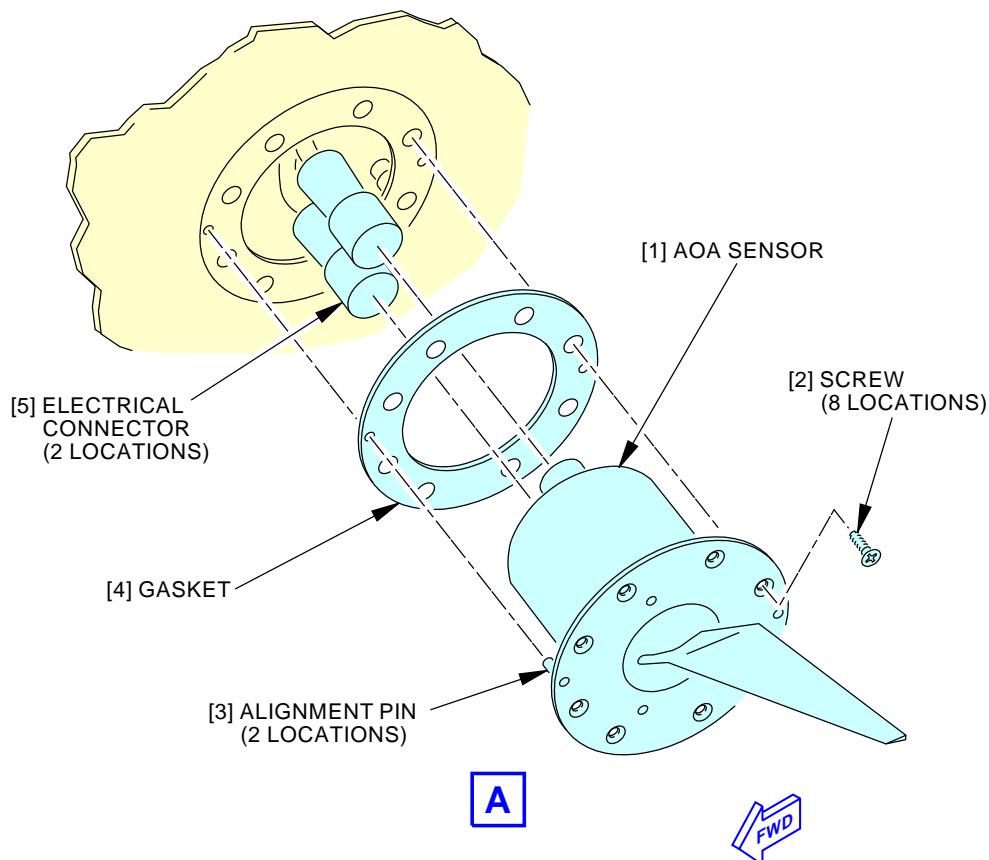
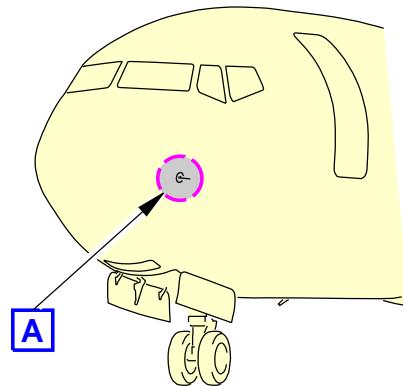
**CAUTION:** DO NOT USE TOO MUCH FORCE. TOO MUCH FORCE WILL CAUSE DAMAGE.

- Carefully pull the AOA Sensor [1] out until you can get to the electrical connectors [5].
- Disconnect the electrical connectors [5] from the AOA Sensor [1].
- Temporarily attach the electrical connectors [5] to make sure that they cannot fall into the fuselage.
- Install protective caps on the electrical connectors [5]
- Remove the gasket [4] and discard it.

———— END OF TASK ————

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**NOTE:**

LEFT AOA SENSOR SHOWN, RIGHT AOA SENSOR OPPOSITE.

F98950 S0006576632\_V2

**Angle of Attack (AOA) Sensor Installation  
Figure 401/34-21-05-990-801**

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**TASK 34-21-05-400-801**

**3. Angle of Attack Sensor Installation**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to install the AOA Sensor [1].
- (2) The installation instructions are the same for the two AOA Sensors [1].

**B. References**

Reference	Title
20-10-34-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
22-11-00-740-806	BITE Library Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
27-32-42-400-801	Stall Management Yaw Damper (SMYD) Installation (P/B 401)
30-31-00-730-801	Pitot Probe, AOA Sensor, and TAT Probe Heater - System Test (P/B 501)
34-21-03-400-801	IRS Mode Select Unit Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-614	Bonding Meters - Non-Intrinsically Safe (Used in non-hazardous locations) Part #: 247000 Supplier: 00426 Part #: 620LK Supplier: 1CRL2 Opt Part #: 247001 Supplier: 00426
SPL-1917	Fixture - Test, Angle of Attack Sensor, ROSEMOUNT AOA's Part #: J34002-19 Supplier: 81205 Opt Part #: A34012-19 Supplier: 81205 Opt Part #: A34012-24 Supplier: 81205 Opt Part #: J34002-18 Supplier: 81205

**D. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
D00015	Grease - Aircraft Bearing (Use BMS 3-24 until existing stocks are depleted, BMS 3-33 supersedes BMS 3-24)	BMS3-24 (Superseded by BMS3-33)

**E. Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right

**F. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

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**G. Installation Procedure**

SUBTASK 34-21-05-860-002

- (1) For the left AOA sensor [1], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	6	C01205	SMYD-1 SNSR EXC AC
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C01072	HEATERS ALPHA VANE LEFT

- (2) For the right AOA sensor [1], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01207	SMYD-2 SNSR EXC AC
C	15	C00426	ADIRU RIGHT EXC

SUBTASK 34-21-05-110-001

- (3) To clean the surface around the AOA hole and the surface of the alignment pins, do this task:  
Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-34-110-802.

SUBTASK 34-21-05-390-001

- (4) Apply a thin layer of grease, D00015, to the alignment pins on the AOA Sensor [1].

SUBTASK 34-21-05-420-001

- (5) Do these steps to install the AOA Sensor [1]:

- (a) Put the new gasket [4] into position on the AOA Sensor [1].
- (b) Remove the protective caps from the electrical connectors [5].
- (c) Examine the electrical connectors [5] for loose, bent, or broken pins.
- (d) Connect the electrical connectors [5] to the AOA Sensor [1].
- (e) Carefully put the AOA Sensor [1] into position.
- (f) Install the screws [2] that hold the AOA Sensor [1] to the airplane.
- (g) Tighten the screws [2] to 32-39 inch-pounds (3.6-4.4 newton-meters).
- (h) Make sure the face of the AOA Sensor [1] aligns to within 0.04 inch (1.02 mm) or less of the airplane skin.

NOTE: The surface of the sensor base must be flush with the skin surface within +/- .040 at the forward and aft edges, upper and lower edge flushness not required.

- (i) Use a non-intrinsically safe bonding meter, COM-614 to measure the resistance between the base of the AOA Sensor [1] and the airplane skin.
- (j) Make sure the resistance is less than 0.010 ohm.
- (k) If the resistance is more than 0.010 ohm, do these steps:

- 1) Remove the AOA Sensor [1].



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- 2) Clean the bonding surfaces, including the countersunk holes in the AOA Sensor [1] (SWPM 20-20-00).
- 3) Replace the screws with new screws.
- 4) Re-install the AOA Sensor [1].
- 5) Measure the resistance between the base of the AOA Sensor [1] and the airplane skin with a non-intrinsically safe bonding meter, COM-614.
- 6) If the resistance is more than 0.010 ohms, do these steps:
  - a) Remove the AOA Sensor [1].
  - b) Replace the nutplates and rivets that attach the AOA Sensor [1] (SRM 51-40-02).
  - c) Reinstall the AOA Sensor [1] and make sure the bonding resistance is not more than 0.010 ohm.

- (I) Apply sealant, A00247, around the AOA Sensor [1].

NOTE: It is not necessary to apply the sealant immediately, if the cure time will cause a flight delay. But, you must apply the sealant as soon as possible to keep moisture out of the area between the probe and airplane skin. The sealant deferral must not exceed a maximum of eight weeks.

- (6) For the left AOA sensor [1], remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	6	C01205	SMYD-1 SNSR EXC AC

- (7) For the right AOA sensor [1], remove the safety tag and close this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01207	SMYD-2 SNSR EXC AC

**H. Installation Test (Recommended)**

SUBTASK 34-21-05-860-005

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

SUBTASK 34-21-05-860-006

- (2) Make sure that the IRU is serviceable (TASK 34-21-03-400-801).

SUBTASK 34-21-05-860-007

- (3) Make sure that the FMC is serviceable and has good weight data entered (TASK 22-11-00-740-806).

SUBTASK 34-21-05-860-008

- (4) Make sure that the SMYD is serviceable (TASK 27-32-42-400-801).

SUBTASK 34-21-05-700-001

- (5) Open this access panel:

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



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SUBTASK 34-21-05-860-009

- (6) For the left AOA sensor [1], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C01072	HEATERS ALPHA VANE LEFT

- (7) For the right AOA sensor [1], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00426	ADIRU RIGHT EXC

SUBTASK 34-21-05-480-001

**WARNING:** MAKE SURE THAT THE HEATER CIRCUIT BREAKERS ABOVE ARE OPEN AND THE AOA SENSOR HEAT IS OFF BEFORE YOU INSTALL THE TOOL. IF THE HEATER CIRCUIT BREAKERS ARE CLOSED, INJURY TO PERSONS CAN OCCUR.

- (8) Install the angle of attack probe test fixture, SPL-1917, on the AOA Sensor [1] that you replaced.

SUBTASK 34-21-05-860-010

- (9) Push the ON/OFF switch on the SMYD to operate the BITE display.

**NOTE:** Use SMYD 1 to do this test if you replaced the left AOA sensor. Use SMYD 2 if you replaced the right AOA sensor.

SUBTASK 34-21-05-860-011

- (10) Push NO on the SMYD until you see GROUND TEST?

- (a) Push YES when you see GROUND TEST?

SUBTASK 34-21-05-860-012

- (11) Push NO on the SMYD until you see ANALOG INPUTS?

- (a) Push YES when you see ANALOG INPUTS?

SUBTASK 34-21-05-860-013

- (12) Push NO on the SMYD until you see AOA SENSOR?

- (a) Push YES when you see AOA SENSOR?

- 1) Make sure that the SMYD does not show these:

- a) Open
- b) Short
- c) Out of Range

SUBTASK 34-21-05-700-002

- (13) Do a test of the AOA sensor input to the SMYD:

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- (a) Turn the AOA sensor trailing edge down to  $-20^\circ \pm 1^\circ$ .
  - 1) Make sure that the AOA angle on the SMYD display is  $-20^\circ \pm 1^\circ$  - aerodynamic offset (left AOA sensor) or  $-20^\circ \pm 1^\circ +$  aerodynamic offset (right AOA sensor).  
NOTE: The aerodynamic offset is written on the trailing edge of the AOA sensor.
- (b) Turn the AOA sensor to  $0^\circ \pm 1^\circ$   
NOTE: AOA alignment pins are at  $0^\circ$ .
  - 1) Make sure that the AOA angle on the SMYD display is  $0^\circ \pm 1^\circ$  - aerodynamic offset (left AOA sensor) or  $0^\circ \pm 1^\circ +$  aerodynamic offset (right AOA sensor).
- (c) Turn the AOA sensor trailing edge up to  $20^\circ \pm 1^\circ$ .
  - 1) Make sure that the AOA angle on the SMYD display is  $20^\circ \pm 1^\circ$  - aerodynamic offset (left AOA sensor) or  $20^\circ \pm 1^\circ +$  aerodynamic offset (right AOA sensor).

SUBTASK 34-21-05-700-003

- (14) Push the ON/OFF switch on the SMYD.

SUBTASK 34-21-05-700-004

- (15) Close this access panel:

Number      Name/Location

117A            Electronic Equipment Access Door

SUBTASK 34-21-05-700-005

- (16) Remove the angle of attack probe test fixture, SPL-1917, from the AOA sensor.

SUBTASK 34-21-05-730-001

- (17) Do this task: Pitot Probe, AOA Sensor, and TAT Probe Heater - System Test, TASK 30-31-00-730-801.

**I. Installation Test (Alternative)**

NOTE: Use the alternative test only when the recommended calibrator tool is not available.

SUBTASK 34-21-05-860-014

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

SUBTASK 34-21-05-860-015

- (2) Make sure that the IRU is serviceable (TASK 34-21-03-400-801).

SUBTASK 34-21-05-860-016

- (3) Make sure that the FMC is serviceable and has good weight data entered (TASK 22-11-00-740-806).

SUBTASK 34-21-05-860-017

- (4) Make sure that the SMYD is serviceable (TASK 27-32-42-400-801).

SUBTASK 34-21-05-860-018

- (5) For the left AOA sensor [1], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C01072	HEATERS ALPHA VANE LEFT

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- (6) For the right AOA sensor [1], make sure that these circuit breakers are open:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00426	ADIRU RIGHT EXC

SUBTASK 34-21-05-010-001

- (7) Open this access panel:

Number    Name/Location

117A        Electronic Equipment Access Door

SUBTASK 34-21-05-860-019

- (8) Push the ON/OFF switch on the SMYD to operate the BITE display.

NOTE: Use SMYD 1 to do this test if you replaced the left AOA sensor. Use SMYD 2 if you replaced the right AOA sensor.

SUBTASK 34-21-05-860-020

- (9) Push NO on the SMYD until you see GROUND TEST?

- (a) Push YES when you see GROUND TEST?

SUBTASK 34-21-05-860-021

- (10) Push NO on the SMYD until you see ANALOG INPUTS?

- (a) Push YES when you see ANALOG INPUTS?

SUBTASK 34-21-05-860-022

- (11) Push NO on the SMYD until you see AOA SENSOR?

- (a) Push YES when you see AOA SENSOR?

- 1) Make sure that the SMYD does not show these:

- a) Open
- b) Short
- c) Out of Range

SUBTASK 34-21-05-700-006

**WARNING:** MAKE SURE THAT THE HEATER CIRCUIT BREAKERS ABOVE ARE OPEN AND THE AOA SENSOR HEAT IS OFF BEFORE YOU MOVE THE AOA SENSOR. IF THE HEATER CIRCUIT BREAKERS ARE CLOSED, INJURY TO PERSONS CAN OCCUR.

- (12) Move the applicable AOA sensor vane to  $0^\circ \pm 5^\circ$ , in a line with the AOA sensor alignment pins.

- (a) Make sure that the SMYD shows  $0^\circ \pm 5^\circ$ .

SUBTASK 34-21-05-700-007

- (13) Move the AOA sensor vane, trailing edge up, to the maximum upper stop.

- (a) Make sure that the SMYD shows  $100^\circ \pm 5^\circ$ .

SUBTASK 34-21-05-700-008

- (14) Move the AOA sensor, trailing edge down, to the maximum lower stop.

- (a) Make sure that the SMYD shows  $-100^\circ \pm 5^\circ$ .

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SUBTASK 34-21-05-900-001

- (15) If the sensor angles are not satisfactory, replace the applicable AOA sensor.

SUBTASK 34-21-05-840-001

- (16) Push the ON/OFF switch on the SMYD.

SUBTASK 34-21-05-410-001

- (17) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-21-05-730-002

- (18) Do this task: Pitot Probe, AOA Sensor, and TAT Probe Heater - System Test, TASK 30-31-00-730-801.

**J. Put the Airplane Back to its Usual Condition**

SUBTASK 34-21-05-980-001

- (1) Move the AOA sensor in a line with the AOA sensor alignment pins.

SUBTASK 34-21-05-860-023

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

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	3	C01072	HEATERS ALPHA VANE LEFT
D	3	C01071	HEATERS ALPHA VANE RIGHT

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	15	C00426	ADIRU RIGHT EXC

———— END OF TASK ————



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ANGLE OF ATTACK SENSOR - INSPECTION/CHECK

1. General

- A. This procedure does an inspection of the Angle of Attack (AOA) sensor for damage.

**TASK 34-21-05-200-801**

2. Angle of Attack Sensor - Inspection

(Figure 601)

A. References

<u>Reference</u>	<u>Title</u>
34-21-05 P/B 401	ANGLE OF ATTACK SENSOR - REMOVAL/INSTALLATION

B. Tools/Equipment

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

<u>Reference</u>	<u>Description</u>
COM-13690	Gage - Gram, Approx. 250 - 350 Gram Force Capacity, +/- 0.1%
	Part #: 850-412 (MODEL AFG 2.5) Supplier: 572H5
	Part #: GD-25 Supplier: 27596
	Part #: GD-30 Supplier: 27596

C. Location Zones

<u>Zone</u>	<u>Area</u>
115	Nose Landing Gear Wheel Well - Left
116	Nose Landing Gear Wheel Well - Right

D. Prepare for Inspection

SUBTASK 34-21-05-860-003

- (1) For the left AOA, open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT

- (2) For the right AOA, open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C01072	HEATERS ALPHA VANE LEFT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00426	ADIRU RIGHT EXC

EFFECTIVITY  
AKS ALL

**34-21-05**



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**E. Procedure**

SUBTASK 34-21-05-280-001

**WARNING:** MAKE SURE THAT THE AOA HEAT IS NOT ON. IF YOU DO NOT, INJURY TO PERSONS CAN OCCUR.

- (1) Make sure AOA probe heat is off.

SUBTASK 34-21-05-280-002

- (2) Move the AOA vane from stop to stop.

- (a) Position the vane against one stop, then lightly tap the vane to cause movement to the other stop.

- 1) The vane must move smoothly through a range of approximately 200 degrees with just a light resistance caused by the viscous damper.

NOTE: The vane movement gives the condition of the unit. For a satisfactory unit, the vane moves smoothly and the viscous damper will not let the vane touch the opposite stop. In a damaged unit, the vane moves easily with no resistance and hits the opposite stop, or a mechanical failure locks the mechanism.

SUBTASK 34-21-05-280-003

- (3) Make sure the vane counterweight of the AOA sensor does not stick against the upper vane end stop.
  - (a) Turn the vane in an upward direction and put it against the vane end stop.
  - (b) Hold the vane firmly against the vane end stop by hand for 3 seconds, then release.
  - (c) Put the measurement arm of the gram gauge (gram gage, COM-13690) against the AOA vane at the base of the trailing edge.
  - (d) As slowly as possible, move the vane away from the vane end stop position.
  - (e) Record the results.
    - 1) Make sure that the gram gauge (gram gage, COM-13690) reading is less than 110 grams.
    - a) If the gram gauge (gram gage, COM-13690) reading is more than 110 grams, then replace the AOA sensor. Do this task: ANGLE OF ATTACK SENSOR - REMOVAL/INSTALLATION, PAGEBLOCK 34-21-05/401.

SUBTASK 34-21-05-280-010

- (4) Make sure the vane counterweight of the AOA sensor does not stick against the lower vane end stop.
  - (a) Turn the vane downward and put it against the vane end stop.
  - (b) Hold the vane firmly against the vane end stop by hand for 3 seconds, then release.
  - (c) Put the measurement arm of the gram gauge (gram gage, COM-13690) against the AOA vane at the base of the trailing edge.
  - (d) As slowly as possible, move the vane away from the vane end stop position.
  - (e) Record the results.
    - 1) Make sure that the gram gauge (gram gage, COM-13690) reading is less than 110 grams.
    - a) If the gram gauge (gram gage, COM-13690) reading is more than 110 grams, then replace the AOA sensor. Do this task: ANGLE OF ATTACK SENSOR - REMOVAL/INSTALLATION, PAGEBLOCK 34-21-05/401.

EFFECTIVITY	AKS ALL
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**34-21-05**



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SUBTASK 34-21-05-280-016

- (5) Return the vane to a horizontal position.

**F. Put the Airplane Back to Its Usual Condition.**

SUBTASK 34-21-05-860-004

- (1) For the left AOA, remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	8	C00425	ADIRU LEFT EXC

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	3	C01071	HEATERS ALPHA VANE RIGHT

- (2) For the right AOA, remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	3	C01072	HEATERS ALPHA VANE LEFT

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	15	C00426	ADIRU RIGHT EXC

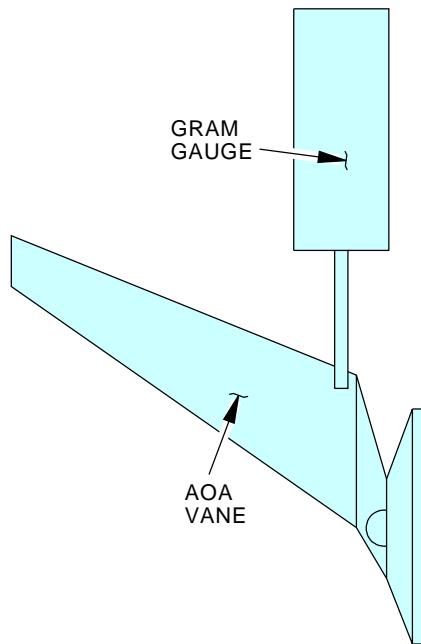
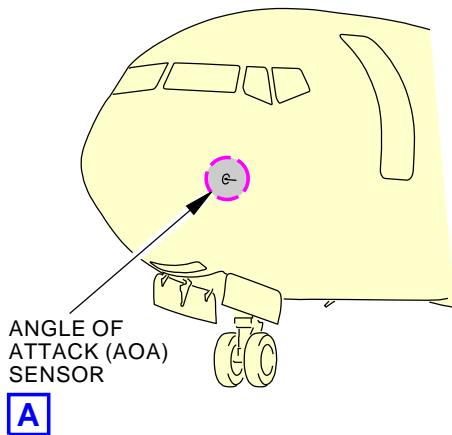
———— END OF TASK ————



**34-21-05**



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ANGLE OF ATTACK (AOA) SENSOR  
(EXAMPLE)

**A**

L48287 S0006576636\_V2

**AOA Sensor - Inspection/Check**  
**Figure 601/34-21-05-990-802**

EFFECTIVITY  
AKS ALL

**34-21-05**

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TOTAL AIR TEMPERATURE PROBE - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the Total Air Temperature (TAT) probe
  - (2) An installation of the TAT probe.

**TASK 34-21-06-000-801**

2. Total Air Temperature Probe - Removal

(Figure 401)

A. General

- (1) This task gives instructions to remove the TAT Probe [4].

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	TAT Probe	34-21-06-08-010	AKS ALL

C. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left

D. Removal Procedure

SUBTASK 34-21-06-860-001

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	2	C00238	HEATERS TEMP PROBE

SUBTASK 34-21-06-020-001

**WARNING:** MAKE SURE THAT THE TAT PROBE HEAT IS OFF. THE PROBE BECOMES HOT IF IT IS ON. INJURIES TO PERSONNEL CAN OCCUR.

- (2) Do these steps to remove the TAT Probe [4]:

- (a) Use the sealant removal tool to remove the sealant from around the TAT Probe [4].
- (b) Remove the screws [3] from the TAT Probe [4].

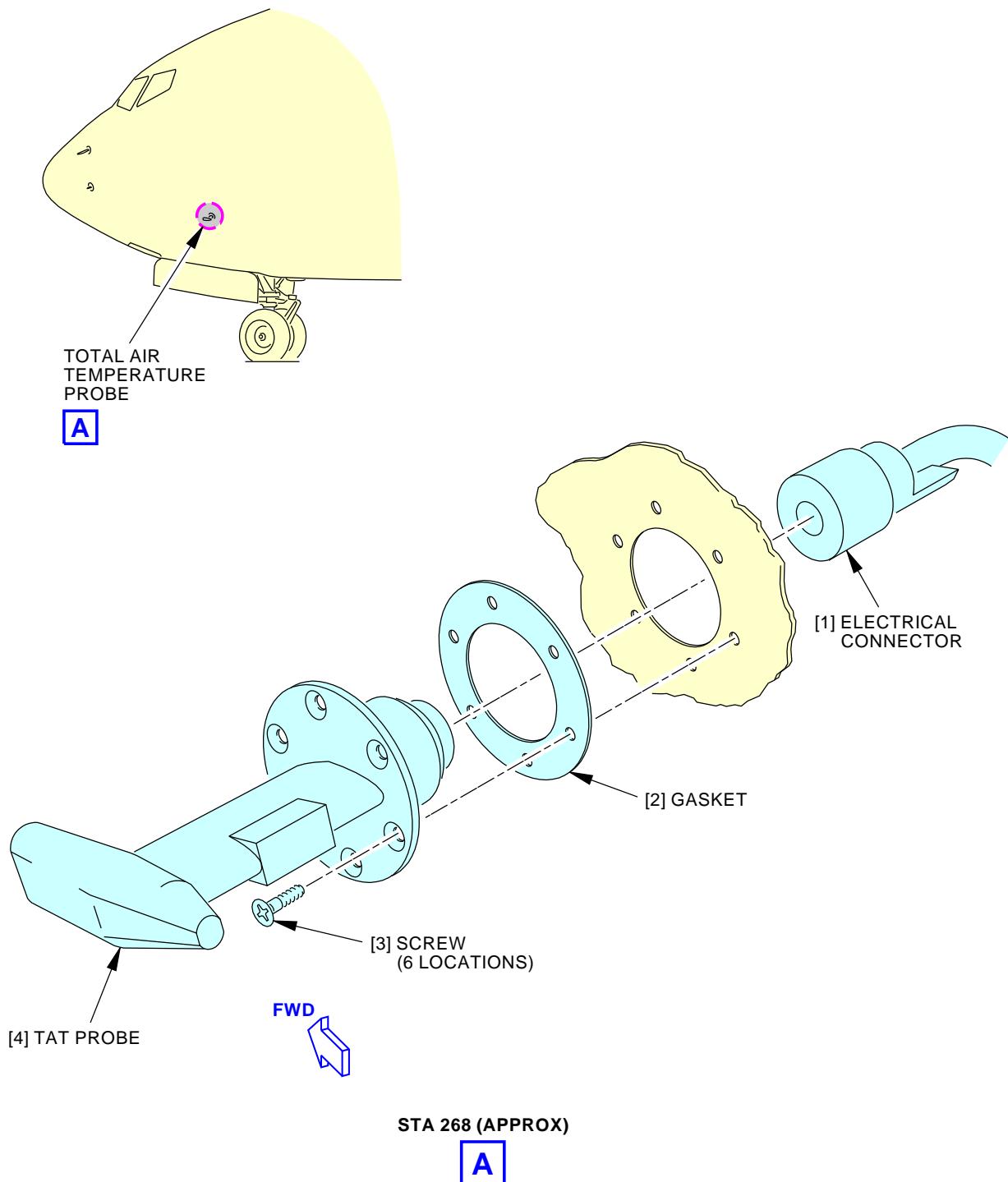
**CAUTION:** DO NOT PULL THE TAT PROBE AWAY FROM THE FUSELAGE WITH TOO MUCH FORCE. TOO MUCH FORCE ON THE TAT PROBE CAN CAUSE DAMAGE TO THE ELECTRICAL CONNECTOR [1] OR THE AIRPLANE SKIN.

- (c) Carefully pull the TAT Probe [4] from the fuselage to get access to the electrical connector [1].
- (d) Disconnect the electrical connector [1] from the TAT Probe [4].
- (e) Temporarily attach the electrical connector [1] to make sure that it does not fall into the fuselage.
- (f) Install a protective cap on the electrical connector [1].
- (g) Remove the gasket [2] and discard it.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-21-06**



G24501 S0006576640\_V2

**Total Air Temperature (TAT) Probe Installation**  
**Figure 401/34-21-06-990-801**EFFECTIVITY  
AKS ALL**34-21-06**

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**TASK 34-21-06-400-801**

**3. Total Air Temperature Probe - Installation**

(Figure 401)

**A. General**

- (1) This task gives instructions to install the TAT Probe [4].

**B. References**

Reference	Title
20-10-34-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
24-22-00-860-811	Supply Electrical Power (P/B 201)
30-31-00-730-801	Pitot Probe, AOA Sensor, and TAT Probe Heater - System Test (P/B 501)
FIM 34-21 TASK 813	TAT Probe Signal Fail - Fault Isolation

**C. Tools/Equipment**

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

Reference	Description
COM-614	Bonding Meters - Non-Intrinsically Safe (Used in non-hazardous locations) Part #: 247000 Supplier: 00426 Part #: 620LK Supplier: 1CRL2 Opt Part #: 247001 Supplier: 00426

**D. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

**E. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Gasket	34-21-06-08-020	AKS ALL
4	TAT Probe	34-21-06-08-010	AKS ALL

**F. Location Zones**

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left

**G. Installation Procedure**

SUBTASK 34-21-06-860-002

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	2	C00238	HEATERS TEMP PROBE

SUBTASK 34-21-06-110-001

- (2) To clean and prepare the surface and the sides of the installation hole, do this task: Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-34-110-802.



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SUBTASK 34-21-06-420-001

- (3) Do these steps to install the TAT Probe [4]:
- Put the new gasket [2] into its position on the TAT Probe [4].
  - Remove the protective cap from the electrical connector [1].
  - Examine the electrical connector [1] for loose, bent, or broken pins.
  - Connect the electrical connector [1] to the TAT Probe [4].
  - Carefully put the TAT Probe [4] into its position.
- NOTE: The large intake should point forward.
- Install the screws [3] that hold the TAT Probe [4] to the airplane.
  - Tighten the screws [3] to 18 in-lb (2.0 N·m)-22 in-lb (2.5 N·m).
  - Use a non-intrinsically safe bonding meter, COM-614 to measure the resistance between the body of the TAT Probe [4] and the airplane skin.
  - Make sure that the resistance is less than 0.010 ohms.
  - If the resistance is more than 0.010 ohms, do these steps:
    - Remove the TAT Probe [4].
    - Clean the bonding surfaces, including the countersunk holes in the TAT Probe [4] (SWPM 20-20-00).
    - Replace the screws [3] with new screws [3].
    - Install the TAT Probe [4].
    - Measure the resistance between the body of the TAT Probe [4] and the airplane skin with a non-intrinsically safe bonding meter, COM-614.
  - If the resistance is more than 0.010 ohms, do these steps:
    - Remove the TAT Probe [4].
    - Replace the nutplates and rivets that attach the TAT Probe [4] (SRM 51-40-02).
    - Install the TAT Probe [4] and make sure that the bonding resistance is not more than 0.010 ohm.
- (k) Apply sealant, A00247, around the TAT Probe [4].

NOTE: It is not necessary to apply the sealant immediately, if the cure time will cause a flight delay. But, you must apply the sealant as soon as possible to keep moisture out of the area between the probe and airplane skin. The sealant deferral must not exceed a maximum of eight weeks.

SUBTASK 34-21-06-860-003

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	2	C00238	HEATERS TEMP PROBE

**H. Post Installation Test**

SUBTASK 34-21-06-730-001

- (1) Do this task: Pitot Probe, AOA Sensor, and TAT Probe Heater - System Test, TASK 30-31-00-730-801.



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SUBTASK 34-21-06-860-004

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

SUBTASK 34-21-06-860-005

- (3) Do these steps to get access the ADIRS maintenance index on the CDU:

NOTE: CDU data lines that permit a selection are identified with a caret (< or >). The CDU has 12 line-select-keys. Six keys are on each side of the display. 1L thru 6L are on the left side, and 1R thru 6R are on the right side.

- (a) Push the INIT REF key.
  - 1) Make sure that the CDU shows the INIT REF INDEX 1/1 page.
- (b) Push the LSK 6R adjacent to the MAINT> prompt on the CDU.
  - 1) Make sure the CDU shows the MAINT BITE INDEX 1/1 page.
- (c) Push the LSK 4L adjacent to the <ADIRS prompt on the CDU.
  - 1) Make sure the CDU shows the ADIRS BITE 1/1 page.

SUBTASK 34-21-06-710-002

- (4) Do these steps to get access the left ADIRS current faults:

- (a) Set the IRS MSU left mode select switch to NAV position.
- (b) Push the LSK 1L adjacent to the <ADIRS L prompt on the CDU.
  - 1) Make sure the CDU shows the ADIRS L BITE MAIN MENU page.
- (c) Push the LSK 1L adjacent to the <CURRENT STATUS prompt on the CDU.
  - 1) Make sure the CDU shows the ADIRS L BITE CURRENT FAULTS page.
  - 2) Make sure the CDU does not show the TAT PROBE SIGNAL FAIL message.

NOTE: If there is a maintenance message that shows on the CDU, you can go to the ADIRS fault isolation procedures to fix the fault FIM 34-21 TASK 813.

SUBTASK 34-21-06-710-003

- (5) Do these steps to access the right ADIRS current faults.

- (a) Set the IRS MSU right mode select switch to NAV position.
- (b) Push the LSK 2L adjacent to the <ADIRS R prompt on the CDU from the ADIRS BITE 1/1 page.
  - 1) Make sure the CDU shows the ADIRS R BITE MAIN MENU page.
- (c) Push the LSK 1L adjacent to the <CURRENT STATUS prompt on the CDU.
  - 1) Make sure the CDU shows the ADIRS R BITE CURRENT FAULTS page.
  - 2) Make sure the CDU does not show the TAT PROBE SIGNAL FAIL message.

NOTE: If there is a maintenance message that shows on the CDU, you can go to the ADIRS fault isolation procedure to fix the fault FIM 34-21 TASK 813.

———— END OF TASK ———



**34-21-06**



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TOTAL AIR TEMPERATURE PROBE - INSPECTION/CHECK

1. General

- A. This procedure does an inspection of the Total Air Temperature (TAT) probe for damage.

**TASK 34-21-06-000-802**

2. Total Air Temperature Probe - Inspection

(Figure 601)

A. References

Reference	Title
34-21-06-000-801	Total Air Temperature Probe - Removal (P/B 401)
34-21-06-400-801	Total Air Temperature Probe - Installation (P/B 401)

B. Location Zones

Zone	Area
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left

C. Prepare for Inspection.

SUBTASK 34-21-06-860-006

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

**CAPT Electrical System Panel, P18-3**

Row	Col	Number	Name
C	2	C00238	HEATERS TEMP PROBE

D. Procedure

SUBTASK 34-21-06-200-001

**WARNING:** MAKE SURE THAT THE TAT PROBE HEAT IS OFF. THE PROBE BECOMES HOT IF IT IS ON. INJURIES TO PERSONNEL CAN OCCUR.

- (1) Visually inspect the sensor for physical damage such as cracking or separation of parts on the air scoop and strut.
- (a) If there is any cracking or separation visible, then replace the TAT probe.  
These are the tasks:  
Total Air Temperature Probe - Removal, TASK 34-21-06-000-801  
Total Air Temperature Probe - Installation, TASK 34-21-06-400-801

**AKS ALL; AIRPLANES WITH NON-ASPIRATED TAT PROBE**

- (2) Check for wear and indentations greater than 0.08 in. (2.03 mm) deep, measured from the leading edge of the strut. When measuring from the trailing edge of the strut, any measurement less than 1.57 in. (39.88 mm) is unacceptable.
- (a) If there is any cracking or separation visible, then replace the TAT probe.  
These are the tasks:  
Total Air Temperature Probe - Removal, TASK 34-21-06-000-801  
Total Air Temperature Probe - Installation, TASK 34-21-06-400-801
- (3) Check for wear and indentations greater than 0.04 in. (1.02 mm) deep, measured from the front of scoop. When measuring from back of scoop, any measurement less than 3.46 in. (87.88 mm) is unacceptable.

EFFECTIVITY
AKS ALL

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**AKS ALL; AIRPLANES WITH NON-ASPIRATED TAT PROBE (Continued)**

- (a) If there is any cracking or separation visible, then replace the TAT probe.

These are the tasks:

Total Air Temperature Probe - Removal, TASK 34-21-06-000-801

Total Air Temperature Probe - Installation, TASK 34-21-06-400-801

- (4) Visually check the interior of the air scoop to see if the airbump has worn away. The sensor is serviceable regardless of condition of airbump as long as it is present.

- (a) If the airbump has worn away, then replace the TAT probe.

These are the tasks:

Total Air Temperature Probe - Removal, TASK 34-21-06-000-801

Total Air Temperature Probe - Installation, TASK 34-21-06-400-801

**AKS ALL**

**E. Put the Airplane Back to its Usual Condition.**

SUBTASK 34-21-06-860-007

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	2	C00238	HEATERS TEMP PROBE

———— END OF TASK ————

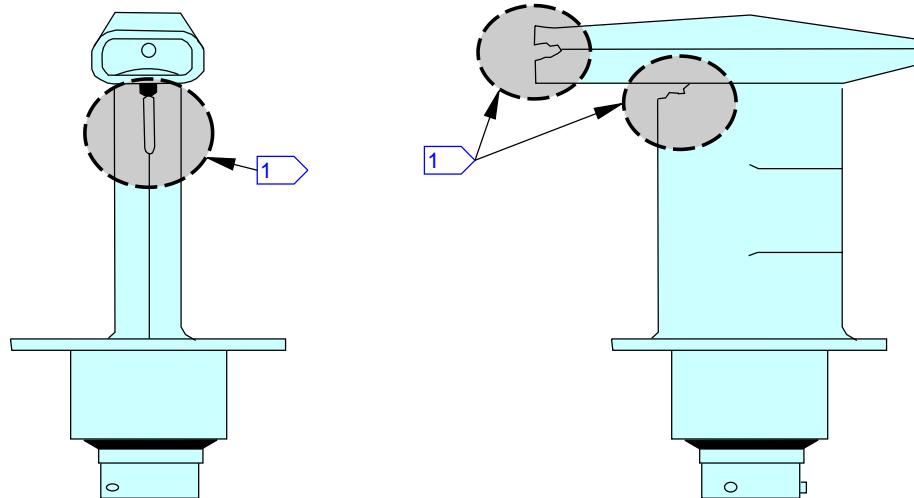
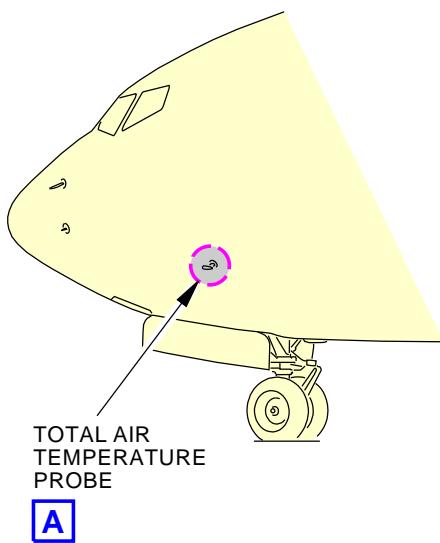


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TOTAL AIR TEMPERATURE PROBE

A

1 REJECT: CRACKING AND/OR SEPARATION VISIBLE

2067983 S0000430002\_V2

**TAT Probe - Inspection/Check**  
Figure 601/34-21-06-990-806 (Sheet 1 of 3)

EFFECTIVITY  
AKS ALL; AIRPLANES WITH NON-ASPIRATED TAT  
PROBE

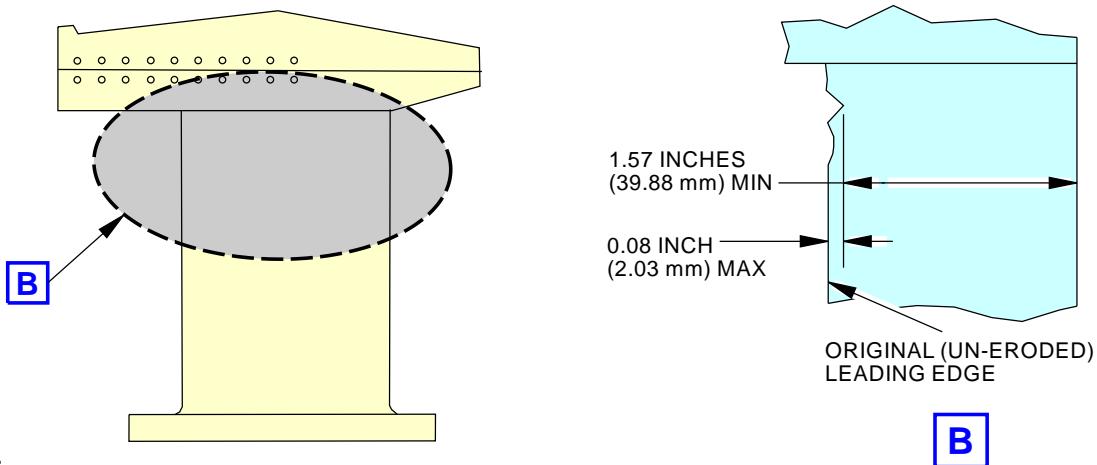
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**34-21-06**

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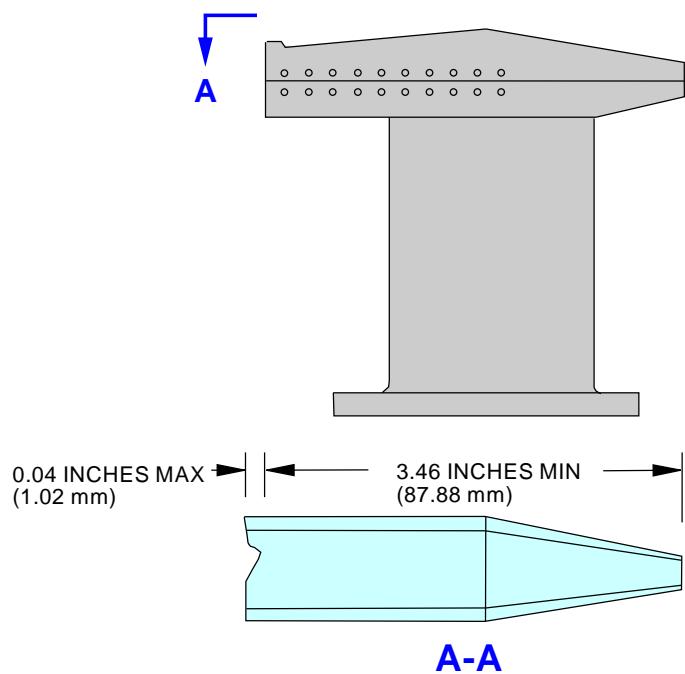


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**NOTE:**

DIMENSIONS ARE STRAIGHT LINE (NOT ALONG CURVED SURFACES).  
REJECT: WEAR/INDENTATION EXCEEDING 0.08 INCH (2.03 mm) DEEP FROM FRONT OR MEASURING LESS THAN 1.57 INCHES (39.88 mm) FROM BACK.



**NOTE:**

DIMENSIONS ARE STRAIGHT LINE (NOT ALONG CURVED SURFACES).  
REJECT: WEAR/INDENTATION EXCEEDING 0.04 INCH (1.02 mm) DEEP FROM FRONT OR MEASURING LESS THAN 3.46 INCHES (87.88 mm) FROM BACK.

2068464 S0000430004\_V2

**TAT Probe - Inspection/Check**  
**Figure 601/34-21-06-990-806 (Sheet 2 of 3)**

EFFECTIVITY  
AKS ALL; AIRPLANES WITH NON-ASPIRATED TAT  
PROBE

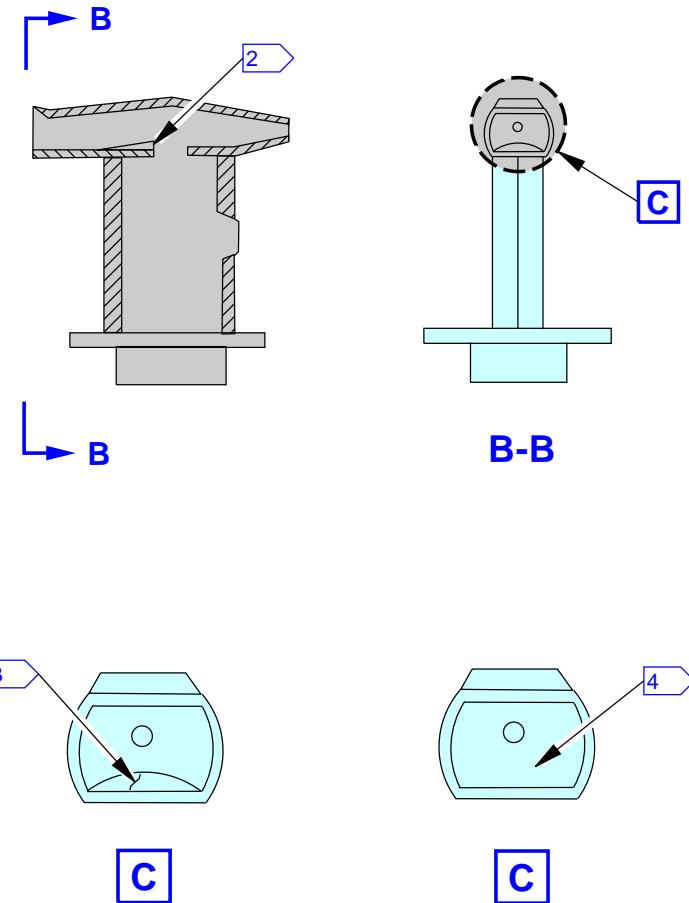
**34-21-06**

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- 2 AIRBUMP FEATURE
- 3 ACCEPTABLE AIRBUMP PRESENT REGARDLESS OF CONDITION
- 4 REJECT: AIRBUMP MISSING

2068493 S0000430016\_V2

TAT Probe - Inspection/Check  
Figure 601/34-21-06-990-806 (Sheet 3 of 3)

EFFECTIVITY  
AKS ALL; AIRPLANES WITH NON-ASPIRATED TAT  
PROBE

**34-21-06**



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AIRCRAFT MAINTENANCE MANUAL

IRS MASTER CAUTION UNIT - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the IRS master caution unit (MCU)
  - (2) An installation of the IRS MCU.
- B. The IRS MCU is installed in the P61 panel in the flight compartment.

**TASK 34-21-07-000-801**

**2. IRS Master Caution Unit Removal**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to remove the IRS MCU.

**B. References**

Reference	Title
20-40-12-000-801	ESDS Handling for Printed Circuit Board Removal (P/B 201)
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

**C. Location Zones**

Zone	Area
212	Flight Compartment - Right

**D. Removal Procedure**

SUBTASK 34-21-07-860-001

- (1) Set the two mode select switches on the IRS mode select unit (MSU) to the OFF position.

SUBTASK 34-21-07-860-002

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT

SUBTASK 34-21-07-020-001

- (3) Do these steps to remove the IRS MCU MODULE assembly [1]:

- (a) Release the quarter-turn fasteners [2] on the front of the IRS MCU MODULE assembly [1].

**CAUTION:** DO NOT TOUCH THE IRS MCU MODULE ASSY BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE IRS MCU .

- (b) Before you touch the IRS MCU MODULE assembly [1], do this task: ESDS Handling for Printed Circuit Board Removal, TASK 20-40-12-000-801.



**34-21-07**



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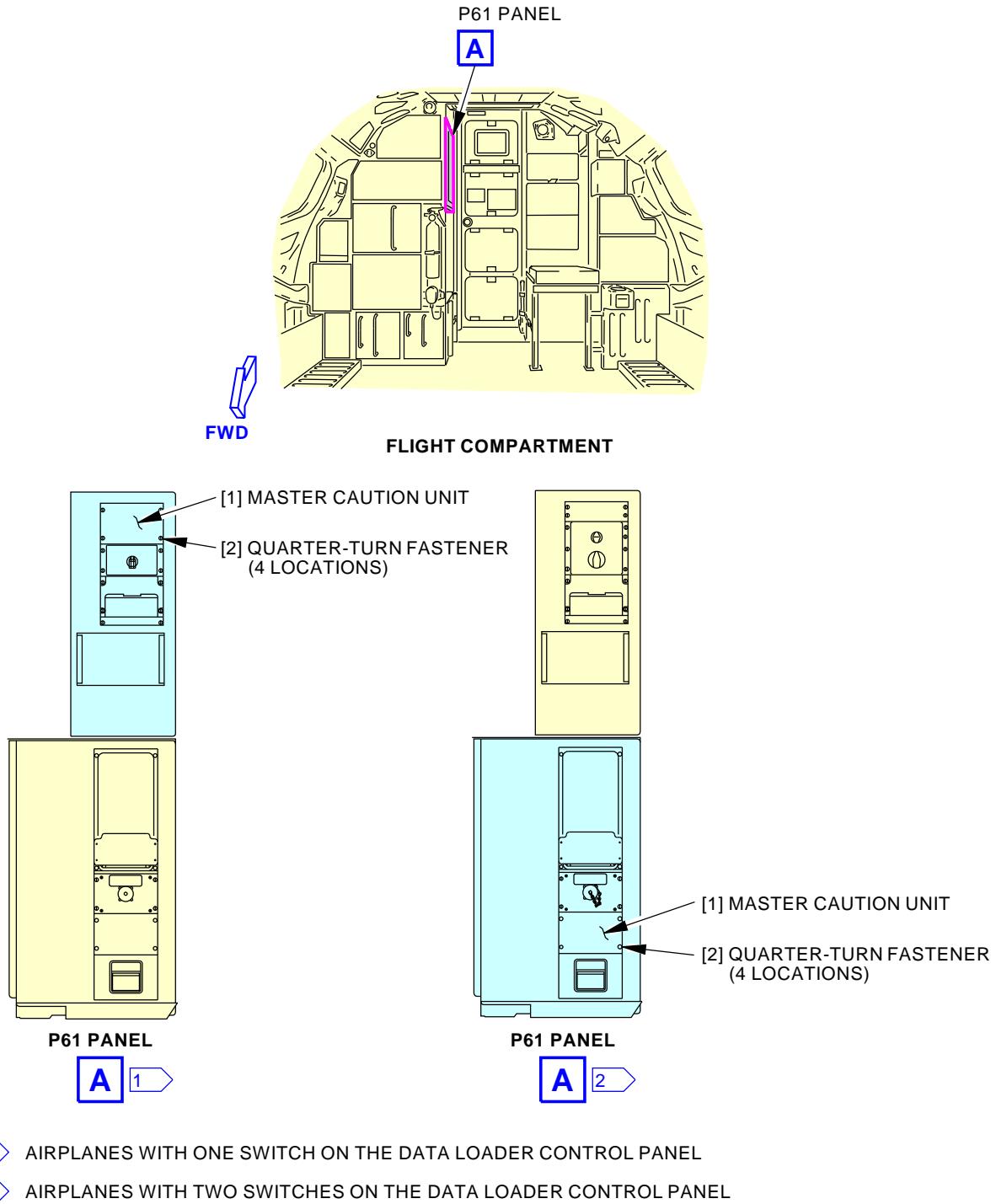
**CAUTION:** CAREFULLY REMOVE THE IRS MCU MODULE ASSY FROM THE PANEL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE ELECTRICAL CONNECTORS AT THE REAR OF THE IRS MCU .

- (c) Carefully pull the IRS MCU MODULE assembly [1] away from the panel until you can get access to the electrical connectors.
- (d) Disconnect the electrical connectors from the rear of the IRS MCU MODULE assembly [1].
- (e) Install dust caps on the electrical connectors. To install them, do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-21-07**



K76628 S0006576647\_V2

**Master Caution Unit Installation**  
**Figure 401/34-21-07-990-801**

EFFECTIVITY

---

 AKS ALL

D633A101-AKS

**34-21-07**



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AIRCRAFT MAINTENANCE MANUAL

**TASK 34-21-07-400-801**

**3. IRS Master Caution Unit Installation**

(Figure 401)

**A. General**

- (1) This procedure gives instructions to install the IRS MCU MODULE assembly [1].
- (2) The installation test makes sure the IRS MCU MODULE assembly [1] is installed correctly.

**B. References**

Reference	Title
20-40-12-000-804	Conductive Dust Cap and Conductor Cover Removal (P/B 201)
20-40-12-400-801	ESDS Handling for Printed Circuit Board Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-710-801	Air Data Inertial Reference System - Operational Test (P/B 501)

**C. Location Zones**

Zone	Area
212	Flight Compartment - Right

**D. Installation Procedure**

SUBTASK 34-21-07-860-003

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT

SUBTASK 34-21-07-420-001

- (2) Do these steps to install the IRS MCU MODULE assembly [1]:

**CAUTION:** DO NOT TOUCH THE IRS MCU MODULE ASSY BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE IRS MCU .

- (a) Before you touch the IRS MCU MODULE assembly [1], do this task: ESDS Handling for Printed Circuit Board Installation, TASK 20-40-12-400-801.
- (b) Remove the dust caps on the electrical connectors. To remove them, do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.
- (c) Connect the electrical connectors to the IRS MCU MODULE assembly [1].

**CAUTION:** CAREFULLY INSTALL THE IRS MCU MODULE ASSY INTO THE PANEL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE ELECTRICAL CONNECTORS AT THE REAR OF THE IRS MCU .

- (d) Carefully install the IRS MCU MODULE assembly [1] into the P61 panel.
- (e) Lock the quarter-turn fasteners [2] on the front of the IRS MCU MODULE assembly [1].



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SUBTASK 34-21-07-860-004

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
D	11	C00133	INDICATOR MASTER DIM DIM/TST CONT

**E. Installation Test**

SUBTASK 34-21-07-860-005

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

SUBTASK 34-21-07-860-006

- (2) Do this task: Air Data Inertial Reference System - Operational Test, TASK 34-21-00-710-801.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-21-07-860-007

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

———— END OF TASK ————



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STANDBY MAGNETIC COMPASS - MAINTENANCE PRACTICES

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) Standby Magnetic Compass Deactivation.
  - (2) Standby Magnetic Compass Activation.
  - (3) Each task is a different procedure that you can use to do a compass swing of the standby magnetic compass. One procedure is to use a standby compass calibrator (Calibrator Procedure). The other procedure is to tow the airplane around a compass rose (Tow Around Procedure). Use only one of these procedures to do a swing of the standby compass.

NOTE: Air bubbles can occur in the standby magnetic compass because of temperature change and/or decrease of liquid. Maintenance limits made for liquid quantity make sure of satisfactory compass operation. When air bubble is larger than 3/8 inch (9.5 mm) wide and 1/8 inch (3.2 mm) high, with the glass approximately vertical position, replace the standby compass.

- (a) Each task has two parts. The first part is to do a swing of the standby compass through four compass points (north, east, south, west). Use this procedure for compass calibration. The second part is to do a swing the standby compass through 12 compass points that are approximately 30 degrees apart. Use this procedure to measure the remaining errors and to make sure the standby compass heading is accurate. Use this data to make the compass correction card. This card must stay with the standby compass.
- C. It is not necessary to keep a constant radius or tangency during airplane tow around the compass rose or swing area. Tow direction is optional. These make no difference when you calculate the solutions.
- D. Do not park vehicles less than 220 feet (67.1 meters) from the airplane during the compass swing.
- E. You can use the auxiliary power unit (APU) during the compass swing.

**TASK 34-23-00-040-801**

**2. Standby Magnetic Compass - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power from the Standby Magnetic Compass.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-23-00-860-023

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

EFFECTIVITY	AKS ALL
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D. Standby Magnetic Compass -Tryout

NOTE: This tryout is to make sure the Standby Magnetic Compass is in a zero energy state.

SUBTASK 34-23-00-860-024

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

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

SUBTASK 34-23-00-700-001

- (2) Turn the light switch for the standby compass to the BRIGHT position and make sure the internal light is not illuminated.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-23-00**

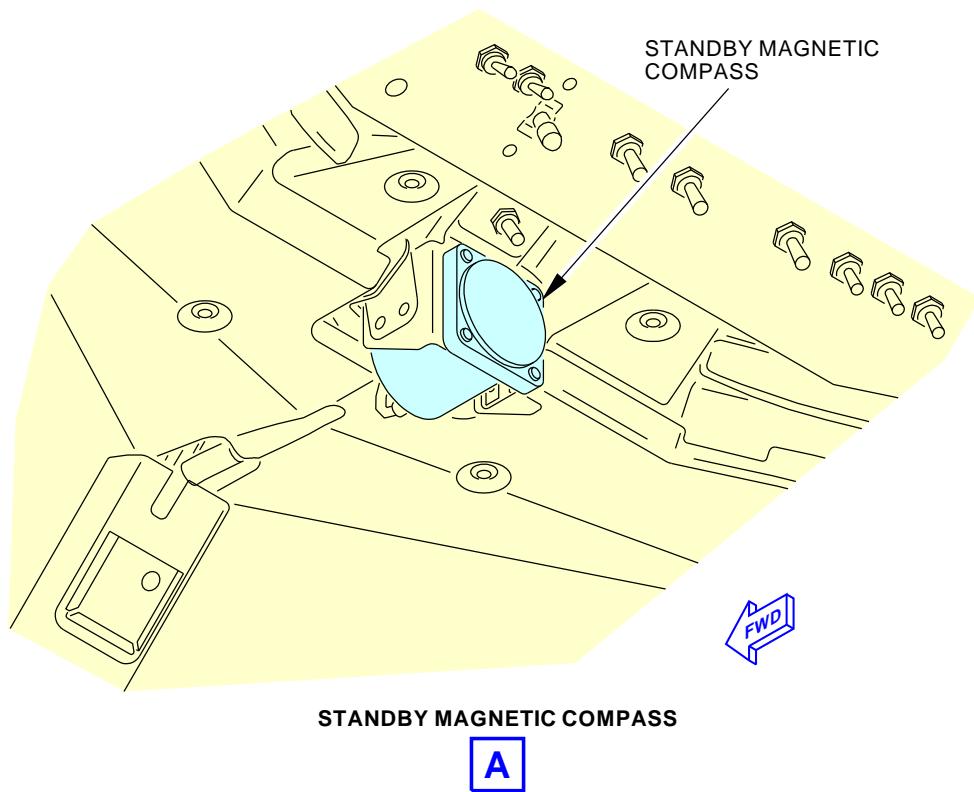
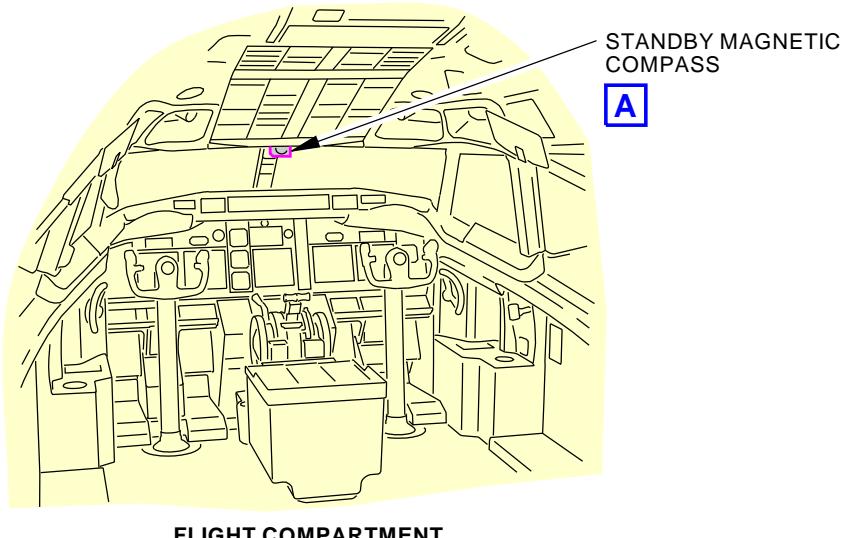
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Standby Magnetic Compass  
Figure 201/34-23-00-990-802

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**TASK 34-23-00-440-801**

**3. Standby Magnetic Compass - Activation**

(Figure 201)

**A. General**

- (1) This procedure adds electrical power to the Standby Magnetic Compass.

**B. Location Zones**

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



**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
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A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS
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— END OF TASK —

**TASK 34-23-00-820-801**

**4. Standby Magnetic Compass Calibrator Procedure**

(Figure 202)

**A. General**

- (1) Use tools that are not magnetic to adjust the standby magnetic compass.

**B. References**

Reference	Title
09-11-00-580-801	Maintenance Towing (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**C. Tools/Equipment**

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

Reference	Description
COM-1925	Kit - Calibration, Standby Compass Part #: 2591553-901 Supplier: 3BMV1 Part #: 2591553-903 Supplier: 3BMV1
STD-1167	Tripod - Non-magnetic

**D. Location Zones**

Zone	Area
------	------

211	Flight Compartment - Left
212	Flight Compartment - Right

EFFECTIVITY  
AKS ALL

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**E. Calibrator Adjustment**

SUBTASK 34-23-00-820-001

- (1) Do this procedure to calibrate the standby compass calibrator (SCC) (standby compass calibration kit, COM-1925) to the magnetic field at the location of the compass swing area:

NOTE: The horizontal component of the earth's magnetic field must be constant ( $\pm 1$  degree) in the test area. Measure the horizontal component if magnetic material (such as a new building) is less than 600 feet (182.9 meters) from the compass rose. Do not use the compass rose if the horizontal component is not constant ( $\pm 1$  degree).

- (a) Make sure there are no vehicles or airplanes less than 220 feet (67.1 meters) away.
- (b) Make sure there are no buildings less than 220 feet (67.1 meters) away.
- (c) Put a tripod, STD-1167 at the center of the compass swing area.
- (d) Remove the magnet assembly from the SCC.
- (e) Remove the knob assembly from the SCC.
- (f) Attach a master magnetic compass to the SCC with two mounting screws.

NOTE: You can use an accurate standby magnetic compass for a master magnetic compass. Make sure that the N-S and E-W adjustment screws are at neutral.

- (g) Put the SCC/master compass assembly on the tripod, STD-1167.

NOTE: Make sure the assembly is level.

- (h) Turn the assembly until the master magnetic compass shows an indication of magnetic north (N).
- (i) Re-install the magnet assembly to the SCC.
- (j) Re-install the knob assembly to the SCC.
- (k) Turn the top and bottom SCC dials to show an indication of E at the index line.
- (l) Make a record of the heading shown on the master magnetic compass.
- (m) Turn the top and bottom SCC dials to show an indication of W at the index line.
- (n) Make a record of the heading shown on the master magnetic compass.
- (o) Turn the magnetic field cancellation adjustment screw on the SCC to decrease the heading errors in each direction (E and W) to a minimum.
- (p) Continue to adjust the SCC dials for each direction (E and W). Then use the magnetic field cancellation adjustment (MFCA) screw until the errors are at a minimum.

NOTE: Continue to do this procedure until the error in each direction is at a minimum. When the errors are at a minimum, do not move the MFCA screw until the compass swing is completed.

**F. Four Point Calibration Swing Procedure**

SUBTASK 34-23-00-580-001

- (1) To tow the airplane to the compass swing area, do this task: Maintenance Towing, TASK 09-11-00-580-801.

NOTE: The compass swing area must be a level area with a smooth surface. It must be sufficiently strong to hold the weight of the airplane. The area must be large enough to tow or taxi the airplane. Make sure no vehicles other than the tow vehicle are less than 220 feet (67.1 meters) from the airplane.

SUBTASK 34-23-00-860-001

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

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SUBTASK 34-23-00-860-002

- (3) Energize all of the electronic equipment, radios, and flight compartment lights for the usual conditions that occur in flight.

SUBTASK 34-23-00-820-002

- (4) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-23-00-860-003

- (5) Set the ND mode selector on the left EFIS control panel on the glareshield to the VOR/ILS position.

SUBTASK 34-23-00-860-004

- (6) Set the heading reference switch below the captain's ND to the NORM position.

SUBTASK 34-23-00-750-001

- (7) Make sure that the captain's ND shows a magnetic heading.

NOTE: The default heading displayed is Magnetic Heading.

SUBTASK 34-23-00-860-005

**CAUTION:** USE TOOLS THAT ARE NOT MAGNETIC. MAGNETIC TOOLS CAN CAUSE COMPASS ADJUSTMENT ERRORS.

- (8) Make sure the N-S and E-W adjustment screws on the standby compass are at neutral.

SUBTASK 34-23-00-580-002

- (9) Turn the airplane to a direction where the captain's ND shows a magnetic heading of 0 degrees.

SUBTASK 34-23-00-860-007

- (10) Lower the mounting bracket for the standby magnetic compass to give sufficient space for the SCC:

(a) Loosen the screws on the mounting bracket to let it tilt down.

(b) Move the mounting bracket to you and approximately 15° down.

(c) Tighten the screws on the mounting bracket.

SUBTASK 34-23-00-020-001

- (11) Remove the lower left and upper right mounting screws on the standby magnetic compass.

SUBTASK 34-23-00-480-001

- (12) Use the two mounting screws to install the SCC on the face of the standby magnetic compass.

SUBTASK 34-23-00-820-003

- (13) Turn the top and bottom SCC dials to show an indication of E at the index line.

SUBTASK 34-23-00-970-001

- (14) Make a record of the heading shown on the standby magnetic compass.

SUBTASK 34-23-00-820-004

- (15) Turn the top and bottom SCC dials to show an indication of W at the index line.

SUBTASK 34-23-00-970-002

- (16) Make a record of the heading shown on the standby magnetic compass.

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SUBTASK 34-23-00-820-005

- (17) Turn the E-W adjustment screw on the standby magnetic compass until the error in the last two recorded values is at a minimum.

NOTE: Divide the error in each of the two directions as equally as possible.

SUBTASK 34-23-00-820-006

- (18) Turn the top and bottom SCC dials to show an indication of N at the index line.

SUBTASK 34-23-00-970-003

- (19) Make a record of the heading shown on the standby magnetic compass.

SUBTASK 34-23-00-820-007

- (20) Turn the top and bottom SCC dials to show an indication of S at the index line.

SUBTASK 34-23-00-970-004

- (21) Make a record of the heading shown on the standby magnetic compass.

SUBTASK 34-23-00-820-008

- (22) Turn the N-S adjustment screw on the standby magnetic compass until the error in the last two recorded values is at a minimum.

NOTE: Divide the error in each of the two directions as equally as possible.

SUBTASK 34-23-00-820-009

- (23) Continue to adjust the SCC dials for each pair of directions (E-W, N-S). Then, turn the E-W and N-S adjustment screws until the errors are at a minimum.

NOTE: Continue to do this procedure until the error in each pair of directions is at a minimum.

Start with E-W and turn the E-W adjustment screw. Then, do N-S and turn the N-S adjustment screw.

SUBTASK 34-23-00-820-010

- (24) When the errors are at a minimum, do the steps that follow for the 12-point accuracy swing.

### G. Twelve Point Accuracy Swing Procedure

SUBTASK 34-23-00-580-003

- (1) Move the airplane to a location near the center of the compass swing area.

NOTE: For each of the magnetic headings that follow, the remaining deviation for the standby magnetic compass must not be more than  $\pm 5$  degrees.

SUBTASK 34-23-00-820-011

- (2) Adjust the SCC dials to indicate these magnetic headings: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, and 330 degrees.

SUBTASK 34-23-00-970-005

- (3) Make a record of the magnetic heading, MH, and the standby compass heading, CH, for each 30 degree increment.

SUBTASK 34-23-00-970-006

- (4) Make a record of the standby compass heading, CH, in the steer column of the compass correction card for each 30 degree heading increment.

### H. Put the Airplane Back to Its Usual Condition

SUBTASK 34-23-00-080-001

- (1) Remove the SCC from the face of the standby magnetic compass:

(a) Remove the mounting screws that hold the SCC to the face of the standby magnetic compass.

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- (b) Remove the SCC.
- (c) Install and tighten the mounting screws on the standby magnetic compass.

SUBTASK 34-23-00-860-018

- (2) Put the mounting bracket back to its usual position:
  - (a) Loosen the screws on the mounting bracket.
  - (b) Push the mounting bracket up and into the mounting slots.
  - (c) Tighten the screws on the mounting bracket.

SUBTASK 34-23-00-860-006

- (3) Set the mode select switches on the inertial reference system (IRS) mode select unit (MSU) to the OFF position.

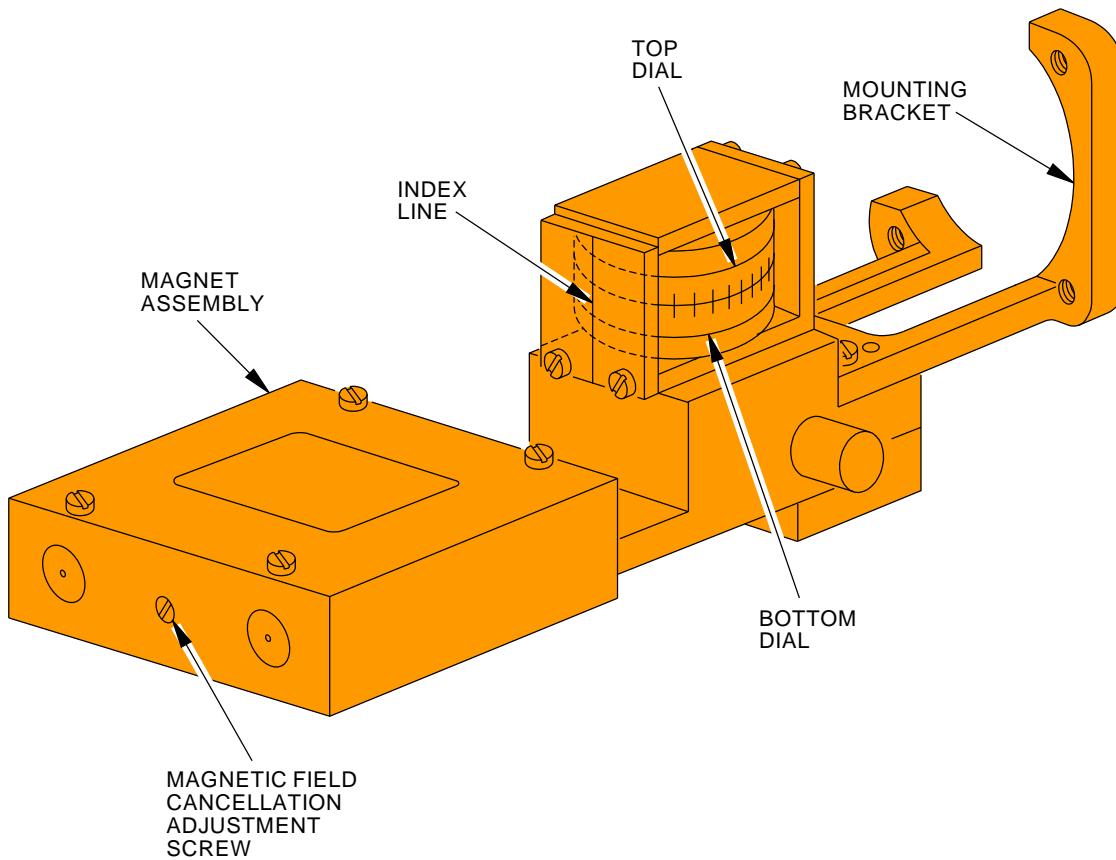
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Standby Compass Calibrator  
Figure 202/34-23-00-990-801

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TASK 34-23-00-820-802

5. Standby Magnetic Compass Taxi/Tow Around Procedure

A. General

- (1) Use tools that are not magnetic to adjust the standby magnetic compass.

B. References

Reference	Title
09-11	TOWING
09-20	TAXI THE AIRPLANE
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-62-61-400-806	Ground Spoiler Interlock Valve Proximity Sensor Functional Test (P/B 501)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

C. Tools/Equipment

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

Reference	Description
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-106 Supplier: 81205 Opt Part #: A27092-84 Supplier: 81205

D. Location Zones

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

E. Four Point Calibration Swing Procedure

SUBTASK 34-23-00-580-004

- | (1) Position the airplane in the compass swing area:  
| (a) To taxi that airplane do this task, TAXI THE AIRPLANE, SECTION 09-20  
| (b) To tow the airplane do this task, TOWING, SECTION 09-11

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- (c) If a compass rose or an approved swing site is not available, an alternate swing method is to position the airplane on a ramp line with a known magnetic heading, then continue with the standby compass adjustment/test.

**NOTE:** The compass swing area must be a level area with a smooth surface. It must be sufficiently strong to hold the weight of the airplane. The area must be large enough to tow or taxi the airplane. Make sure no vehicles other than the tow vehicle are less than 220 feet (67.1 meters) from the airplane. The horizontal component of the earth's magnetic field must be constant ( $\pm 1$  degree) for a certified compass rose. Measure the direction of the horizontal component if magnetic material (such as a new building) is less than 600 feet (182.9 meters) from the compass rose.

- (d) If you are using the alternate swing method, make sure the display on the ND is within 2 degrees of the ramp line used to align the airplane, before you begin the compass swing procedure.

**NOTE:** When accomplishing the alternate swing procedure, the airplane Navigation Display (ND) is used to align the airplane to the headings required to accomplish the swing.

SUBTASK 34-23-00-860-008

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

SUBTASK 34-23-00-860-009

- (3) Energize all of the electronic equipment, radios, and flight compartment lights for the usual conditions that occur in flight.

SUBTASK 34-23-00-820-015

- (4) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-23-00-840-001

**WARNING:** PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU INSTALL THE DEACTUATORS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 34-23-00-860-019

- (6) Attach an actuator on the Ground Spoiler Interlock Valve Close Sensor (S1050).

**NOTE:** The actuator is part of this test set: proximity sensor test set, SPL-1690. For information on the Ground Spoiler Interlock Valve Close Sensor, refer to this task: (TASK 27-62-61-400-806).

SUBTASK 34-23-00-860-015

- (7) Attach deactuators to the face of the air/ground sensors for the nose and main landing gear. To attach the deactuators, do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

**NOTE:** The installation of the deactuators will energize the landing gear latch solenoid. Because the landing gear latch solenoid is close to the standby magnetic compass, the solenoid must be energized to create a normal level of magnetic and electrical interference during calibration of the compass.

- (a) Let the landing gear latch solenoid stay energized for 20 minutes before you continue.

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SUBTASK 34-23-00-860-010

- (8) Set the ND mode selector on the left EFIS control panel on the glareshield to the VOR/ILS position.

SUBTASK 34-23-00-860-011

- (9) Set the heading reference switch below the captain's ND to the NORM position.

SUBTASK 34-23-00-750-002

- (10) Make sure that the captain's ND shows a magnetic heading.

SUBTASK 34-23-00-860-012

**CAUTION:** USE TOOLS THAT ARE NOT MAGNETIC. MAGNETIC TOOLS CAN CAUSE  
COMPASS ADJUSTMENT ERRORS.

- (11) Make sure that the N-S and E-W adjustment screws on the standby compass are at neutral.

SUBTASK 34-23-00-580-005

- (12) Turn the airplane to a direction where the captain's ND shows a heading ( $\pm 2$  degrees) of magnetic north, (MH)n.

SUBTASK 34-23-00-970-007

- (13) Make a record of the magnetic heading, (MH)n, and the standby compass heading, (CH)n.

SUBTASK 34-23-00-970-008

- (14) Calculate and make a record of the north heading deviation, Dn, as follows:  $D_n = (MH)_n - (CH)_n$

SUBTASK 34-23-00-580-006

- (15) Turn the airplane to a direction where the captain's ND shows a heading ( $\pm 2$  degrees) of magnetic east, (MH)e.

SUBTASK 34-23-00-970-009

- (16) Make a record of the magnetic heading, (MH)e, and the standby compass heading, (CH)e.

SUBTASK 34-23-00-970-010

- (17) Calculate and make a record of the east heading deviation, De, as follows:  $D_e = (MH)_e - (CH)_e$

SUBTASK 34-23-00-580-007

- (18) Turn the airplane to a direction where the captain's ND shows a heading ( $\pm 2$  degrees) of magnetic south, (MH)s.

SUBTASK 34-23-00-970-011

- (19) Make a record of the magnetic heading, (MH)s, and the standby compass heading, (CH)s.

SUBTASK 34-23-00-970-012

- (20) Calculate and make a record of the south heading deviation, Ds, as follows:  $D_s = (MH)_s - (CH)_s$

SUBTASK 34-23-00-970-013

- (21) Calculate and make a record of the north-south single-cycle error coefficient, C, and its sign as follows:  $C = 0.5(D_n - D_s)$

SUBTASK 34-23-00-820-013

- (22) Turn the N-S adjustment screw on the standby compass (while at the south magnetic heading) to give a compass heading indication of  $(CH)_s - C$ .

SUBTASK 34-23-00-580-008

- (23) Turn the airplane to a direction where the captain's ND shows a heading ( $\pm 2$  degrees) of magnetic west, (MH>w.

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SUBTASK 34-23-00-970-014

- (24) Make a record of the magnetic heading, (MH)<sub>w</sub>, and the standby compass heading, (CH)<sub>w</sub>.

SUBTASK 34-23-00-970-015

- (25) Calculate and make a record of the west heading deviation, Dw, as follows:  $Dw = (MH)_w - (CH)_w$

SUBTASK 34-23-00-970-016

- (26) Calculate and make a record of the east-west single-cycle error coefficient, B, and its sign as follows:  $B = 0.5(De - Dw)$

SUBTASK 34-23-00-820-014

- (27) Turn the E-W adjustment screw on the standby compass (while at the west magnetic heading) to give a compass heading indication of  $(CH)_w - B$ .

### F. Twelve Point Correction Swing Procedure

SUBTASK 34-23-00-580-009

- (1) Move the airplane to a location near the center of the compass swing area.

NOTE: For each of the magnetic headings that follow, the remaining deviation for the standby magnetic compass must not be more than  $\pm 8$  degrees for FAA certification. For CAA certification, the remaining deviation must not be more than  $\pm 5$  degrees.

SUBTASK 34-23-00-580-010

- (2) Turn the airplane to each of these ND magnetic headings: 0, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, and 330 degrees.

SUBTASK 34-23-00-970-017

- (3) Make a record of the magnetic heading, MH, and the standby compass heading, CH, for each 30 degree increment.

SUBTASK 34-23-00-970-018

- (4) Calculate and make a record of the deviation, D, for each 30 degree heading in the steer column of the compass correction card as follows:  $D = MH - CH$

SUBTASK 34-23-00-970-020

- (5) Make a record of the standby compass heading, CH, in the steer column of the compass correction card for each 30 degree heading increment.

### G. Put the Airplane Back to Its Usual Condition

SUBTASK 34-23-00-860-020

- (1) Remove the actuator from the Ground Spoiler Interlock Valve Sensor (S1050).

SUBTASK 34-23-00-860-016

- (2) Remove the deactuators from the nose and main landing gear.

SUBTASK 34-23-00-840-002

- (3) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

SUBTASK 34-23-00-860-013

- (4) Set the mode select switches on the inertial reference system (IRS) mode select unit (MSU) to the OFF position.

SUBTASK 34-23-00-860-014

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

———— END OF TASK ————

EFFECTIVITY
AKS ALL

**34-23-00**



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AIRCRAFT MAINTENANCE MANUAL

STANDBY MAGNETIC COMPASS LIGHT - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Standby Magnetic Compass Light - Removal
  - (2) Standby Magnetic Compass Light - Installation

**TASK 34-23-01-000-802**

**2. Standby Magnetic Compass Light - Removal**

(Figure 201)

**A. General**

- (1) The Standby Magnetic Compass Light is located on the front of the Standby Magnetic Compass, which is below the P5 forward overhead panel.

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-23-01-860-006

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

**AKS ALL; AIRPLANES WITH STANDBY MAGNETIC COMPASS C-5L OR PGA0116W**

SUBTASK 34-23-01-000-001

**CAUTION:** DO NOT PULL THE SPRING WHEN YOU REMOVE THE LAMP. THE SPRING CAN BREAK. THIS WILL CAUSE PERMANENT DAMAGE TO THE COMPASS.

- (2) Do these steps to remove the standby compass light:

- (a) Remove the lightholder assembly and light [1].
- (b) Remove the light from the lightholder assembly.

**NOTE:** Gently twisting the lamp can assist in its removal.

**AKS ALL; AIRPLANES WITH STANDBY MAGNETIC COMPASS C-5C**

SUBTASK 34-23-01-000-002

- (3) Do these steps to remove the standby compass light:

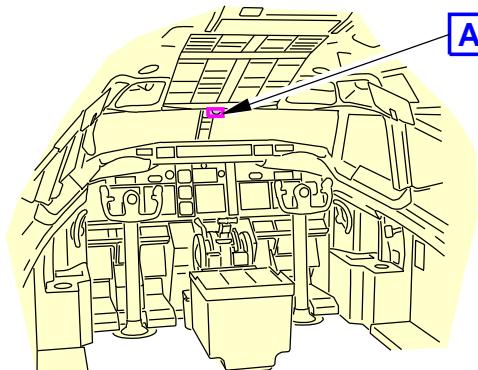
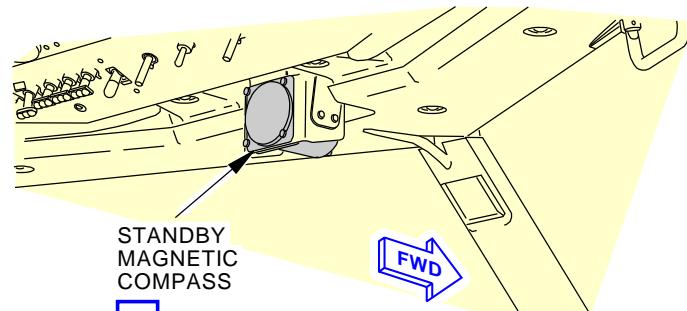
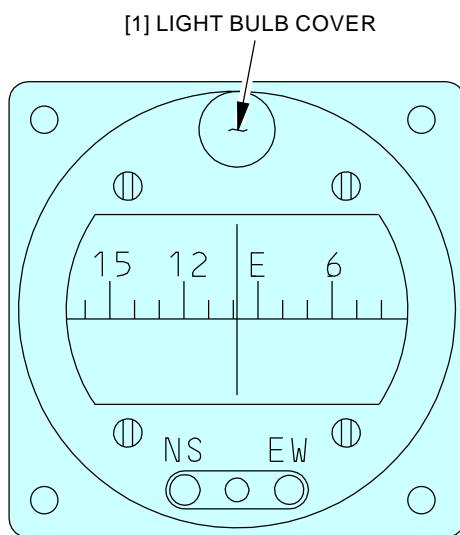
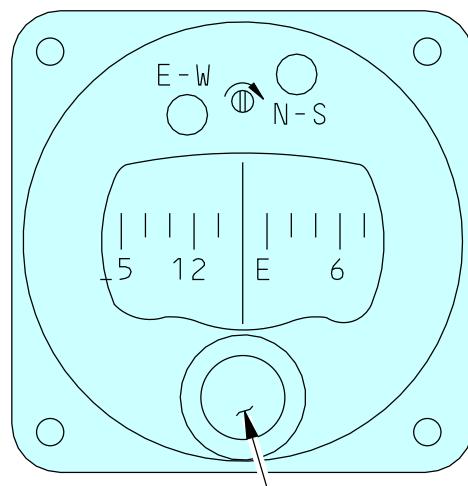
- (a) Remove the lightholder assembly and light [1].
- (b) Remove the light from the lightholder assembly.

**AKS ALL**

———— END OF TASK ————

EFFECTIVITY
AKS ALL

**34-23-01**


**FLIGHT COMPARTMENT**

**STANDBY  
MAGNETIC  
COMPASS**
**A**

**STANDBY MAGNETIC COMPASS**
**B** [1]

**STANDBY MAGNETIC COMPASS**
**B** [2]

**[1]** AIRPLANES WITH STANDBY MAGNETIC COMPASS P/N C-5C

**[2]** AIRPLANES WITH STANDBY MAGNETIC COMPASS P/N C-5L OR P/N PGA0116W

N76552 S0006576669\_V4

**Standby Magnetic Compass Light**  
**Figure 201/34-23-01-990-802**

EFFECTIVITY  
**AKS ALL**

**34-23-01**

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AIRCRAFT MAINTENANCE MANUAL

**TASK 34-23-01-400-802**

**3. Standby Magnetic Compass Light - Installation**

(Figure 201)

**A. References**

<u>Reference</u>	<u>Title</u>
24-22-00-860-811	Supply Electrical Power (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Installation Procedure**

SUBTASK 34-23-01-860-007

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

SUBTASK 34-23-01-400-001

- (2) Do these steps to install the standby magnetic compass light:

- Put the light into the lighthead assembly [1].
- Install the lighthead assembly on the compass.

SUBTASK 34-23-01-860-008

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

SUBTASK 34-23-01-860-009

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

SUBTASK 34-23-01-860-010

- (5) Make sure the panel light switch is in the ON position.

SUBTASK 34-23-01-210-001

- (6) Make sure the standby magnetic compass internal lights are on.

———— END OF TASK ————



**34-23-01**



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AIRCRAFT MAINTENANCE MANUAL

STANDBY MAGNETIC COMPASS - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the standby magnetic compass
  - (2) An installation of the standby magnetic compass.
- B. The standby magnetic compass is installed below the center of the forward overhead panel, P5, in the flight compartment.

**TASK 34-23-01-000-801**

**2. Standby Magnetic Compass Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-23-01-860-001

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

SUBTASK 34-23-01-020-001

**CAUTION:** USE ONLY TOOLS THAT ARE NOT MAGNETIC FOR THE REMOVAL AND THE INSTALLATION OF THE STANDBY MAGNETIC COMPASS. MAGNETIC TOOLS CAN CAUSE DAMAGE TO THE INSTRUMENT.

- (2) Remove the standby magnetic COMPASS [1]:
  - (a) Disconnect the electrical connector [3].
  - (b) Remove the four brass screws [2] that hold the standby magnetic COMPASS [1] to the mounting bracket.
  - (c) Remove the standby magnetic COMPASS [1].
  - (d) Put protective covers on the electrical connector [3] and the connector on the back of the standby magnetic COMPASS [1].

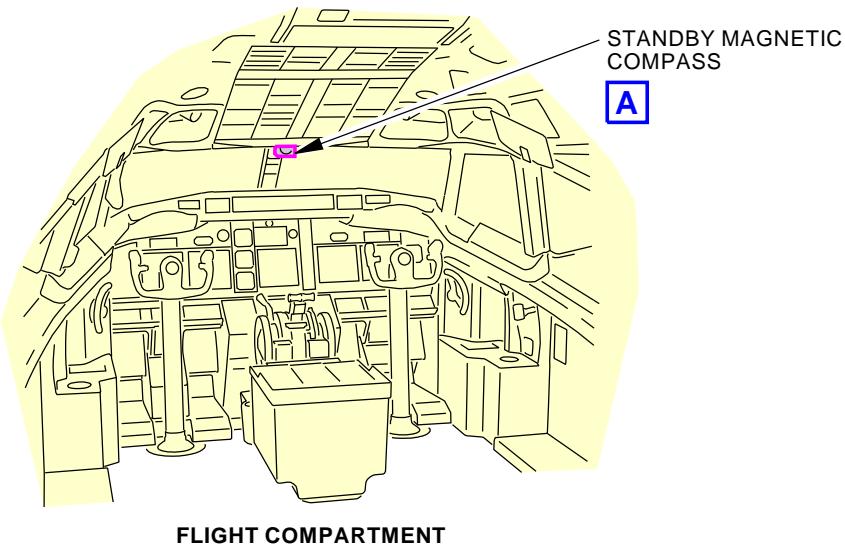
———— END OF TASK ————

EFFECTIVITY  
AKS ALL

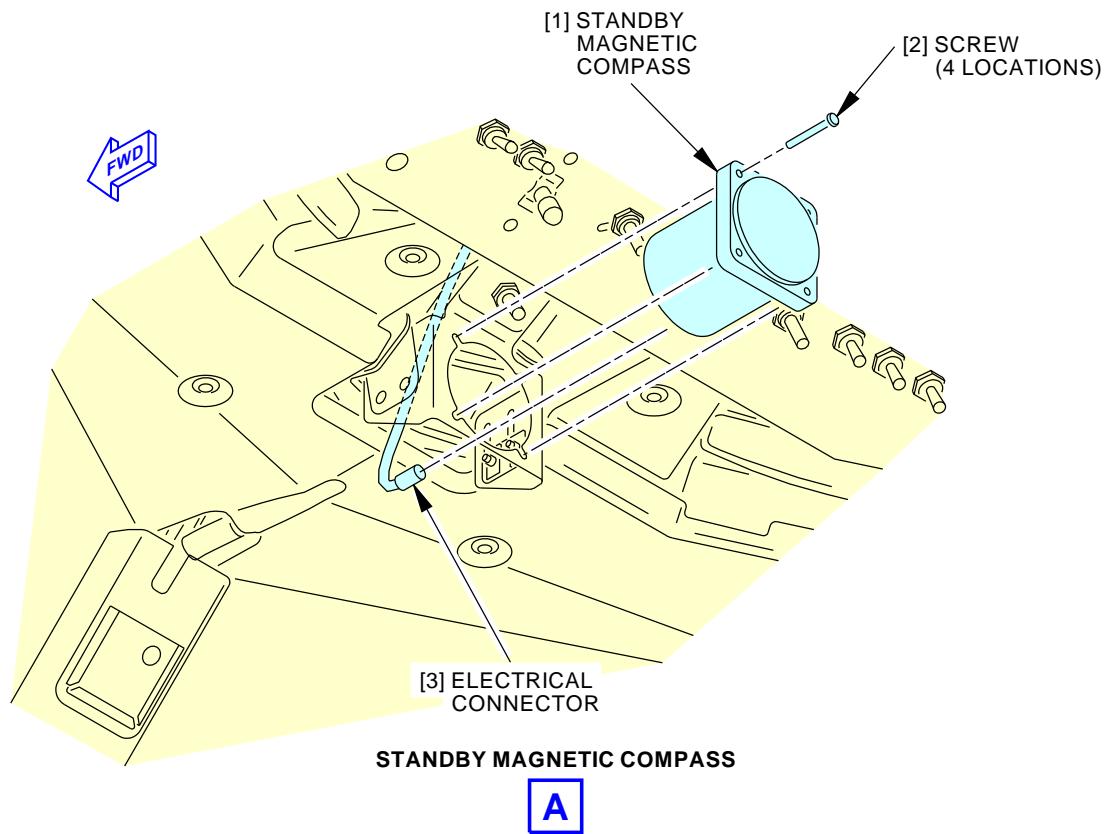
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FLIGHT COMPARTMENT



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**Standby Magnetic Compass Installation**  
Figure 401/34-23-01-990-801

EFFECTIVITY  
AKS ALL

**34-23-01**

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**TASK 34-23-01-400-801**

**3. Standby Magnetic Compass Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-23-00-820-801	Standby Magnetic Compass Calibrator Procedure (P/B 201)
34-23-00-820-802	Standby Magnetic Compass Taxi/Tow Around Procedure (P/B 201)

**B. Location Zones**

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

**C. Installation Procedure**

SUBTASK 34-23-01-860-002

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

SUBTASK 34-23-01-420-001

**CAUTION:** USE ONLY TOOLS THAT ARE NOT MAGNETIC FOR THE REMOVAL AND THE INSTALLATION OF THE STANDBY MAGNETIC COMPASS. MAGNETIC TOOLS CAN CAUSE DAMAGE TO THE INSTRUMENT.

- (2) Install the standby magnetic COMPASS [1]:

- (a) Remove the protective covers from the electrical connector [3] and the connector on the back of the standby magnetic COMPASS [1].
- (b) Examine the electrical connector [3] for bent or broken pins, dirt, and damage.
- (c) Install the standby magnetic COMPASS [1] onto the mounting bracket.
- (d) Connect the electrical connector [3] to the standby magnetic COMPASS [1]. Push the electrical connector [3] until it locks into its position with a click.

**AKS ALL; AIRPLANES WITH AMETEK NON-MOD A COMPASS C-5L AND C-5M**

- 1) Wind 1 inch wide Scotch No. 24 wire mesh tape around the junction of the electrical connector [3] and standby magnetic COMPASS [1] a minimum of three times.

**NOTE:** Securing the connector with tape only applies to AMETEK C-5L and C5-M compasses that have not been modified to MOD A. "MOD A" will appear next to the part number if the compass has been modified.

**NOTE:** The tape must touch against the rear of the standby magnetic compass case. Keep sufficient tension on the tape while you wind the junction to make it the shape of the connector. You can use thinner tape, if you wind the connector with a minimum overlap of 50 percent. Wind all parts of the connector within 1 inch of the compass with a minimum of three wrappings. Temporarily secure the end of the tape.

EFFECTIVITY
AKS ALL

**34-23-01**



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**AKS ALL; AIRPLANES WITH AMETEK NON-MOD A COMPASS C-5L AND C-5M (Continued)**

- 2) Wind the mesh tape a minimum of two times with 1 inch wide Scotch No. 70 or A-A-59163 Type I self-fusing silicone rubber tape.

NOTE: Keep sufficient tension on the tape while you wind the junction to make it the shape of the connector. You can use thinner tape, if you wind the connector with a minimum overlap of 50 percent. Wind all of the wire mesh tape with a minimum of two wrappings of the silicone rubber tape.

- 3) If the connector is removed for any reason, discard all tape and repeat step (d) above using new tape.

**AKS ALL**

- (e) Install the four brass screws [2] at the corners of the standby magnetic COMPASS [1].

SUBTASK 34-23-01-860-003

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00161	CONTROL CABIN LIGHTING STBY COMPASS

**D. Installation Test**

SUBTASK 34-23-01-860-004

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

SUBTASK 34-23-01-750-001

- (2) Make sure the light for the standby magnetic COMPASS [1] is on.

SUBTASK 34-23-01-820-001

- (3) Do this task: Standby Magnetic Compass Taxi/Tow Around Procedure, TASK 34-23-00-820-802 or Standby Magnetic Compass Calibrator Procedure, TASK 34-23-00-820-801.

NOTE: In the event the compass is removed and there are no modifications to the area or equipment, and the same equipment is installed, there is no need or requirement to swing the compass.

SUBTASK 34-23-01-860-005

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

———— END OF TASK ————



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STANDBY ATTITUDE REFERENCE SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
  - (1) Standby Attitude Reference System Deactivation.
  - (2) Standby Attitude Reference System Activation.

**TASK 34-24-00-040-801**

**2. Standby Attitude Reference System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power from the Standby Attitude Reference System.

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-24-00-860-015

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR

**D. Standby Attitude Reference System - Tryout**

NOTE: This tryout is to make sure the Standby Attitude Reference System is in a zero energy state.

SUBTASK 34-24-00-860-016

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR

SUBTASK 34-24-00-700-001

- (2) Make sure the panel lights for the indicator are not on.

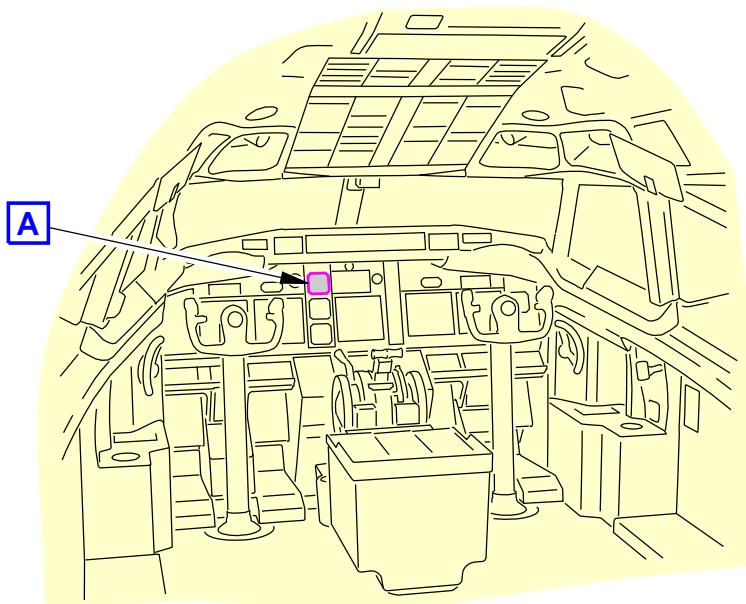
———— END OF TASK ————

EFFECTIVITY
AKS ALL

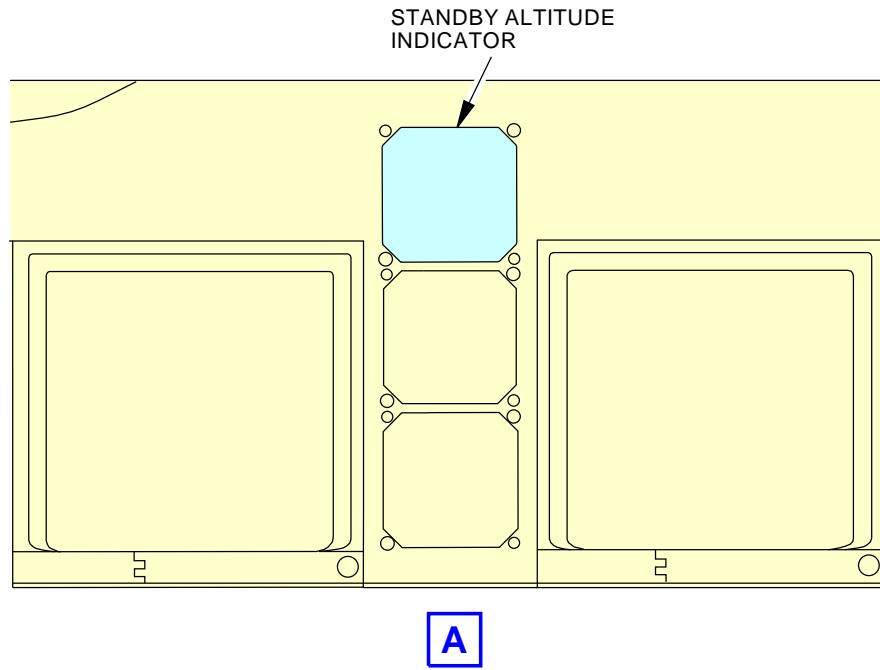
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FLIGHT COMPARTMENT



2382224 S0000545883\_V1

**Standby Attitude Reference System**  
**Figure 201/34-24-00-990-801**

EFFECTIVITY  
AKS ALL

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**TASK 34-24-00-440-801**

**3. Standby Attitude Reference System - Activation**

(Figure 201)

**A. General**

- (1) This procedure adds electrical power to the Standby Attitude Reference System.

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-24-00-860-017

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

**F/O Electrical System Panel, P6-3**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-24-00**



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INTEGRATED STANDBY FLIGHT DISPLAY - MAINTENANCE PRACTICES

1. **General**

- A. This procedure has this task:
- (1) Integrated Standby Flight Display (ISFD) Alignment.

**TASK 34-24-02-820-801-091**

2. **Integrated Standby Flight Display Alignment**

(Figure 201)

A. **References**

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

B. **Location Zones**

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

C. **Procedure**

SUBTASK 34-24-02-760-001-091

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

SUBTASK 34-24-02-820-002-091

- (2) Do these steps to check the ISFD alignment:
  - (a) Select INIT/REF on the FMC-CDU keyboard.
  - (b) Select INDEX (LSK 6L).
  - (c) Select MAINT (LSK 6R).
  - (d) Select DFCS (LSK 2L).
  - (e) Select EXTENDED MAINTENANCE (LSK 4L).
  - (f) Select ISFD ALIGN (LSK 5L).
  - (g) Select CHANNEL A (LSK 2L) (Select LSK 3L if CHANNEL B is necessary).
    - 1) After completion of step (g), PAGE 1 from Figure 201 will show on the ISFD.
  - (h) Select NEXT PAGE on the FMC-CDU keyboard to see PAGE 2 of Figure 201.
  - (i) Align the ISFD so that the PITCH and ROLL errors are less than 0.5 degrees.
  - (j) Select INIT/REF on the FMC-CDU keyboard to exit the alignment procedure.

———— END OF TASK ————

EFFECTIVITY  
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D F C S	B I T E	T E S T
I S F D	A L I G N	C H A N - X      1 / 2
PITCH ANGLE (DEG) + = NU		
ADIRU (IRU)	- LCL	XX . X
ADIRU (IRU)	- FGN	XX . X
I S F D		XX . X
ROLL ANGLE (DEG) + = RWD		
ADIRU (IRU)	- LCL	XX . X
ADIRU (IRU)	- FGN	XX . X
I S F D		XX . X
< EXIT		PREV MENU>

PAGE 1

D F C S	B I T E	T E S T
I S F D	A L I G N	C H A N - X      2 / 2
PITCH ERROR (DEG)		
+ =	NOSE UP	
XX . X		
ROLL ERROR (DEG)		
+ =	RIGHT WING DOWN	
XX . X		
< EXIT		PREV MENU>

PAGE 2

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Integrated Standby Flight Display Alignment  
Figure 201/34-24-02-990-802-091

EFFECTIVITY  
AKS ALL

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INTEGRATED STANDBY FLIGHT DISPLAY - REMOVAL/INSTALLATION

1. General

- A. This procedure has these tasks:
- (1) A removal of the integrated standby flight display.
  - (2) An installation of the integrated standby flight display.

**TASK 34-24-02-000-801**

2. Integrated Standby Flight Display Removal

(Figure 401)

A. References

Reference	Title
20-40-12-400-804	Conductive Dust Cap and Connector Cover Installation (P/B 201)

B. Tools/Equipment

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

Reference	Description
SPL-12596	Tool - Extracting Part #: F1402369 Supplier: F9111

C. Location Zones

Zone	Area
211	Flight Compartment - Left

D. Removal Procedure

**SUBTASK 34-24-02-860-001**

- (1) Open this circuit breaker and attach a DO-NOT-CLOSE tag:

**AKS ALL**

- (a) Front of the ISFD Dedicated Battery System, M2100, E4-1:
  - 1) DBC Output breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

**SUBTASK 34-24-02-860-020**

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

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR
D	8	C00701	EMER PANEL LTG

**SUBTASK 34-24-02-020-001**

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE INTEGRATED STANDBY FLIGHT DISPLAY. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE INTEGRATED STANDBY FLIGHT DISPLAY.

- (3) Remove the integrated standby flight display [3]:

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

**34-24-02**



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- (a) Loosen, but do not remove, the two adjustment screws [1] adjacent to the integrated standby flight display [3] until the integrated standby flight display [3] can be removed.
  - 1) If necessary, push the two adjustment screws to release the ISFD from the mount clamp.

**CAUTION:** DO NOT USE THE BARO KNOB TO PULL THE DISPLAY [3] FROM THE INSTRUMENT PANEL. DAMAGE TO THE DISPLAY [3] CAN OCCUR IF THE BARO KNOB IS PULLED DURING REMOVAL.

**CAUTION:** CAREFULLY PULL THE DISPLAY [3] FROM THE INSTRUMENT PANEL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE ELECTRICAL CABLE AND THE HOSES ON THE REAR OF THE DISPLAY [3].

- (b) Use the ISFD extracting tool, SPL-12596 to pull the integrated standby flight display [3] from the instrument panel until you can get access to the electrical connector [4], pitot hose [5] and static hose [6].
- (c) If the integrated standby flight display [3] is not easy to remove, loosen the two mounting screws [2] to make the removal easier.
- (d) If necessary, remove the adjacent coverplate for more access to disconnect the electrical and pneumatic connectors.

**CAUTION:** MAKE SURE THAT THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE PITOT HOSE [5] AND THE STATIC HOSE [6]. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE DISPLAY [3] CAN OCCUR.

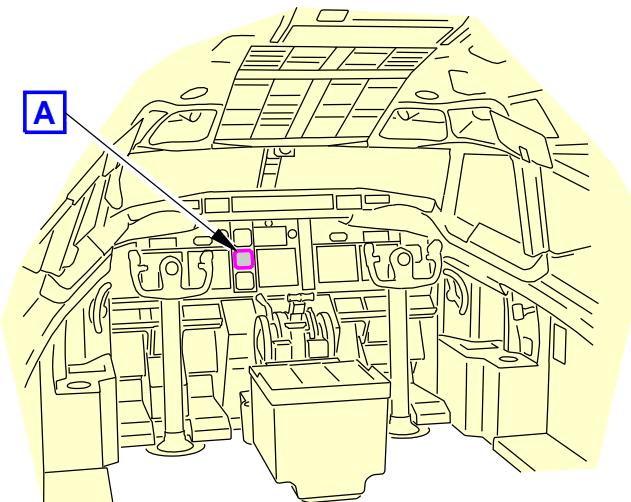
- (e) Disconnect the pitot hose [5] and static hose [6] from the integrated standby flight display [3].
- (f) Disconnect the electrical connector [4].
- (g) Remove the integrated standby flight display [3].
- (h) Do this task: Conductive Dust Cap and Connector Cover Installation, TASK 20-40-12-400-804.

———— END OF TASK ————

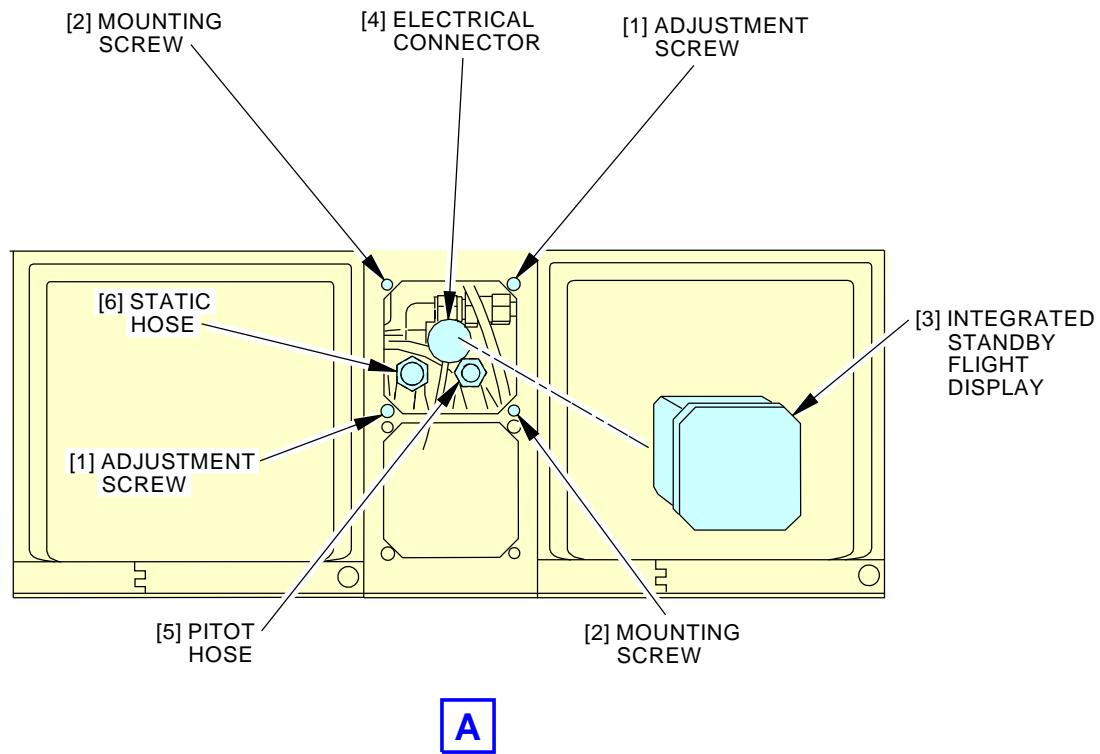
EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
STANDBY FLIGHT DISPLAY

**34-24-02**

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FLIGHT COMPARTMENT



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**Integrated Standby Flight Display Installation**  
**Figure 401/34-24-02-990-801**

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
STANDBY FLIGHT DISPLAY

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TASK 34-24-02-400-801

3. Integrated Standby Flight Display Installation

(Figure 401)

A. References

Reference	Title
20-40-12-000-804	Conductive Dust Cap and Conductor Cover Removal (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

B. Consumable Materials

Reference	Description	Specification
A50212	Compound - Threadlocking, Low-strength - Loctite 222MS	MIL-S-46163A, ASTM D5363

C. Location Zones

Zone	Area
211	Flight Compartment - Left

D. Installation Procedure

SUBTASK 34-24-02-860-002

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

**AKS ALL**

- (a) Front of the ISFD Dedicated Battery System, M2100, E4-1:  
1) DBC Output Breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-420-001

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE INTEGRATED STANDBY FLIGHT DISPLAY. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE INTEGRATED STANDBY FLIGHT DISPLAY.

- (2) Install the integrated standby flight display [3]:

- (a) Do this task: Conductive Dust Cap and Conductor Cover Removal, TASK 20-40-12-000-804.  
(b) Examine the electrical connector [4] for bent or broken pins.  
(c) Connect the electrical connector [4] at the rear of the integrated standby flight display [3].

**CAUTION:** MAKE SURE THAT THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU CONNECT THE PITOT HOSE [5] AND THE STATIC HOSE [6] TO THE DISPLAY [3]. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE DISPLAY [3] CAN OCCUR.

- (d) Connect the pitot hose [5] and static hose [6] to the integrated standby flight display [3].  
(e) Do a visual inspection to make sure the pitot-static system hose connections and quick-disconnect fittings are locked in the sealed position.

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

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- 1) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.
- (f) Apply Loctite 222MS compound, A50212 to the threads of the mounting screws [2]
- (g) Install the integrated standby flight display [3] into the instrument panel.
  - 1) Make sure the ISFD is seated all the way into the panel opening and pushed tight against the panel face with no gaps between the instrument bezel and the panel face.
- (h) Torque the two adjustment screws [1] adjacent to the integrated standby flight display [3] to 4 in-lb - 9 in-lb.
- (i) Torque the two mounting screws [2] to 4 in-lb - 9 in-lb.
- (j) Do a visual inspection to make sure the ISFD is properly fitted in its clamp and aligned with the cockpit panel.
- (k) Install the coverplate if previously removed.

SUBTASK 34-24-02-860-021

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR
D	8	C00701	EMER PANEL LTG

SUBTASK 34-24-02-710-003

- (4) Do the ISFD installation test.

**E. ISFD Installation Test**

SUBTASK 34-24-02-860-004

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

SUBTASK 34-24-02-860-019

**AKS ALL**

- (2) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-700-007

- (3) Close this circuit breaker and remove the DO-NOT-CLOSE tag:

**AKS ALL**

- (a) Front of the ISFD Dedicated Battery System, M2100, E4-1:
  - 1) DBC Output Breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-700-001

- (4) Make sure that the display shows the following flags in approximately 15 seconds after power up:

- (a) SPD flag
- (b) ATT flag

**EFFECTIVITY**  
**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

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- (c) ALT flag
- (d) INIT 90S flag.

SUBTASK 34-24-02-710-001

- (5) Make sure the following flags and indications show in approximately 15 to 90 seconds after power up:
  - (a) ATT flag
  - (b) INIT 90S flag
  - (c) Airspeed indication with no SPD flag
  - (d) Altitude indication with no ALT flag.

SUBTASK 34-24-02-710-002

- (6) Make sure the following is displayed on the ISFD after approximately 90 seconds:
  - (a) Attitude (normal) display with the following indications with no flags:
    - 1) Fixed aircraft symbol
    - 2) Roll scale
    - 3) Roll index
    - 4) Pitch scale.

NOTE: To restart the initialization, push and release the ATT RST button on the face of the ISFD.

SUBTASK 34-24-02-820-001

- (7) Make sure that the attitude data on the ISFD is the same as the captain's attitude display  $\pm 1$  degree.
  - (a) If the attitude on the ISFD is out of tolerance, adjust the adjustment screws [1] as necessary.

SUBTASK 34-24-02-700-003

**AKS ALL**

- (8) Push APP and HP/IN, on the face of the ISFD, for approximately two seconds.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-700-004

- (9) Push the + select key next to <TESTS.

SUBTASK 34-24-02-700-005

- (10) Push the select key next to <FUNCTIONAL TEST (110s).

NOTE: The TEST screen will display IN PROGRESS 110s.

SUBTASK 34-24-02-700-006

- (11) Make sure the TEST result displays TEST OK.

SUBTASK 34-24-02-700-008

- (12) Push and release the RST (reset) button.

———— END OF TASK ————

EFFECTIVITY

**AKS ALL; AIRPLANES WITH THE INTEGRATED  
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INTEGRATED STANDBY FLIGHT DISPLAY - ADJUSTMENT/TEST

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) An operational test of the integrated standby flight display (ISFD).
  - (2) An operational test of the dedicated battery charger and battery pack for the integrated standby flight display (ISFD).

**TASK 34-24-02-710-801**

**2. Integrated Standby Flight Display - Operational Test**

**A. References**

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

**B. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-24-02-860-017

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

SUBTASK 34-24-02-700-009

- (2) Close this circuit breaker and remove the DO-NOT-CLOSE tag:

**AKS ALL**

- (a) Front of the ISFD Dedicated Battery System, M2100, E4-1:
  - 1) DBC Output Breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-700-010

- (3) Make sure that the display shows the following flags in approximately 15 seconds after power up:
  - (a) SPD flag
  - (b) ATT flag
  - (c) ALT flag
  - (d) INIT 90S flag.

SUBTASK 34-24-02-710-004

- (4) Make sure the following flags and indications show in approximately 15 to 90 seconds after power up:
  - (a) ATT flag

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**AKS ALL; AIRPLANES WITH THE INTEGRATED  
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- (b) INIT 90S flag
- (c) Airspeed indication with no SPD flag
- (d) Altitude indication with no ALT flag.

SUBTASK 34-24-02-710-005

- (5) Make sure the following is displayed on the ISFD after approximately 90 seconds:

- (a) Attitude (normal) display with the following indications with no flags:
  - 1) Fixed aircraft symbol
  - 2) Roll scale
  - 3) Roll index
  - 4) Pitch scale.

NOTE: To restart the ATT, push and release the ATT RST button on the face of the ISFD.

———— END OF TASK ————

**TASK 34-24-02-730-801**

**3. Integrated Standby Flight Display - System Test**

**A. References**

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

**B. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2

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(Continued)

<b>Reference</b>	<b>Description</b>
COM-1916	Adapter - Pitot Test (Typically included in Air Data Accessory Kit, PN ADA737-678) Part #: CSA75700HT-3 Supplier: 3BSK6 Part #: P75701M2-3 Supplier: 38002
COM-1921	Adapter - Static Test Part #: 33410LH-125-4 Supplier: 38002 Part #: CSTL19725-4 Supplier: 3BSK6
COM-1927	Coupling - Quick Disconnect, Static System Drain Fitting Part #: 1QF2-3-64C Supplier: 24984

**C. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
G02219	Tape - Yellow Vinyl Adhesive, Scotch Brand No.471, 1.5 Inches (38.1 mm) Wide	

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**E. Access Panels**

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

**F. Prepare for the System Test**

SUBTASK 34-24-02-730-007

- (1) Do the Operational Test for the integrated standby flight display.

SUBTASK 34-24-02-860-016

**WARNING:** MAKE SURE THAT THE ATC TRANSPONDERS ARE IN STANDBY MODE WHEN YOU SIMULATE ALTITUDE. YOU CAN ACCIDENTALLY CAUSE FALSE TCAS TARGETS. FALSE TCAS TARGETS CAN CAUSE AIR TRAFFIC IN THE AREA TO DO UNNECESSARY EVASIVE MANEUVERS.

- (2) Make sure that the ATC transponders are in standby mode.

SUBTASK 34-24-02-860-005

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

**CAPT Electrical System Panel, P18-3**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

EFFECTIVITY  
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SUBTASK 34-24-02-860-006

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

**AKS ALL**

SUBTASK 34-24-02-750-002

- (5) Make sure that the altitude tape, airspeed tape, heading, and attitude pitch and roll are displayed on the ISFD with no red flags.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-860-007

- (6) Set the BARO scale of the ISFD to 29.92 inches of mercury (1013 millibars).

**G. Installation of the Drain Coupling, 1QF2-3-64C (Recommended)**

SUBTASK 34-24-02-480-001

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH THE TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (1) Seal the two alternate static ports with vinyl adhesive Scotch Brand No.471 tape, G02219 at these locations:  
(a) The ALTERNATE static port on the right side of the fuselage.  
(b) The ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-24-02-480-002

- (2) Remove the cap from the No. 5 Alternate Static Drain, in the electronic equipment compartment, below the E-5 rack.

Get access to the drain in the electronic equipment compartment through this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-24-02-400-001

- (3) Install the coupling, COM-1927, on the No. 5 Alternate Static Drain.

SUBTASK 34-24-02-400-002

- (4) Connect the air data model test set, COM-1914 to the coupling, COM-1927.

**H. Installation of the Static Port Adapter, 33410LH-125-4 (Optional to the Drain Coupling)**

SUBTASK 34-24-02-400-003

**CAUTION:** INSTALL THE ADAPTER, 33410LH-124-4, SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (1) Install the static test adapter, COM-1921, on the ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-24-02-400-005

- (2) Connect the air data model test set, COM-1914 to the static test adapter, COM-1921.

EFFECTIVITY  
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SUBTASK 34-24-02-480-010

**WARNING:** WHEN THE STATIC PORTS ARE COVERED, MAKE SURE THAT CONDITION IS VISIBLE FROM THE GROUND. FAILURE TO OBSERVE AND REMOVE COVERINGS OVER STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PUSH TAPE INTO THE STATIC PORTS. YOU CAN CAUSE DAMAGE TO THE STATIC SYSTEM IF YOU PUSH TAPE INTO THE STATIC PORT.

- (3) Seal the ALTERNATE static port on the right side of the fuselage with vinyl adhesive Scotch Brand No.471 tape, G02219.

## I. Installation of the Pitot Probe Adapter

SUBTASK 34-24-02-170-001

**CAUTION:** MAKE SURE THAT YOU FLUSH THE PITOT SYSTEM TEST ADAPTER WITH WATER BEFORE YOU ATTACH THE ADAPTER TO THE PROBE. DAMAGE TO THE PROBE OR THE ADAPTER CAN OCCUR.

- (1) Flush the pitot test adapter, COM-1916 with water.

NOTE: Use equal parts of water and ethylene glycol when the temperature is between 32° and -40°F (-40° to 0°C).

SUBTASK 34-24-02-480-003

- (2) Blow dry, filtered air through the pitot test adapter, COM-1916.

SUBTASK 34-24-02-480-004

- (3) Wipe the probe with a damp cloth.

SUBTASK 34-24-02-480-005

**CAUTION:** MAKE SURE THAT THE PITOT PROBE HAS NO ADDED WEIGHT ON IT FROM THE TEST HOSE. THE PROBE CAN BEND OR TWIST OUT OF TOLERANCE.

- (4) Install the pitot test adapter, COM-1916 on the lower pitot probe located at STA 192, WL 213, RBL 34.

SUBTASK 34-24-02-480-006

- (5) Connect the air data model test set, COM-1914 to the pitot test adapter, COM-1916.

SUBTASK 34-24-02-010-001

- (6) Lower the P5 forward overhead panel.

(a) Loosen the 1/4-turn fasteners that hold the P5 forward overhead panel in position and let the panel rotate downward.

SUBTASK 34-24-02-020-003

**CAUTION:** THE CABIN ALTITUDE DIFFERENTIAL PRESSURE INDICATOR MUST BE DISCONNECTED FROM ITS STATIC PRESSURE SOURCE AND THE SOURCE CAPPED. FAILURE TO DISCONNECT THE CABIN DIFFERENTIAL PRESSURE INDICATOR MAY RESULT IN DAMAGE TO THE INDICATOR.

- (7) Disconnect the alternate static hose from the cabin altitude differential pressure Indicator located behind the P5 forward overhead panel.

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
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J. Test Procedure

SUBTASK 34-24-02-860-008

- (1) Apply pressure to the alternate pitot and alternate static systems for each test point as shown in the table that follows (Table 501):
  - (a) When you apply pressure to the static system, make sure that the rate is less than 5,000 feet for each minute.
  - (b) When you apply pressure to the pitot system, make sure that the rate is less than 300 knots for each minute.

Table 501/34-24-02-993-802

TEST POINT	STATIC (In. Hg)	STATIC (mBar)	PITOT (In. Hg)	PITOT (mBar)	ALTITUDE (feet)	ALTITUDE (meters)	AIRSPEED (knots)
1	29.921	1,013	30.311	1,026	0±30	0±9.14	90±3.5
2	24.896	843	27.996	948	5,000±50	1,524±15.24	250±3.5
3	16.886	572	17.703	599	15,000±110	4,572±33.52	130±3.5
4	11.104	376	17.013	576	25,000±160	7,620±48.76	340±8
5	7.041	238	10.963	371	35,000±210	10,668±64.00	279±6
6	5.286	179	7.95	269	41,000±235	12,496±71.62	233±6

SUBTASK 34-24-02-730-005

- (2) At each test value, permit the pressure to become stable for one minute.
  - (a) Do not hit or shake the display before you read the values.

SUBTASK 34-24-02-780-001

- (3) Make sure that the altitude and airspeed data on the ISFD is in tolerance for each test point in Table 501.

SUBTASK 34-24-02-780-002

- (4) Make sure that the attitude data on the ISFD is the same as the captain's attitude display ± 1 degree.

SUBTASK 34-24-02-210-005

**AKS ALL**

- (5) Do a check to see if the ISFD dedicated battery System (E4-1) is operational:

- (a) Make sure that the red fault light on the front of the battery charger is not on.

NOTE: The red fault light shows that the battery charger is not serviceable. The battery charger can be not serviceable because of battery temperature or because of a cell voltage problem.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-02-860-009

- (6) Put the system back to ambient pressure.

- (a) When you release the pressure from the static system, make sure that the rate is less than 5,000 feet for each minute.

- (b) When you release the pressure from the pitot system, make sure that the rate is less than 300 knots for each minute.

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

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SUBTASK 34-24-02-080-001

- (7) Removal of Drain Coupling, coupling, COM-1927

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INSTRUMENTS CAN OCCUR.

- (a) Disconnect the air data model test set, COM-1914 from the coupling, COM-1927.
- (b) Disconnect the coupling, COM-1927, from the No. 5 Alternate Static Drain.
- (c) Install the cap on the No. 5 Alternate Static Drain.

**WARNING:** FAILURE TO REMOVE THE VINYL ADHESIVE TAPE FROM THE STATIC PORTS BEFORE FLIGHT MAY CAUSE LARGE ERRORS IN AIRSPEED-SENSING AND ALTITUDE-SENSING SIGNALS, WHICH MAY LEAD TO LOSS OF SAFE FLIGHT.

**CAUTION:** DO NOT PLUG OR DEFORM THE HOLES IN THE PORT. MAKE SURE THAT YOU REMOVE ALL OF THE PIECES OF TAPE FROM THE STATIC PORTS. THE SURFACE OF THE PORT MUST BE SMOOTH AND CLEAN. IF IT IS NOT, THE SYSTEM WILL NOT OPERATE CORRECTLY.

- (d) Remove the Scotch Brand No.471 tape, G02219, from the alternate static ports at these locations:
  - 1) The ALTERNATE static port on the right side of the fuselage.
  - 2) The ALTERNATE static port on the left side of the fuselage.

SUBTASK 34-24-02-480-008

- (8) Removal of Static Port Adapter, static test adapter, COM-1921

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INSTRUMENTS CAN OCCUR.

- (a) Disconnect the air data model test set, COM-1914 from the static test adapter, COM-1921.

**CAUTION:** REMOVE THE ADAPTER, 33410LH-125-4, SLOWLY AND CAREFULLY. THE ADAPTER CAN CAUSE SCRATCHES ON THE STATIC PORT, WHICH CAN CAUSE FALSE ALTITUDE READINGS.

- (b) Remove the static test adapter, COM-1921, from the ALTERNATE static port on the left side of the fuselage.
- (c) Remove the Scotch Brand No.471 tape, G02219, from the ALTERNATE static port on the right side of the fuselage.

SUBTASK 34-24-02-080-004

- (9) Removal of the Pitot Probe Adapter

**CAUTION:** MAKE SURE THE PITOT-STATIC SYSTEM IS AT AMBIENT PRESSURE BEFORE YOU DISCONNECT THE TEST SET. IF THE PITOT-STATIC SYSTEM IS NOT AT AMBIENT PRESSURE, DAMAGE TO THE INSTRUMENTS CAN OCCUR.

- (a) Disconnect the air data model test set, COM-1914 from the pitot test adapter, COM-1916.

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
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- (b) Remove the pitot test adapter, COM-1916, from the pitot probe.

SUBTASK 34-24-02-410-001

- (10) Connect the alternate static hose to the cabin altitude differential pressure indicator located behind the P5 forward overhead panel.

SUBTASK 34-24-02-210-007

- (11) Do a visual inspection of the quick-disconnect fittings that you connected.

- (a) Make sure that the actuation ring of the quick-disconnect fitting is fully engaged on the lock pins, and make sure that you see the colored lock ring indicator that shows a correct connection of the quick-disconnect fitting.

SUBTASK 34-24-02-410-002

- (12) Lift the P5 forward overhead panel to the closed position and turn the 1/4-turn fasteners.

**K. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-24-02-860-012

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

**CAPT Electrical System Panel, P18-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	1	C00523	HEATERS CAPT PITOT
C	2	C00238	HEATERS TEMP PROBE
D	3	C01071	HEATERS ALPHA VANE RIGHT
D	5	C00525	HEATERS F/O PITOT
D	6	C00524	HEATERS AUX PITOT

— END OF TASK —

**TASK 34-24-02-710-802**

**4. ISFD Dedicated Battery System - Operational Test**

NOTE: This procedure is a scheduled maintenance task.

**A. References**

<u>Reference</u>	<u>Title</u>
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-24-03 P/B 401	ISFD DEDICATED BATTERY CHARGER - REMOVAL/INSTALLATION

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
121	Forward Cargo Compartment - Left
122	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. General**

SUBTASK 34-24-02-800-001

- (1) This procedure is a scheduled maintenance task to see if the battery charger and battery pack for the integrated standby flight display are operational.

EFFECTIVITY

AKS ALL; AIRPLANES WITH THE INTEGRATED  
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**D. Prepare for the Operational Test**

SUBTASK 34-24-02-860-014

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

**E. Operational Test of the Dedicated Battery System and Battery Pack for the Integrated Standby Flight Display**

SUBTASK 34-24-02-210-006

**AKS ALL**

- (1) Do a check to see if the ISFD dedicated battery system (E4-1) and battery pack are serviceable:

- (a) Make sure that the red FAULT light on the front of the battery charger is not on.

NOTE: The red FAULT light shows that the battery charger or the battery pack are not serviceable. The battery charger or battery pack can be not serviceable because of problems with battery charger operating temperature, battery charger voltage output, or battery pack cell voltage.

NOTE: If the red FAULT light is not on and a display shows on the integrated standby flight display, the battery charger and battery are serviceable.

- (b) If the battery charger or battery pack are not serviceable, do this task: (ISFD DEDICATED BATTERY CHARGER - REMOVAL/INSTALLATION, PAGEBLOCK 34-24-03/401)
  - (c) Make sure that the yellow "ALT", "SPD", "ATT" and "INIT XXs" flags are displayed on the ISFD for approximately 10 to 15 seconds after power up.

NOTE: "XXs" refers to the time remaining (in seconds) for the ISFD to complete its initialization. Timer starts at 90s and counts down to 0s.

- (d) After 15 seconds make sure the display still show "ATT" and "INIT XXs" on the ISFD.
  - (e) After 120 seconds, make sure the display change to an attitude display.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-24-02-860-018

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

————— END OF TASK ————

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
STANDBY FLIGHT DISPLAY

**34-24-02**



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ISFD DEDICATED BATTERY CHARGER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) A removal of the dedicated battery charger and battery pack for the integrated standby flight display (ISFD).
  - (2) An installation of dedicated battery charger and battery pack for the ISFD.

**AKS ALL**

- C. The battery charger [1] is on the E4 electronic equipment rack, shelf No. 1, in the main equipment center.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

**TASK 34-24-03-000-801**

**2. ISFD Dedicated Battery Charger and Battery Pack Removal**

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-000-801	E/E Box Removal (P/B 201)
20-40-12 P/B 201	ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES - MAINTENANCE PRACTICES

**B. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left

**C. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**D. Prepare for the removal**

**WARNING:** REMOVE ELECTRICAL POWER AND GROUND THE UNIT BEFORE YOU DO MAINTENANCE WORK. THE UNIT CAN CONTAIN ELECTRICITY AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

SUBTASK 34-24-03-840-002

- (1) Before you touch the battery charger or battery pack, do the procedure for devices that are sensitive to electrostatic discharge ( ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES - MAINTENANCE PRACTICES, PAGEBLOCK 20-40-12/201

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY

**34-24-03**



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**E. Removal Procedure - ISFD Dedicated Battery System**

SUBTASK 34-24-03-860-001

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	8	C01551	ISFD

SUBTASK 34-24-03-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

(TASK 06-41-00-800-801).

SUBTASK 34-24-03-860-010

- (3) Open this circuit breaker and attach a DO-NOT-CLOSE tag:

**AKS ALL**

- (a) Front of the battery charger, M2100, E4-1:
  - 1) DBC Output Breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-03-020-001

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE ISFD DEDICATED BATTERY CHARGER [1]. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE ISFD DEDICATED BATTERY CHARGER [1].

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

**F. Removal Procedure - Battery Pack**

SUBTASK 34-24-03-860-008

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	8	C01551	ISFD

SUBTASK 34-24-03-010-002

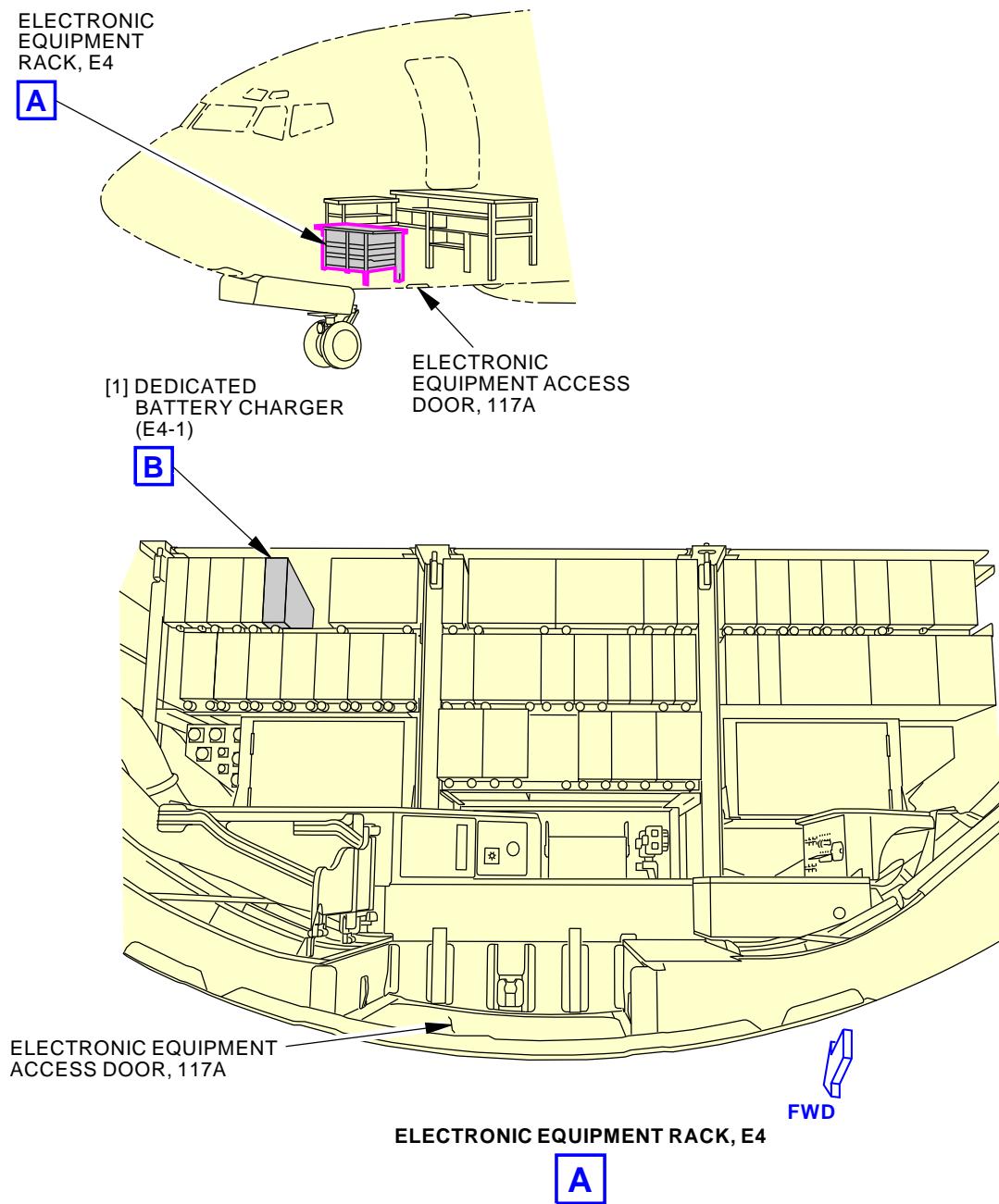
- (2) Do these steps to remove the battery pack from the ISFD dedicated battery system:

- (a) Remove the 14 screws [4] from the battery charger cover [3].
- (b) Remove the bottom screw from the hold down hook [2] on the front plate of the battery charger.
- (c) Remove the battery charger cover [3] from the base.
- (d) Disconnect the battery pack [5] from the battery charger power circuit board.
- (e) Remove the battery pack [5] from the battery charger.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
STANDBY FLIGHT DISPLAY

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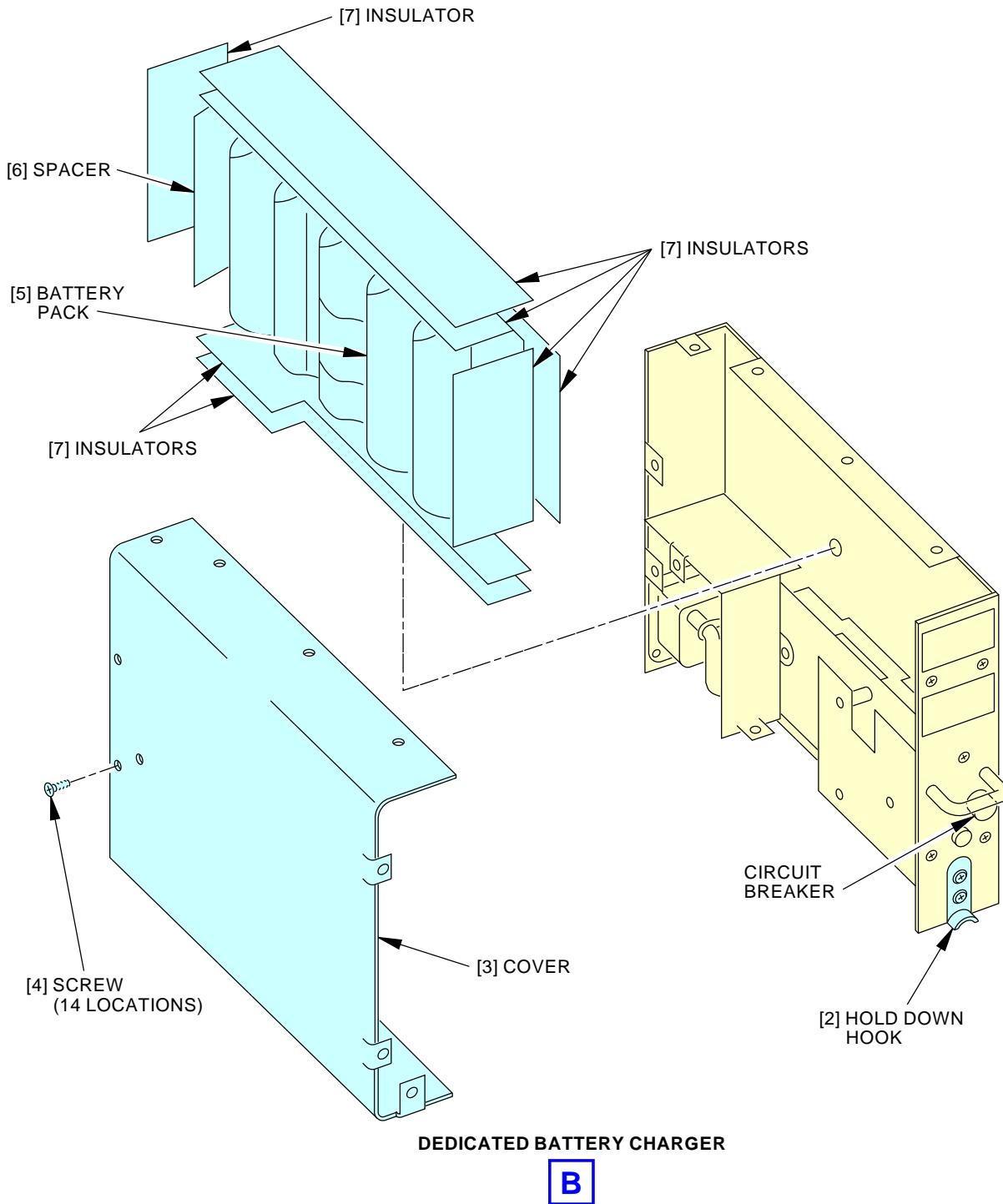


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**ISFD Dedicated Battery Charger Installation**  
**Figure 401/34-24-03-990-801 (Sheet 1 of 2)**EFFECTIVITY  
AKS ALL**34-24-03**

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**ISFD Dedicated Battery Charger Installation**  
**Figure 401/34-24-03-990-801 (Sheet 2 of 2)**

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH THE INTEGRATED  
 STANDBY FLIGHT DISPLAY**

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**TASK 34-24-03-400-801**

**3. ISFD Dedicated Battery Charger and Battery Pack Installation**

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

**A. References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-400-801	E/E Box Installation (P/B 201)
20-40-12 P/B 201	ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES - MAINTENANCE PRACTICES
24-22-00-860-811	Supply Electrical Power (P/B 201)

**B. Consumable Materials**

Reference	Description	Specification
A00270	Compound - Threadlocking, Low-strength - Loctite 222	

**C. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Prepare for the installation**

**WARNING: REMOVE ELECTRICAL POWER AND GROUND THE UNIT BEFORE YOU DO MAINTENANCE WORK. THE UNIT CAN CONTAIN ELECTRICITY AND CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.**

SUBTASK 34-24-03-840-001

- (1) Before you touch the battery charger or battery pack, do the procedure for devices that are sensitive to electrostatic discharge ( ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICES - MAINTENANCE PRACTICES, PAGEBLOCK 20-40-12/201

**F. Installation Procedure - Battery Pack**

SUBTASK 34-24-03-860-009

- (1) Do these steps to install the battery pack in the ISFD dedicated battery system:
  - (a) Make sure that the spacer [6] and the insulators [7] are oriented as shown in Figure 401
  - (b) Put a serviceable battery pack [5] in the battery charger base.

NOTE: The battery pack is serviceable when it has between 20 Vdc and 25Vdc. The battery pack is charged to 27.5Vdc in less than 150 minutes by the dedicated battery charger, and is maintained at 25Vdc by the charger.
  - (c) Connect the battery pack [5] to the battery charger power circuit board.
  - (d) Install the battery charger cover [3] to the battery charger base by aligning the screw holes in the cover with the screw holes in the base.
  - (e) Apply a small amount of Loctite 222 compound, A00270 to the 14 screws [4] removed from the battery charger cover.

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AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY

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- (f) Attach the battery charger cover [3] to the base with the 14 screws [4].
  - 1) Torque the 14 screws [4] to  $5 \pm 1$  in-lb ( $0.6 \pm 0.1$  N·m).
- (g) Install the bottom hold down hook [2] screw.
  - 1) Torque the screw to  $16 \pm 1$  in-lb ( $1.8 \pm 0.1$  N·m)

**G. Installation Procedure - ISFD Dedicated Battery System**

SUBTASK 34-24-03-860-006

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	8	C01551	ISFD

SUBTASK 34-24-03-860-003

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

**AKS ALL**

- (a) Front of the battery charger, M2100, E4-1:
  - 1) DBC Output Breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-03-420-001

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

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

SUBTASK 34-24-03-860-007

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	8	C01551	ISFD

SUBTASK 34-24-03-860-004

- (5) Remove the DO-NOT-CLOSE tag and close this circuit breaker:

**AKS ALL**

- (a) Front of the battery charger, M2100, E4-1:
  - 1) DBC Output Breaker

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

SUBTASK 34-24-03-710-001

- (6) Make sure that the red light on the face of the battery charger is not on.

**H. Installation Test**

SUBTASK 34-24-03-860-005

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

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**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

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SUBTASK 34-24-03-700-001

- (2) Make sure a display shows on the integrated standby flight display.

NOTE: The display will show flags for approximately 15 seconds. After approximately 3 minutes, the display will change to an attitude display.

SUBTASK 34-24-03-700-002

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	8	C01551	ISFD

SUBTASK 34-24-03-700-003

- (4) Make sure a display shows on the integrated standby flight display.

NOTE: This step tests the dedicated battery operation. The battery is replaced every three years for normal maintenance.

NOTE: To restart the display initialization, push and release the ATT RST button on the face of the ISFD.

SUBTASK 34-24-03-700-004

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	8	C01551	ISFD

SUBTASK 34-24-03-710-002

- (6) Make sure that the red FAULT light on the face of the battery charger is not on.

NOTE: If the fault light is not on and a display shows on the integrated standby flight display, the battery charger is serviceable.

- (a) The red FAULT light comes on when there is a fault with the battery charger or the battery, from one or more of these conditions:

- 1) Battery charger operating temperature is more than the maximum 180°F (83°C) or less than the minimum 5°F (-15°C).
- 2) Battery charger circuits do not provide the correct output voltage.
- 3) Voltage levels of the cells in the battery pack are not equal.

SUBTASK 34-24-03-410-002

- (7) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

(TASK 06-41-00-800-801).

———— END OF TASK ————

EFFECTIVITY  
AKS ALL; AIRPLANES WITH THE INTEGRATED  
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INSTRUMENT LANDING SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Instrument Landing System Deactivation
  - (2) Instrument Landing System Activation

**TASK 34-31-00-040-801**

**2. Instrument Landing System - Deactivation**

(Figure 34-31-42-990-801)

**A. General**

- (1) This procedure removes electrical power to the Instrument Landing System.

**B. References**

Reference	Title
34-31-42-990-801	Figure: Receiver for ILS Installation (P/B 401)

**C. Location Zones**

Zone	Area
111	Radome
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Procedure**

SUBTASK 34-31-00-860-026

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	13	C01480	RADIO NAVIGATION MMR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

**F. Instrument Landing System - Tryout**

NOTE: This tryout is to make sure the Instrument Landing system is in a zero energy state.

EFFECTIVITY	AKS ALL
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SUBTASK 34-31-00-860-027

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	13	C01480	RADIO NAVIGATION MMR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-31-00-010-001

- (2) Open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

SUBTASK 34-31-00-210-001

- (3) Make sure the status light/LCD display (as applicable) is not illuminated on the mode receiver.

———— END OF TASK ————

**TASK 34-31-00-440-801**

**3. Instrument Landing System - Activation**

(Figure 34-31-42-990-801)

**A. General**

- (1) This procedure adds electrical power to the Instrument Landing System.

**B. References**

<b>Reference</b>	<b>Title</b>
34-31-42-990-801	Figure: Receiver for ILS Installation (P/B 401)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
111	Radome
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**D. Access Panels**

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



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**E. Procedure**

SUBTASK 34-31-00-860-028

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	13	C01480	RADIO NAVIGATION MMR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-31-00-210-002

- (2) Make sure the status light/LCD display (as applicable) is illuminated on the mode receiver.

SUBTASK 34-31-00-410-001

- (3) Close this access panel:

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

———— END OF TASK ————



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INSTRUMENT LANDING SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
- (1) An operational test of the instrument landing system.
  - (2) A system test of the instrument landing system.

**TASK 34-31-00-710-801**

**2. Instrument Landing System - Operational Test**

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**B. Location Zones**

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

**C. Prepare for the Test**

SUBTASK 34-31-00-860-001

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

SUBTASK 34-31-00-710-001

- (2) Do these steps to prepare for the operational test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the SOURCE switch on the instrument switching module to the AUTO position.
  - (c) Set the mode selector on the captain's and the first officer's EFIS control panel to the APP position.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- (d) Push the approach mode selector (APP) button on the Integrated Standby Flight Display (ISFD) until APP is displayed on the ISFD screen.

**AKS ALL**

- (e) Set the captain's and the first officer's course select controls on the mode control panel (MCP) to the same course as the airplane heading.
- (f) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.



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**D. Power and Tuning Test**

**AKS 014, 019, 026-999**

SUBTASK 34-31-00-860-021

- (1) Set a ILS frequency of 108.1 MHz on the captain's and the first officer's navigation control panels by:
  - (a) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.10" using the NCP keypad.
  - (c) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.
    - 1) Make sure that the following on the CAPT and F/O Primary Flight Displays (PFD's):
      - a) "ILS" is displayed on the upper left corner of the attitude indicator.
      - b) Localizer and Glideslope deviation scales are displayed.

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-31-00-860-024

- (2) Set a frequency of 108.1 MHz on the captain's and the first officer's navigation control panels.  
NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY display window. Then push the TFR button. The frequency will show in the ACTIVE display window.

**AKS ALL**

SUBTASK 34-31-00-860-003

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-00-710-014

- (4) Push and release either side of the Master Caution Annunciators on the P7 glareshield panel.
  - (a) Make sure that the MASTER CAUTION PUSH TO RESET light and the IRS light on the P7 panel are illuminated.
  - (b) Make sure that the GPS light on the IRS Mode Selector Unit (MSU) located on the P5 aft overhead panel is illuminated.

SUBTASK 34-31-00-710-015

- (5) Push and release the MASTER CAUTION PUSH TO RESET button on the P7 panel.
  - (a) Make sure that the MASTER CAUTION PUSH TO RESET light and the IRS light on the P7 panel are extinguished.
  - (b) Make sure that the GPS light on the IRS Mode Selector Unit (MSU) located on the P5 aft overhead panel is extinguished.

SUBTASK 34-31-00-710-002

- (6) Push and release the TEST button on the captain's navigation control panel.

- (a) Make sure that these indications show on the captain's display:

NOTE: It takes approximately 16 to 44 seconds for the test sequence to complete.

- 1) The LOC and G/S flags show momentarily

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AKS ALL

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- 2) The glideslope deviation pointer shows one dot up and the localizer deviation bar shows one dot left.
- 3) The glideslope deviation pointer shows one dot down and the localizer deviation bar shows one dot right.
- 4) The LOC and G/S flags do not show at the end of the test.

SUBTASK 34-31-00-860-004

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-00-860-005

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

SUBTASK 34-31-00-710-003

- (9) Push and release the TEST button on the first officer's navigation control panel.

- (a) Make sure that these indications show on the first officer's display:

NOTE: It takes approximately 16 to 44 seconds for the test sequence to complete.

- 1) The LOC and G/S flags show momentarily
  - 2) The glideslope deviation pointer shows one dot up and the localizer deviation bar shows one dot left.
  - 3) The glideslope deviation pointer shows one dot down and the localizer deviation bar shows one dot right.
  - 4) The LOC and G/S flags do not show at the end of the test.

SUBTASK 34-31-00-860-006

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**E. Data Out, Source Select, and ILS Tuned Discrete Test**

SUBTASK 34-31-00-710-004

- (1) Push and release the TEST button on the captain's navigation control panel.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- (a) Make sure that these indications show on the integrated standby flight display:

NOTE: It takes approximately 16 to 44 seconds for the test sequence to complete.

- 1) The LOC and G/S scales disappear momentarily.
  - 2) The glideslope deviation bar shows one dot up and the localizer deviation bar shows one dot left.
  - 3) The glideslope deviation bar shows one dot down and the localizer deviation bar shows one dot right.

EFFECTIVITY
AKS ALL

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**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY (Continued)**

- 4) The LOC and G/S flags do not show at the end of the test.

**AKS ALL**

SUBTASK 34-31-00-860-022

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

- (a) Make sure that G/S and LOC flags are displayed on the ISFD or the Standby Attitude Indicator

SUBTASK 34-31-00-710-016

- (3) Push and release either side of the Master Caution Annunciators on the P7 glareshield panel.
  - (a) Make sure that the Master Caution Push To Reset light and the IRS light on the P7 panel are illuminated.
  - (b) Make sure that the GPS light on the IRS Mode Select Unit (MSU) located on the P5 aft overhead panel is illuminated.

SUBTASK 34-31-00-710-017

- (4) Push and release the Master Caution Push To Reset button on the P7 panel.
  - (a) Make sure that the Master Caution Push To Reset light and the IRS light on the P7 panel are extinguished.
  - (b) Make sure that the GPS light on the IRS Mode Select Unit (MSU) located on the P5 aft overhead panel is extinguished.

SUBTASK 34-31-00-860-023

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

- (a) Make sure that G/S and LOC scales are displayed on the ISFD.

SUBTASK 34-31-00-710-018

- (6) Push and release either side of the Master Caution Annunciators on the P7 glareshield panel.
  - (a) Make sure that the GPS light on the IRS Mode Select Unit (MSU) located on the P5 aft overhead panel is not illuminated.

SUBTASK 34-31-00-710-005

- (7) Set the VHF NAV switch on the instrument switching module to the BOTH ON 1 position.
  - (a) Make sure the message EFIS MODE/NAV FREQ DISAGREE does not show on the captain's and the first officer's displays.

**| AKS 001-013, 015-018, 020-025**

SUBTASK 34-31-00-710-030

- (8) Set a frequency of 108.0 MHz on the captain's navigation control panel.

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AKS ALL

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**AKS 001-013, 015-018, 020-025 (Continued)**

- (a) Make sure the message EFIS MODE/NAV FREQ DISAGREE shows on the captain's and the first officer's displays.

**AKS ALL**

SUBTASK 34-31-00-710-007

- (9) Set the VHF NAV switch on the instrument switching module to the BOTH ON 2 position.
  - (a) Make sure the message EFIS MODE/NAV FREQ DISAGREE does not show on the captain's and the first officer's displays.

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-31-00-710-026

- (10) Set a frequency of 108.0 MHz on the first officer's navigation control panels.
  - (a) Make sure the message EFIS MODE/NAV FREQ DISAGREE shows on the captain's and the first officer's displays.

**AKS ALL**

SUBTASK 34-31-00-860-007

- (11) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

SUBTASK 34-31-00-860-008

- (12) Set the SOURCE switch on the instrument switching module to the ALL ON 1 position.

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-31-00-710-027

- (13) Set a frequency of 108.1 MHz on the captain's navigation control panel.

SUBTASK 34-31-00-710-028

- (14) Set a frequency of 109.75 MHz on the first officer's navigation control panel.
  - (a) Make sure 108.1 MHz shows on the captain's display.
  - (b) Make sure 109.75 MHz shows on the first officer's display.

SUBTASK 34-31-00-710-029

- (15) Set the SOURCE switch on the instrument switching module to the ALL ON 2 position.
  - (a) Make sure 108.1 MHz shows on the captain's display.
  - (b) Make sure 109.75 MHz shows on the first officer's display.

**AKS 014, 019, 026-999**

SUBTASK 34-31-00-710-025

- (16) Set the SOURCE switch on the instrument switching module to the ALL ON 2 position.
  - (a) Make sure 108.1 MHz shows on the captain's display.
  - (b) Make sure GLS 21000 shows on the first officer's display.

**AKS ALL**

SUBTASK 34-31-00-860-010

- (17) Set the SOURCE switch on the instrument switching module to the AUTO position.

———— END OF TASK ————

EFFECTIVITY  
**AKS ALL**

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**TASK 34-31-00-730-801**

**3. Instrument Landing System - System Test**

**A. References**

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**C. Location Zones**

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

**D. Prepare for the System Test**

SUBTASK 34-31-00-710-011

- (1) Do these steps to prepare for the system test:

- (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
- (b) Set the SOURCE switch on the instrument switching module to the AUTO position.
- (c) Set the mode selector on the captain's and the first officer's EFIS control panel to the APP position.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- (d) Push the approach mode selector (APP) button on the Integrated Standby Flight Display (ISFD) until APP is displayed on the ISFD screen.

**AKS ALL**

- (e) Set the captain's and the first officer's course select controls on the mode control panel (MCP) to the same course as the airplane heading.
- (f) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.



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**E. Operational Test**

SUBTASK 34-31-00-710-012

- (1) Do this task: Instrument Landing System - Operational Test, TASK 34-31-00-710-801.

**F. Audio Out and Audio Discrete Test**

SUBTASK 34-31-00-860-011

- (1) Set the voice range filter switch at one of the audio control panels to the R position.

SUBTASK 34-31-00-860-012

- (2) Push the receiver volume control for NAV-1 on the same audio control panel to set the volume to on.

SUBTASK 34-31-00-860-013

- (3) Turn the receiver volume control clockwise for NAV-1 to make sure you can hear sound through the flight interphone system.

SUBTASK 34-31-00-710-013

- (4) Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the forward localizer antenna.

SUBTASK 34-31-00-730-001

- (5) Use the NAV/COMM ramp test set, COM-1913, to supply an ILS localizer signal that follows to the tail (VOR) antenna:

**Table 501/34-31-00-993-801**

OUTPUT LEVEL	-15 dBm
DEFLECTION	Right 1 Dot (0.0775 DDM)
FREQUENCY	108.1 MHz
IDENT TONE	ON
(a)	Make sure you can hear an ILS tone over the flight interphone system.

SUBTASK 34-31-00-730-002

- (6) Set a frequency of 111.95 MHz on the captain's navigation control panel.

- (a) Make sure you cannot hear an ILS tone over the flight interphone system.

SUBTASK 34-31-00-860-014

- (7) Push the receiver volume control for NAV-2 on the same audio control panel to set the volume to on.

SUBTASK 34-31-00-860-015

- (8) Turn the receiver volume control clockwise for NAV-2 to make sure you can hear sound through the flight interphone system.

SUBTASK 34-31-00-730-003

- (9) Set a frequency of 108.1 MHz on the first officer's navigation control panel.

- (a) Make sure you can hear an ILS tone over the flight interphone system.

**G. Localizer Antenna and Antenna Switch Test**

SUBTASK 34-31-00-860-016

- (1) Make sure the F/D switches on the DFCS mode control panel are in the OFF position.

SUBTASK 34-31-00-730-004

- (2) Set a frequency of 108.1 MHz on the captain's navigation control panel.



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- (a) Make sure the localizer deviation bars on the captain's and the first officer's displays show one dot right.

SUBTASK 34-31-00-860-017

- (3) Slowly decrease the RF level on the NAV/COMM ramp test set, COM-1913, until the localizer deviation bars on the captain's and the first officer's displays do not show.

SUBTASK 34-31-00-860-018

- (4) Set the F/D switches on the DFCS mode control panel to the ON position.

SUBTASK 34-31-00-730-005

- (5) Push the APP switch on the DFCS mode control panel.  
(a) Make sure the localizer deviation bars on the captain's and the first officer's displays show one dot right.

SUBTASK 34-31-00-860-019

- (6) Set the F/D switches on the DFCS mode control panel to the OFF position.

## H. Glideslope Antenna Test

SUBTASK 34-31-00-730-006

- (1) Use the NAV/COMM ramp test set, COM-1913, to supply an ILS glideslope signal that follows to the nose antenna:

**Table 502/34-31-00-993-802**

OUTPUT LEVEL	-15 dBm
DEFLECTION	Down 1 Dot (0.0875 DDM)
FREQUENCY	334.7 MHz
(a)	Make sure the glideslope deviation pointers on the captain's and the first officer's displays show one dot down.

SUBTASK 34-31-00-860-020

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

———— END OF TASK ————



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ILS GLIDE SLOPE ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the ILS glide slope antenna
  - (2) An installation of the ILS glide slope antenna.
- B. The ILS glideslope antenna is in the nose radome.

**TASK 34-31-21-000-801**

**2. ILS Glide Slope Antenna Removal**

(Figure 401)

**A. References**

Reference	Title
53-52-00-000-801	Nose Radome Removal (P/B 401)
53-52-31-000-801	Glide Slope Director Bar Removal (P/B 401)
53-52-31-400-801	Glide Slope Director Bar Installation (P/B 401)

**B. Location Zones**

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

**C. Removal Procedure**

SUBTASK 34-31-21-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-21-860-002

**WARNING:** DO NOT OPERATE THE WEATHER RADAR SYSTEM WHILE YOU REMOVE THE GLIDE SLOPE ANTENNA. IF THE WEATHER RADAR OPERATES, INJURY TO PERSONS CAN OCCUR.

- (2) Open the nose radome to get access to the ILS glide slope antenna [1] (TASK 53-52-00-000-801).

SUBTASK 34-31-21-860-003

- (3) Make sure the antenna director bar is not damaged.

**NOTE:** The antenna director bar is a 13-inch continuous strip of aluminum foil tape. The strip is installed horizontally across the centerline on the inner surface of the nose radome.

- (a) If the antenna director bar is damaged, it must be replaced.

These are the tasks:

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Glide Slope Director Bar Removal, TASK 53-52-31-000-801,  
Glide Slope Director Bar Installation, TASK 53-52-31-400-801.

SUBTASK 34-31-21-020-001

- (4) Remove the ILS glide slope antenna [1].
  - (a) Remove the screws [2] that attach the ILS glide slope antenna [1] to the airplane structure.
  - (b) Pull the ILS glide slope antenna [1] assembly away from the airplane structure to get access to the electrical connectors [3].
  - (c) Disconnect the electrical connectors [3].
  - (d) Put protective covers on the electrical connectors [3].
  - (e) Remove the ILS glide slope antenna [1].

———— END OF TASK ————

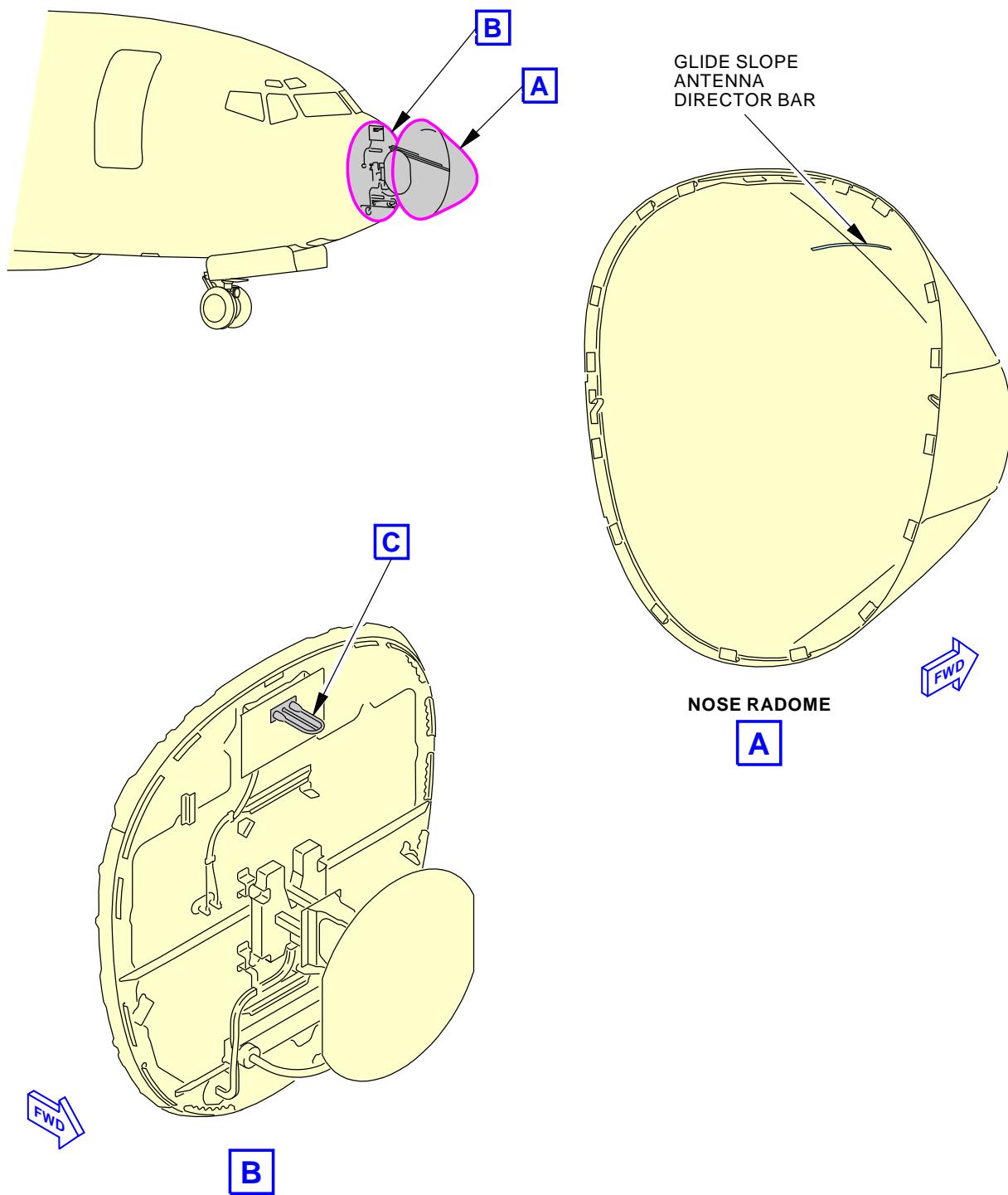
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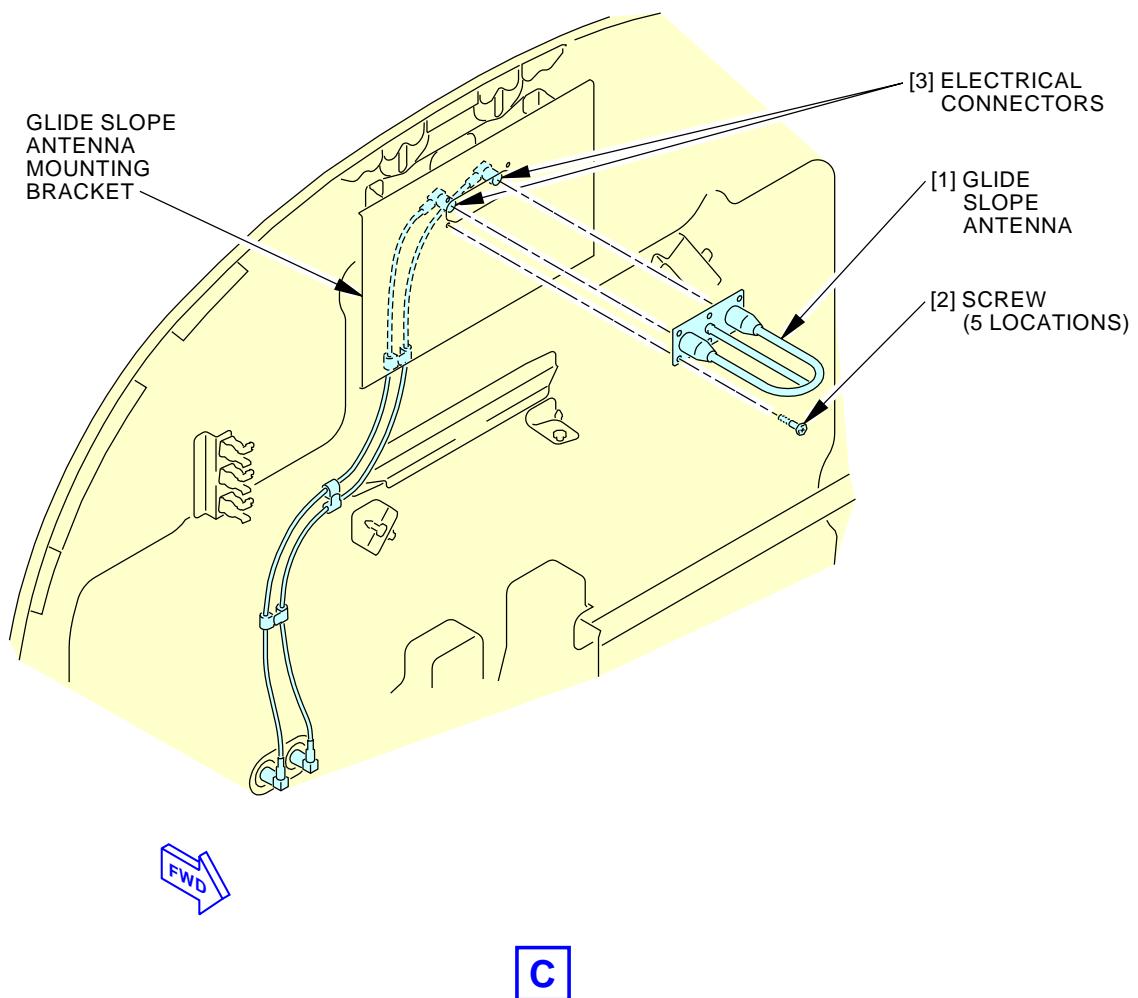
Glide Slope Antenna Installation  
Figure 401/34-31-21-990-801 (Sheet 1 of 2)

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Glide Slope Antenna Installation  
Figure 401/34-31-21-990-801 (Sheet 2 of 2)

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**TASK 34-31-21-400-801**

**3. ILS Glide Slope Antenna Installation**

(Figure 401)

**A. General**

- (1) The installation task has an installation test. The installation test makes sure that the ILS glide slope antenna operates correctly.

**B. References**

Reference	Title
20-10-34-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
53-52-00-000-801	Nose Radome Removal (P/B 401)
53-52-00-400-801	Nose Radome Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**D. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00083	Solvent - VM&P Naphthas	ASTM D-3735 Type III
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A



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**E. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Glide slope antenna	34-31-21-01-005	AKS ALL

**F. Location Zones**

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

**G. Installation Procedure**

SUBTASK 34-31-21-860-004

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-21-860-005

**WARNING:** DO NOT OPERATE THE WEATHER RADAR SYSTEM WHILE YOU INSTALL THE GLIDE SLOPE ANTENNA. IF THE WEATHER RADAR OPERATES, INJURY TO PERSONS CAN OCCUR.

- (2) Open the nose radome to get access to the ILS glide slope antenna [1] (TASK 53-52-00-000-801).

SUBTASK 34-31-21-100-001

- (3) Clean the mating surfaces of the ILS glide slope antenna [1] and the airplane structure. To clean the mating surfaces, do this task: Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-34-110-802.
  - (a) Apply solvent, B00083 to the mating surfaces of the ILS glide slope antenna [1] and the airplane structure with a cotton wiper, G00034.
  - (b) Use a cotton wiper, G00034 and clean the mating surfaces again.
  - (c) Do these two steps until the mating surfaces are bright, clean and dry.

SUBTASK 34-31-21-620-001

- (4) If the airplane surface has corrosion or other damage, do these steps to prepare the airplane mating surface:
  - (a) Apply a layer of coating, Alodine 1200 to the airplane mating surface. To apply the coating, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.
  - (b) Apply a layer of primer, C00259, to the screw holes.
  - (c) Allow the primer, C00259, to dry before you install the screws [2].

SUBTASK 34-31-21-420-001

- (5) Install the ILS glide slope antenna [1]:
  - (a) Remove the protective covers from the electrical connectors [3].

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- (b) Apply sealant, A00247 to the threads of the screws [2].
- (c) Connect the electrical connectors [3] to the ILS glide slope antenna [1].
- (d) Align the ILS glide slope antenna [1] to the screw holes that hold the ILS glide slope antenna [1] to the airplane structure.
- (e) Install the screws [2] that attach the ILS glide slope antenna [1] to the airplane structure.

SUBTASK 34-31-21-760-001

- (6) Do a check of the resistance between the ILS glide slope antenna [1] and the airplane structure with a intrinsically safe approved bonding meter, COM-1550.
  - (a) Make sure the resistance is not more than 0.001 ohms.

SUBTASK 34-31-21-410-001

- (7) Close the nose radome (TASK 53-52-00-400-801).

SUBTASK 34-31-21-860-007

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

**H. Glide Slope Antenna Installation Test**

SUBTASK 34-31-21-710-001

- (1) Do these steps to prepare for the installation test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the SOURCE switch on the instrument switching module to the AUTO position.
  - (c) Set the mode selector on the captain's and the first officer's EFIS control panel to the APP position.
  - (d) Set the captain's and the first officer's course select controls on the DFCS mode control panel to the same course as the airplane heading.
  - (e) Set a ILS frequency of 108.10 MHz on the captain's and the first officer's navigation control panels by:
    - 1) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
    - 2) Pushing the number "108.10" using the NCP keypad.
    - 3) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.
  - (f) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-31-21-860-008

- (2) Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the glide slope antenna.

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AKS ALL

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SUBTASK 34-31-21-710-002

- (3) Use the NAV/COMM ramp test set, COM-1913, to supply an ILS glide slope signal that follows to the nose antenna:

**Table 401/34-31-21-993-801**

OUTPUT LEVEL	-60 dBm
DEFLECTION	Down 1 Dot (0.0875 DDM)
FREQUENCY	334.7 MHz

- (a) Make sure the glide slope deviation pointers on the captain's and the first officer's displays show one dot down.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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LOCALIZER ANTENNA - REMOVAL/INSTALLATION

1. **General**

- A. This procedure has these tasks:
  - (1) A removal of the localizer antenna
  - (2) An installation of the localizer antenna.
- B. The localizer antenna is in the nose radome.

**TASK 34-31-31-000-801**

2. **Localizer Antenna Removal**

(Figure 401)

A. **References**

Reference	Title
53-52-00-010-802	Nose Radome - Open (P/B 201)

B. **Location Zones**

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

C. **Removal Procedure**

SUBTASK 34-31-31-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-31-860-002

**WARNING:** DO NOT OPERATE THE WEATHER RADAR SYSTEM WHILE YOU REMOVE THE LOCALIZER ANTENNA. IF THE WEATHER RADAR OPERATES, INJURY TO PERSONS CAN OCCUR.

- (2) Open the nose radome to get access to the localizer antenna [1] (Nose Radome - Open, TASK 53-52-00-010-802).

SUBTASK 34-31-31-020-001

- (3) Remove the localizer antenna [1].
  - (a) Remove the screws [2] that attach the localizer antenna [1] to the airplane structure.
  - (b) Pull the localizer antenna [1] away from the airplane structure to get access to the electrical connectors [3].
  - (c) Disconnect the electrical connectors [3].
  - (d) Remove the localizer antenna [1].

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AKS ALL

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- (e) Put protective covers on the electrical connectors [3].

———— END OF TASK ——

———— EFFECTIVITY ——  
AKS ALL

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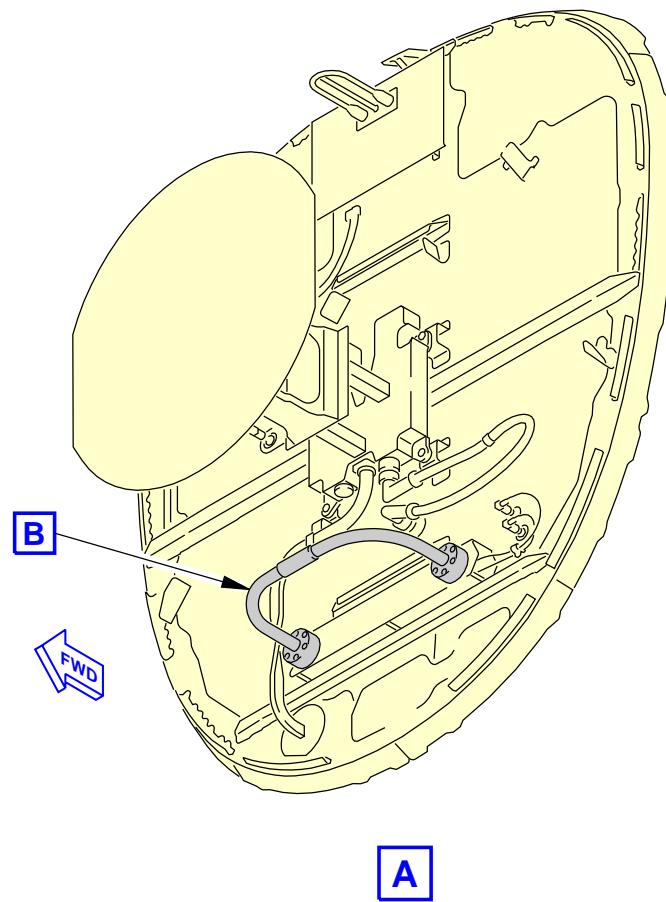
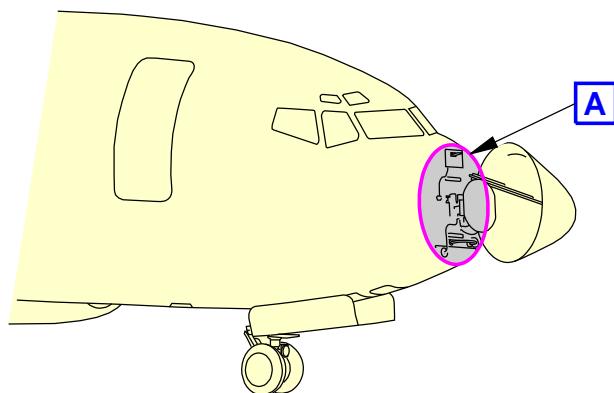
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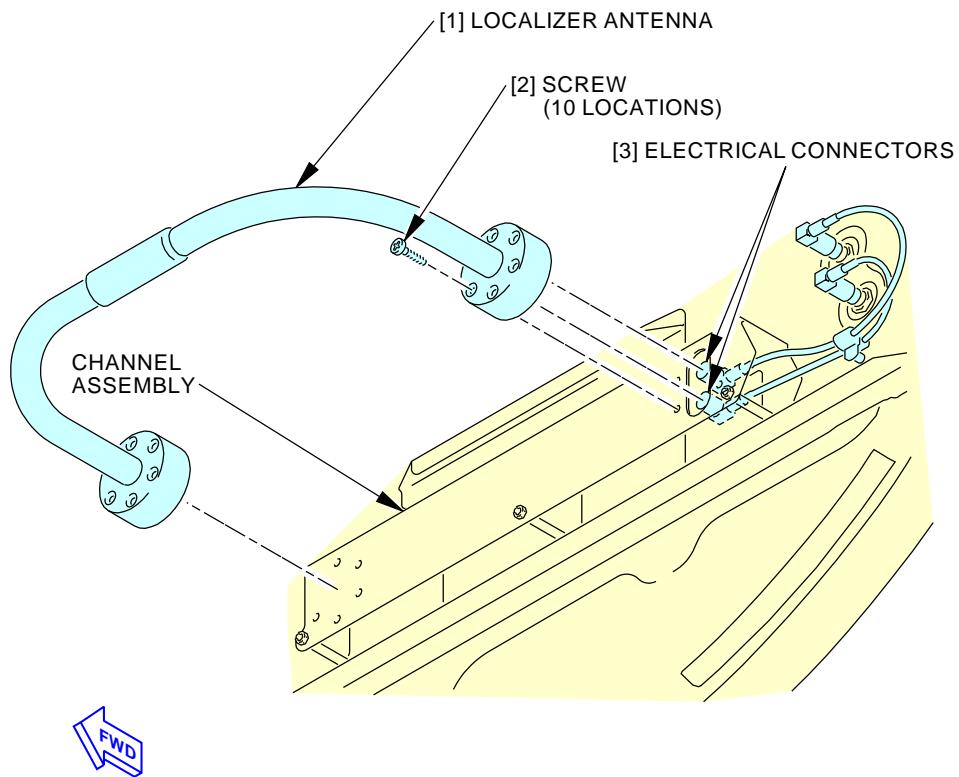


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Localizer Antenna Installation  
Figure 401/34-31-31-990-801 (Sheet 1 of 2)

EFFECTIVITY  
AKS ALL

**34-31-31**



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**Localizer Antenna Installation**  
Figure 401/34-31-31-990-801 (Sheet 2 of 2)

EFFECTIVITY  
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**TASK 34-31-31-400-801**

**3. Localizer Antenna Installation**

(Figure 401)

**A. General**

- (1) The installation task has an installation test that makes sure the localizer antenna operates correctly.

**B. References**

Reference	Title
20-10-34-110-802	Clean Bare, Clad, or Plated Metal with Solvent (P/B 701)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
53-52-00-010-802	Nose Radome - Open (P/B 201)
53-52-00-410-802	Nose Radome - Close (P/B 201)

**C. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**D. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00083	Solvent - VM&P Naphthas	ASTM D-3735 Type III
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

EFFECTIVITY	AKS ALL
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**E. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Localizer antenna	34-31-31-01-005	AKS ALL

**F. Location Zones**

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

**G. Installation Procedure**

SUBTASK 34-31-31-860-003

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-31-860-004

**WARNING:** DO NOT OPERATE THE WEATHER RADAR SYSTEM WHILE YOU INSTALL THE LOCALIZER ANTENNA. IF THE WEATHER RADAR OPERATES, INJURY TO PERSONS CAN OCCUR.

- (2) Open the nose radome to get access to the localizer antenna [1] (Nose Radome - Open, TASK 53-52-00-010-802).

SUBTASK 34-31-31-100-001

- (3) Clean the mating surfaces of the localizer antenna [1] and the airplane structure. To clean the mating surfaces, do this task: Clean Bare, Clad, or Plated Metal with Solvent, TASK 20-10-34-110-802.
  - (a) Apply solvent, B00083 to the mating surfaces of the localizer antenna [1] and the airplane structure with a cotton wiper, G00034.
  - (b) Use a clean cotton wiper, G00034, and clean the mating surfaces again.
  - (c) Do these two steps until the mating surfaces are bright, clean and dry.

SUBTASK 34-31-31-620-001

- (4) If the airplane surface has corrosion or other damage, do these steps to prepare the airplane mating surface:
  - (a) Apply a layer of coating, Alodine 1200 to the airplane mating surface. To apply the coating, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.
  - (b) Apply a layer of primer, C00259 to the screw holes.
  - (c) Allow the primer, C00259 to dry before you install the screws [2].

SUBTASK 34-31-31-420-001

- (5) Install the localizer antenna [1]:
  - (a) Remove the protective covers from the electrical connectors [3].

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AKS ALL

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- (b) Apply sealant, A00247, to the threads of the screws [2].
- (c) Connect the electrical connectors [3] to the localizer antenna [1].
- (d) Align the localizer antenna [1] to the screw holes that hold the localizer antenna [1] to the airplane structure.
- (e) Install the screws [2] that attach the localizer antenna [1] to the airplane structure.
- (f) Tighten the screws to  $80 \pm 8$  in-lb (92  $\pm 9$  kg-cm).

SUBTASK 34-31-31-760-001

- (6) Measure resistance between the localizer antenna [1] and the airplane structure with a intrinsically safe approved bonding meter, COM-1550.
  - (a) Make sure the resistance is not more than 0.001 ohms.

SUBTASK 34-31-31-410-001

- (7) Close the nose radome (Nose Radome - Close, TASK 53-52-00-410-802).

SUBTASK 34-31-31-860-006

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

## H. Localizer Antenna Installation Test

SUBTASK 34-31-31-710-001

- (1) Do these steps to prepare for the installation test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the SOURCE switch on the instrument switching module to the AUTO position.
  - (c) Set the mode selector on the captain's and the first officer's EFIS control panel to the APP position.
  - (d) Set the captain's and the first officer's course select controls on the DFCS mode control panel to the same course as the airplane heading.
  - (e) Set a ILS frequency of 108.10 MHz on the captain's and the first officer's navigation control panels by:
    - 1) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
    - 2) Pushing the number "108.10" using the NCP keypad.
    - 3) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.
  - (f) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.



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SUBTASK 34-31-31-860-007

- (2) Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the localizer antenna.

SUBTASK 34-31-31-860-008

- (3) Set the F/D switches on the DFCS mode control panel to the ON position.

SUBTASK 34-31-31-860-009

- (4) Push the APP switch on the DFCS mode control panel.

SUBTASK 34-31-31-710-002

- (5) Use the NAV/COMM ramp test set, COM-1913, to supply an ILS localizer signal to the localizer antenna:

**Table 401/34-31-31-993-801**

OUTPUT LEVEL	-60 dBm
DEFLECTION	Right 1 Dot (0.0775 DDM)
FREQUENCY	108.1 MHz

- (a) Make sure the localizer deviation bars on the captain's and the first officer's displays show one dot right.

SUBTASK 34-31-31-860-010

- (6) Set the F/D switches on the DFCS mode control panel to the OFF position.

SUBTASK 34-31-31-840-001

- (7) Remove the NAV/COMM ramp test set, COM-1913.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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RECEIVER FOR ILS - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the receiver for ILS.
  - (2) An installation and an installation test of the receiver for ILS.
- B. The receiver for ILS is the multi-mode receiver (MMR).
- C. The receivers for ILS are in the main equipment center. The No. 1 receiver is on the E1 electronics equipment rack, shelf No. 2. The No. 2 receiver is on the E1 electronics equipment rack, shelf No. 4.

**TASK 34-31-42-000-801**

**2. Receiver for ILS - Removal**

(Figure 401)

**A. References**

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

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

**C. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**D. Removal Procedure**

SUBTASK 34-31-42-860-006

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-42-010-001

- (2) Open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

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SUBTASK 34-31-42-020-001

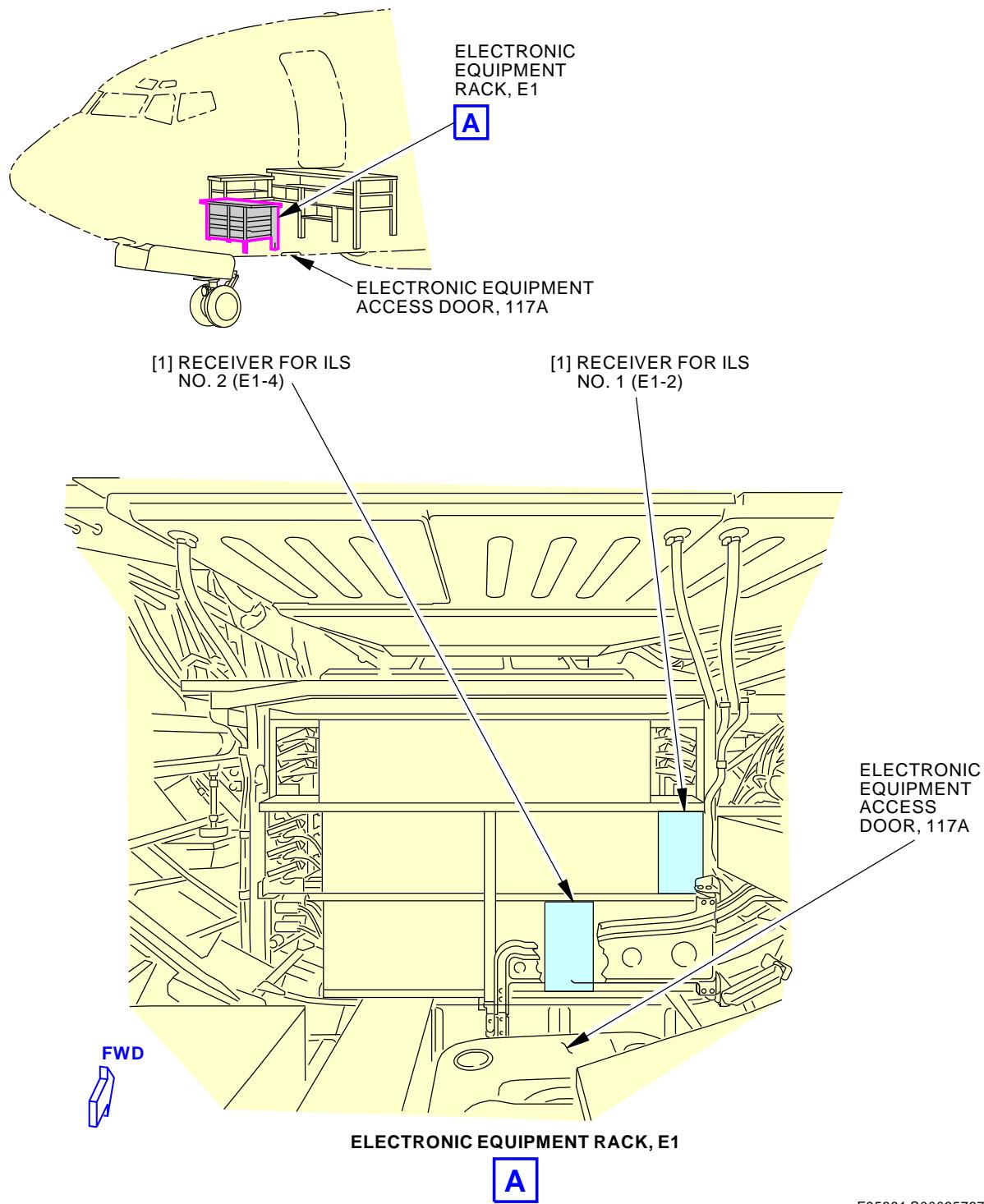
**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE RECEIVER FOR ILS. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE RECEIVER FOR ILS.

- (3) To remove the No. 1 or No. 2 Receiver for ILS [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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**Receiver for ILS Installation**  
**Figure 401/34-31-42-990-801**

EFFECTIVITY  
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**TASK 34-31-42-400-801**

**3. Receiver for ILS - Installation**

(Figure 401)

**A. References**

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
34-58-00-710-802	Global Positioning System - Operational Test (P/B 501)

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Receiver for ILS	34-31-42-02-006	AKS ALL

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Installation Procedure**

SUBTASK 34-31-42-860-007

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-42-420-001

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

- (2) To install the Receiver for ILS [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.



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SUBTASK 34-31-42-860-008

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-31-42-410-001

- (4) Close this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

**F. Installation Test**

SUBTASK 34-31-42-860-004

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

SUBTASK 34-31-42-710-002

- (2) Do these steps to prepare for the installation test:

- Set the VHF NAV switch on the instrument switching module to the NORMAL position.
- Set the SOURCE switch on the instrument switching module to the AUTO position.
- Set the mode selector on the captain's and the first officer's EFIS control panel to the APP position.

**AKS ALL; AIRPLANES WITH THE INTEGRATED STANDBY FLIGHT DISPLAY**

- (d) Push the approach mode selector (APP) button on the Integrated Standby Flight Display (ISFD) until APP is displayed on the ISFD screen.

**AKS ALL**

- (e) Set the captain's and the first officer's course select controls on the DFCS mode control panel to the same course as the airplane heading.

**AKS 001-013, 015-018, 020-025**

- (f) Set a ILS frequency of 108.1 MHz on the captain's and the first officer's navigation control panels by:

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY display window. Then push the TFR button. The frequency will show in the ACTIVE display window.

**AKS 014, 019, 026-999**

- (g) Set a ILS frequency of 108.1 MHz on the captain's and the first officer's navigation control panels by:

- Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
- Pushing the number "108.10" using the NCP keypad.



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**AKS 014, 019, 026-999 (Continued)**

- 3) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.

**AKS ALL**

- (h) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-31-42-710-003

- (3) Do these steps to do an installation test of the No. 1 (captain's) receiver for ILS:

- (a) Push and release the TEST button on the captain's navigation control panel.

- 1) Make sure that these indications show on the captain's display:

NOTE: It takes approximately 16 to 44 seconds for the test sequence to complete.

- a) The LOC and G/S flags show momentarily.
    - b) The glideslope deviation pointer shows one dot up and the localizer deviation bar shows one dot left.
    - c) The glideslope deviation pointer shows one dot down and the localizer deviation bar shows one dot right.

SUBTASK 34-31-42-710-004

- (4) Do these steps to do an installation test of the No. 2 (first officer's) receiver for ILS:

- (a) Push and release the TEST button on the first officer's navigation control panel.

- 1) Make sure that these indications show on the first officer's display:

NOTE: It takes approximately 16 to 44 seconds for the test sequence to complete.

- a) The LOC and G/S flags show momentarily.
    - b) The glideslope deviation pointer shows one dot up and the localizer deviation bar shows one dot left.
    - c) The glideslope deviation pointer shows one dot down and the localizer deviation bar shows one dot right.

**AKS ALL; AIRPLANES WITH COLLINS MULTI-MODE RECEIVERS**

SUBTASK 34-31-42-860-009

- (5) Push and release the TEST switch on the front panel of the receiver to start the BITE test.

- (a) Make sure that these indications occur:

- 1) All the red lights come on.
    - 2) The LRU STATUS light changes to green after 2 seconds.
    - 3) All the lights go off after 2 seconds.
    - 4) The green LRU STATUS light comes on and stays on for about 30 seconds.

**AKS ALL**

SUBTASK 34-31-42-860-012

- (6) Do this task: Global Positioning System - Operational Test, TASK 34-58-00-710-802.

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SUBTASK 34-31-42-860-005

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

———— END OF TASK ——

EFFECTIVITY  
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NAVIGATION CONTROL PANEL - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the navigation control panel.
  - (2) An installation of the navigation control panel.
- B. The captain's and first officer's navigation control panels are on the aft electronics panel, P8, in the flight compartment.

**TASK 34-31-52-000-801**

**2. Navigation Control Panel Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-31-52-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-31-52-860-002

- (2) On the aft electronics panel, P8, turn the knob of the PANEL control to the OFF position.

SUBTASK 34-31-52-020-001

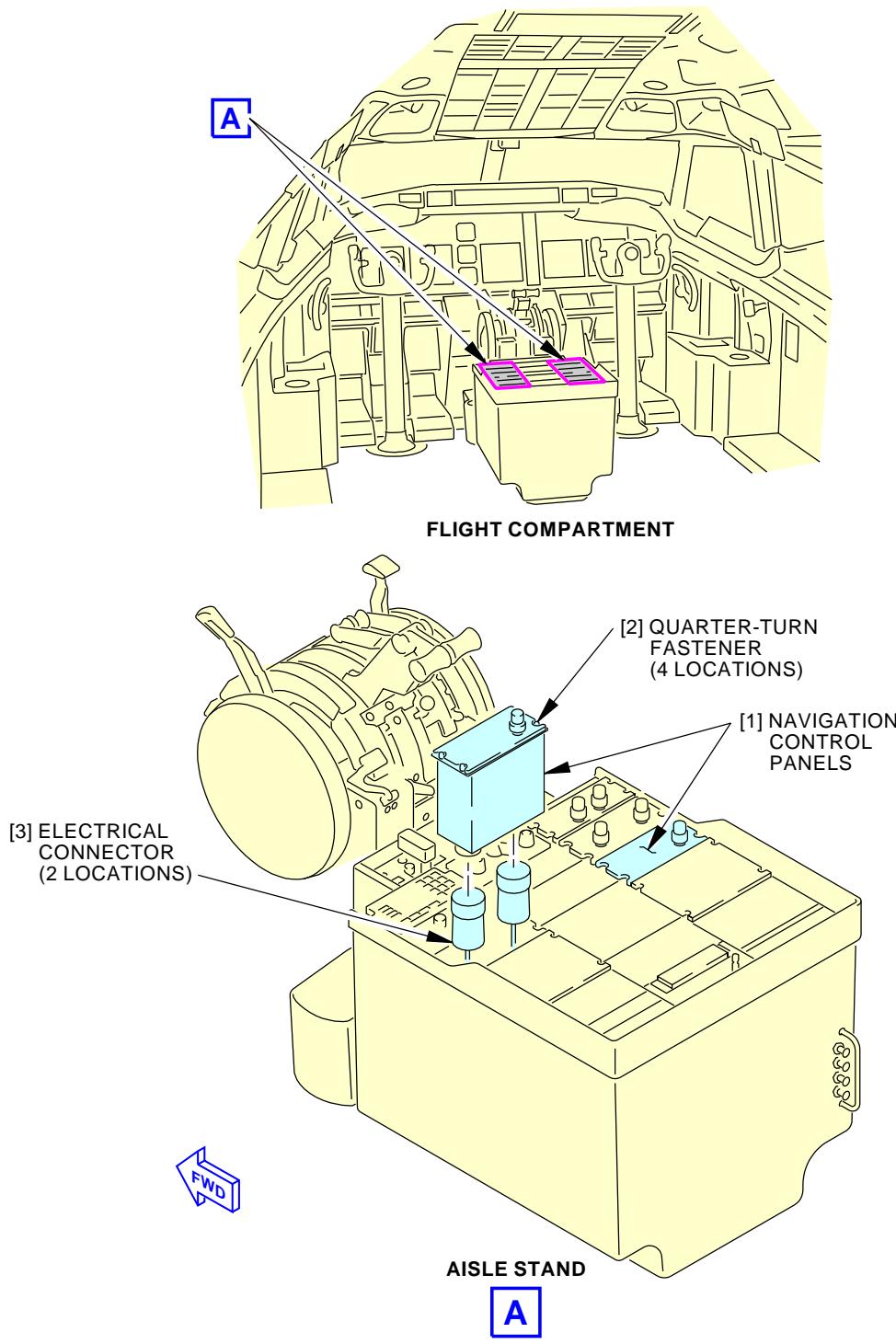
**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE NAVIGATION CONTROL PANEL. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE NAVIGATION CONTROL PANEL.

- (3) Remove the NAVIGATION CONTROL PANEL [1]:
  - (a) Loosen the four quarter-turn fasteners [2].
  - (b) Carefully lift the NAVIGATION CONTROL PANEL [1] from the aft electronics panel, P8, to get access to the electrical connectors [3].
  - (c) Disconnect the electrical connectors [3].
  - (d) Put protective covers on the electrical connectors [3].

———— END OF TASK ————

EFFECTIVITY  
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**34-31-52**



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**Navigation Control Panel Installation**  
Figure 401/34-31-52-990-801

EFFECTIVITY  
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**TASK 34-31-52-400-801**

**3. Navigation Control Panel Installation**

(Figure 401)

**A. References**

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

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	NAVIGATION CONTROL PANEL	34-31-52-04D-025	AKS ALL

**C. Location Zones**

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

**D. Installation Procedure**

SUBTASK 34-31-52-860-003

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-31-52-420-001

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

- (2) Install the NAVIGATION CONTROL PANEL [1]:
- Remove the protective covers from the electrical connectors [3].
  - Examine the electrical connectors [3] for bent or broken pins, dirt, and damage.
  - Connect the electrical connectors [3].
  - Put the NAVIGATION CONTROL PANEL [1] in its position on the aft electronics panel, P8.
  - Tighten the four quarter-turn fasteners [2].



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SUBTASK 34-31-52-860-004

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

**E. Installation Test**

SUBTASK 34-31-52-860-005

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

SUBTASK 34-31-52-860-007

- (2) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

SUBTASK 34-31-52-860-009

- (3) Set the mode selector on the captain's and the first officer's EFIS control panels to the VOR position.

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-31-52-710-001

- (4) Set a frequency of 108.00 MHz on the captain's and the first officer's NAVIGATION CONTROL PANELS [1].

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY display window. Then push the TFR button. The frequency will show in the ACTIVE display window.

- (a) Make sure 108.00 MHz shows on the displays.

**AKS 014, 019, 026-999**

SUBTASK 34-31-52-710-003

- (5) Set a VOR frequency of 108.00 MHz on the captain's and the first officer's NAVIGATION CONTROL PANELS [1] by:

- Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
- Pushing the number "108.00" using the NCP keypad.
- Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.

- 1) Make sure 108.00 MHz shows on the displays.

**AKS ALL**

SUBTASK 34-31-52-710-002

- (6) Set a frequency of 115.00 MHz on the captain's and the first officer's NAVIGATION CONTROL PANELS [1].

- (a) Make sure 115.00 MHz shows on the displays.



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SUBTASK 34-31-52-860-008

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

———— END OF TASK ——

EFFECTIVITY  
AKS ALL

**34-31-52**



737-600/700/800/900  
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RF POWER DIVIDER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of a RF power divider.
  - (2) An installation of a RF power divider.
- B. The No. 1 and No. 2 RF power dividers are on the E1 electronic equipment rack in the main equipment center.

**TASK 34-31-62-000-801**

**2. RF Power Divider Removal**

(Figure 401)

**A. Location Zones**

<b>Zone</b>	<b>Area</b>
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Access Panels**

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

**C. Removal Procedure**

SUBTASK 34-31-62-010-001

- (1) To get access to the RF power divider [3], open this access panel:

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

SUBTASK 34-31-62-020-001

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

- (2) Remove the RF power DIVIDER [3]:

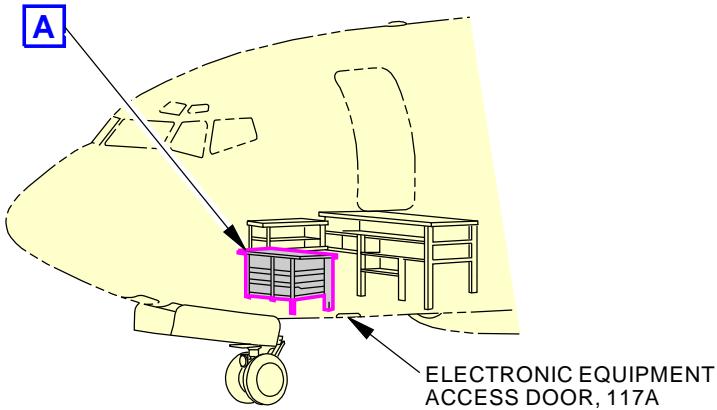
- (a) Disconnect the coaxial connectors [4].
- (b) Remove the screws [1] and washers [2] that attach the RF power DIVIDER [3] to the electronic equipment rack.
- (c) Remove the RF power DIVIDER [3] from the electronic equipment rack.

———— END OF TASK ————



**34-31-62**

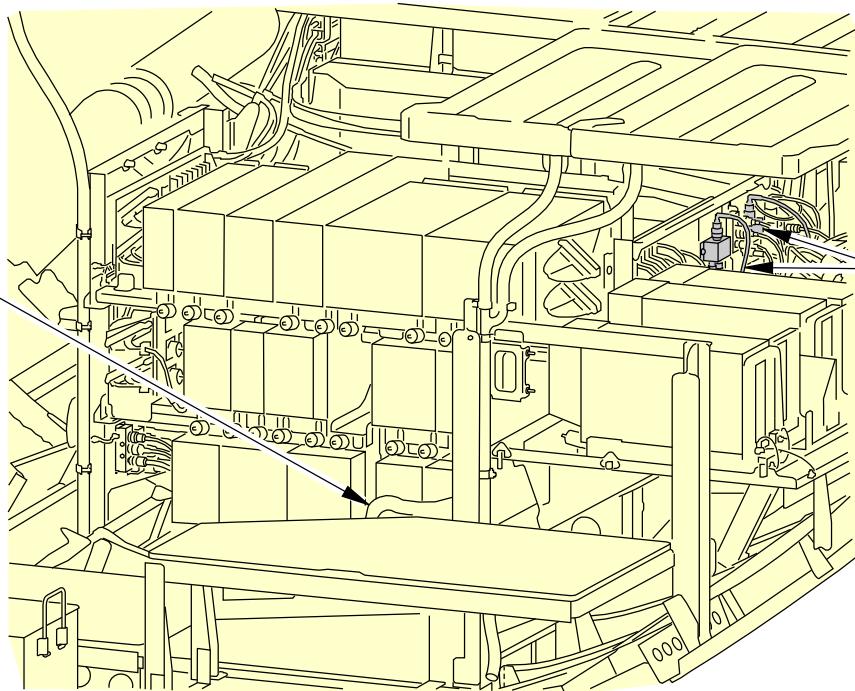
ELECTRONIC EQUIPMENT RACK, E1 AND E5



ELECTRONIC EQUIPMENT ACCESS DOOR, 117A

RF POWER DIVIDERS  
**B**

FWD



ELECTRONIC EQUIPMENT RACKS, E1 AND E5

**A**

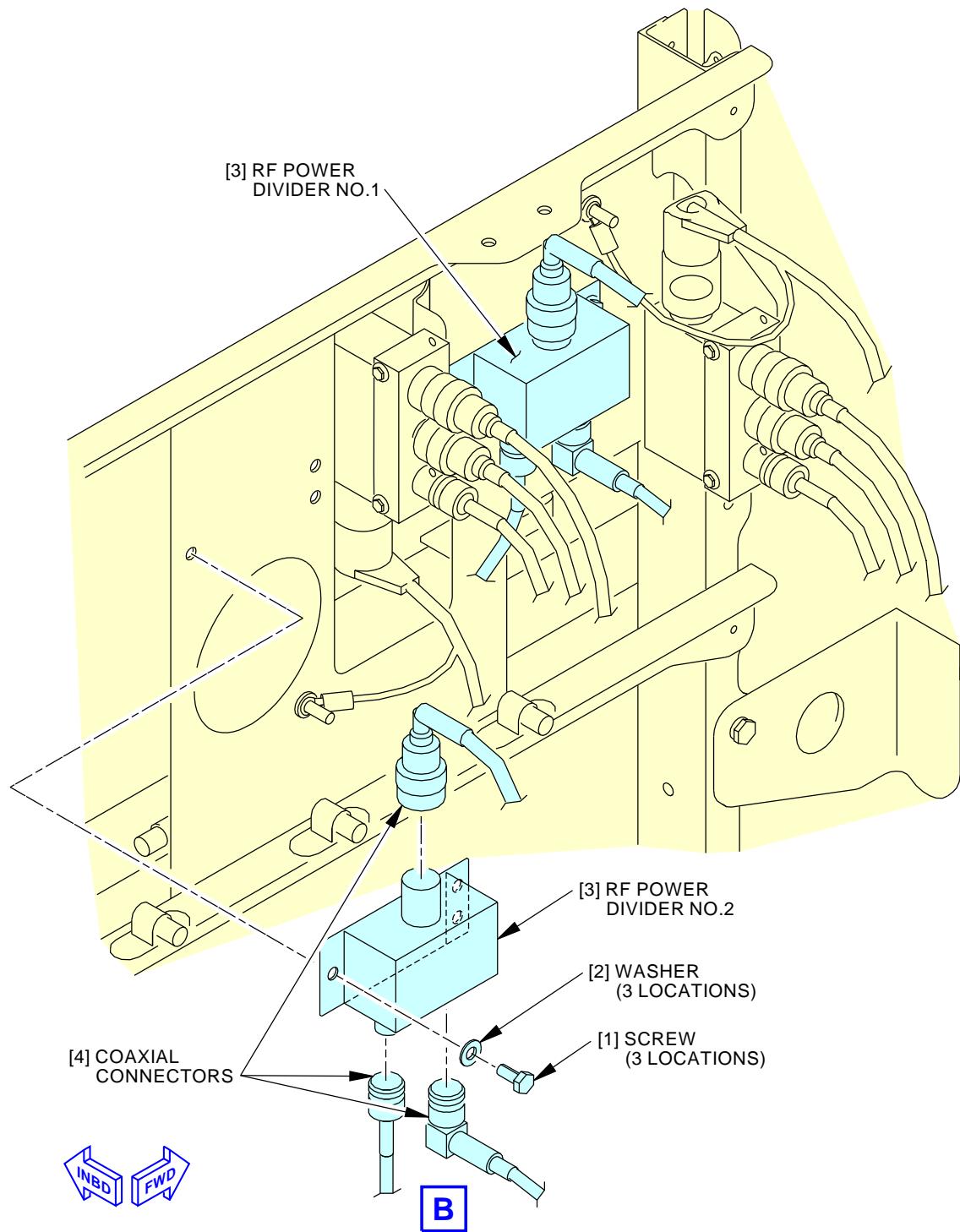
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**RF Power Divider Installation**  
Figure 401/34-31-62-990-801 (Sheet 1 of 2)

EFFECTIVITY  
AKS ALL

**34-31-62**

D633A101-AKS



G33104 S0006576741\_V2

**RF Power Divider Installation**  
**Figure 401/34-31-62-990-801 (Sheet 2 of 2)**

EFFECTIVITY  
AKS ALL

**34-31-62**

D633A101-AKS



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AIRCRAFT MAINTENANCE MANUAL

**TASK 34-31-62-400-801**

**3. RF Power Divider Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**C. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	DIVIDER	34-31-62-02-005	AKS ALL

**D. Location Zones**

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

**E. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**F. Installation Procedure**

SUBTASK 34-31-62-420-001

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

(1) Install the RF power DIVIDER [3]:

- (a) Align the RF power DIVIDER [3] to the holes in the electronic equipment rack.
- (b) Install the screws [1] and washers [2] that attach the RF power DIVIDER [3] to the electronic equipment rack.

EFFECTIVITY
AKS ALL

**34-31-62**



**737-600/700/800/900**  
**AIRCRAFT MAINTENANCE MANUAL**

- (c) Connect the coaxial connectors [4] to the RF power DIVIDER [3].

SUBTASK 34-31-62-410-001

- (2) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

**G. Installation Test**

SUBTASK 34-31-62-860-001

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

SUBTASK 34-31-62-860-002

- (2) Do these steps to prepare for the installation test:

- (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
- (b) Set the SOURCE switch on the instrument switching module to the AUTO position.
- (c) Set the mode selector on the captain's and first officer's EFIS control panels to the APP position.
- (d) Set the captain's and first officer's course select controls on the AFCS mode control panel to the same course as the airplane heading.
- (e) Set a ILS frequency of 108.10 MHz on the captain's and the first officer's navigation control panels by:
  - 1) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
  - 2) Pushing the number "108.10" using the NCP keypad.
  - 3) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.
- (f) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-31-62-710-001

- (3) Do these steps to do an installation test of the No. 1 (captain's) RF power divider:

- (a) Make sure the F/D switches on the AFCS mode control panel are in the OFF position.
- (b) Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the forward localizer antenna.
- (c) Use the NAV/COMM ramp test set, COM-1913, to supply an ILS localizer signal that follows to the tail (VOR) antenna:

**Table 401/34-31-62-993-801**

OUTPUT LEVEL	-15 dBm
DEFLECTION	Right 1 Dot (0.0775 DDM)
FREQUENCY	108.1 MHz

- 1) Make sure the localizer deviation bar on the captain's display is one dot right.
- (d) Set the mode selector on the captain's EFIS control panel to the VOR position.
- (e) Set a frequency of 108.0 MHz on the captain's navigation control panel.



**34-31-62**



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- (f) Use the NAV/COMM ramp test set, COM-1913, to supply a VOR signal that follows to the tail (VOR) antenna:

**Table 402/34-31-62-993-802**

OUTPUT LEVEL	-60 dBm
BEARING	50 degrees
TO/FROM	TO
FREQUENCY	108.0 MHz

- (g) Make sure the No. 1 bearing pointer on the captain's and the first officer's RDMI shows 50 degrees.

SUBTASK 34-31-62-710-002

- (4) Do these steps to do an installation test of the No. 2 (first officer's) RF power divider:
- Make sure the F/D switches on the AFCS mode control panel are in the OFF position.
  - Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the forward localizer antenna.
  - Use the NAV/COMM ramp test set, COM-1913, to supply an ILS localizer signal that follows to the tail (VOR) antenna:

**Table 403/34-31-62-993-803**

OUTPUT LEVEL	-15 dBm
DEFLECTION	Right 1 Dot (0.0775 DDM)
FREQUENCY	108.1 MHz
	1) Make sure the localizer deviation bar on the captain's display is one dot right.
(d)	Set the mode selector on the first officer's EFIS control panel to the VOR position.
(e)	Set a frequency of 108.0 MHz on the first officer's navigation control panel.
(f)	Use the NAV/COMM ramp test set, COM-1913, to supply a VOR signal that follows to the tail (VOR) antenna:

**Table 404/34-31-62-993-804**

OUTPUT LEVEL	-60 dBm
BEARING	50 degrees
TO/FROM	TO
FREQUENCY	108.0 MHz
(g)	Make sure the No. 2 bearing pointer on the captain's and the first officer's RDMI shows 50 degrees.

SUBTASK 34-31-62-860-003

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

———— END OF TASK ————



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LOCALIZER ANTENNA SWITCH - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of a localizer antenna switch.
  - (2) An installation of a localizer antenna switch.
- B. The No. 1 and No. 2 localizer antenna switches are on the E1 electronic equipment rack in the main equipment center.

**TASK 34-31-72-000-801**

**2. Localizer Antenna Switch Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Access Panels**

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

**C. Removal Procedure**

SUBTASK 34-31-72-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2

SUBTASK 34-31-72-010-001

- (2) To get access to the localizer antenna switch [3], open this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-31-72-020-001

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

- (3) Remove the localizer antenna SWITCH [3]:

(a) Disconnect the coaxial connectors [4].

(b) Remove the screws [1] and washers [2] that attach the localizer antenna SWITCH [3] to the electronic equipment rack.

EFFECTIVITY  
AKS ALL

**34-31-72**



**737-600/700/800/900**  
**AIRCRAFT MAINTENANCE MANUAL**

- (c) Remove the localizer antenna SWITCH [3] from the electronic equipment rack.

———— END OF TASK ——

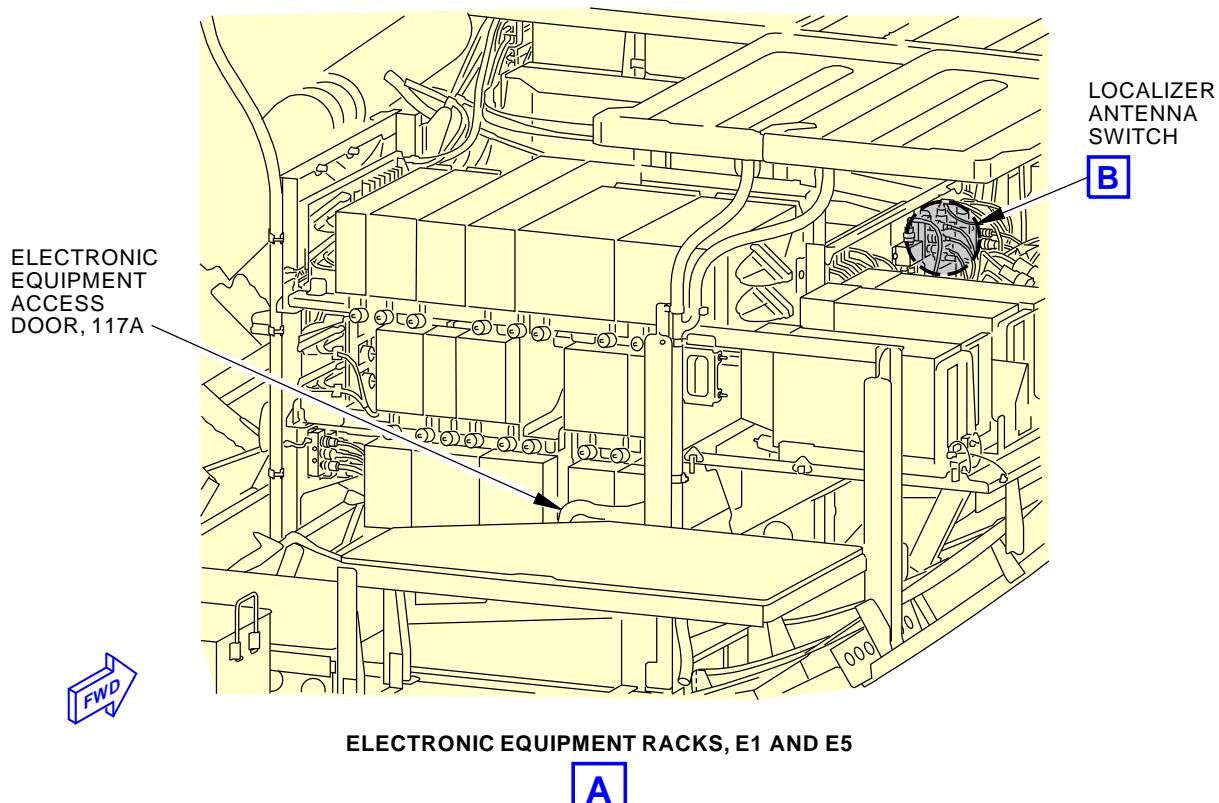
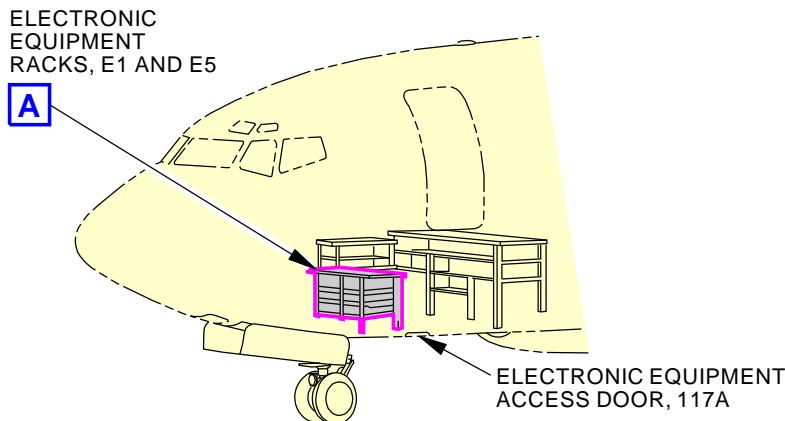
———— EFFECTIVITY ——  
AKS ALL

**34-31-72**

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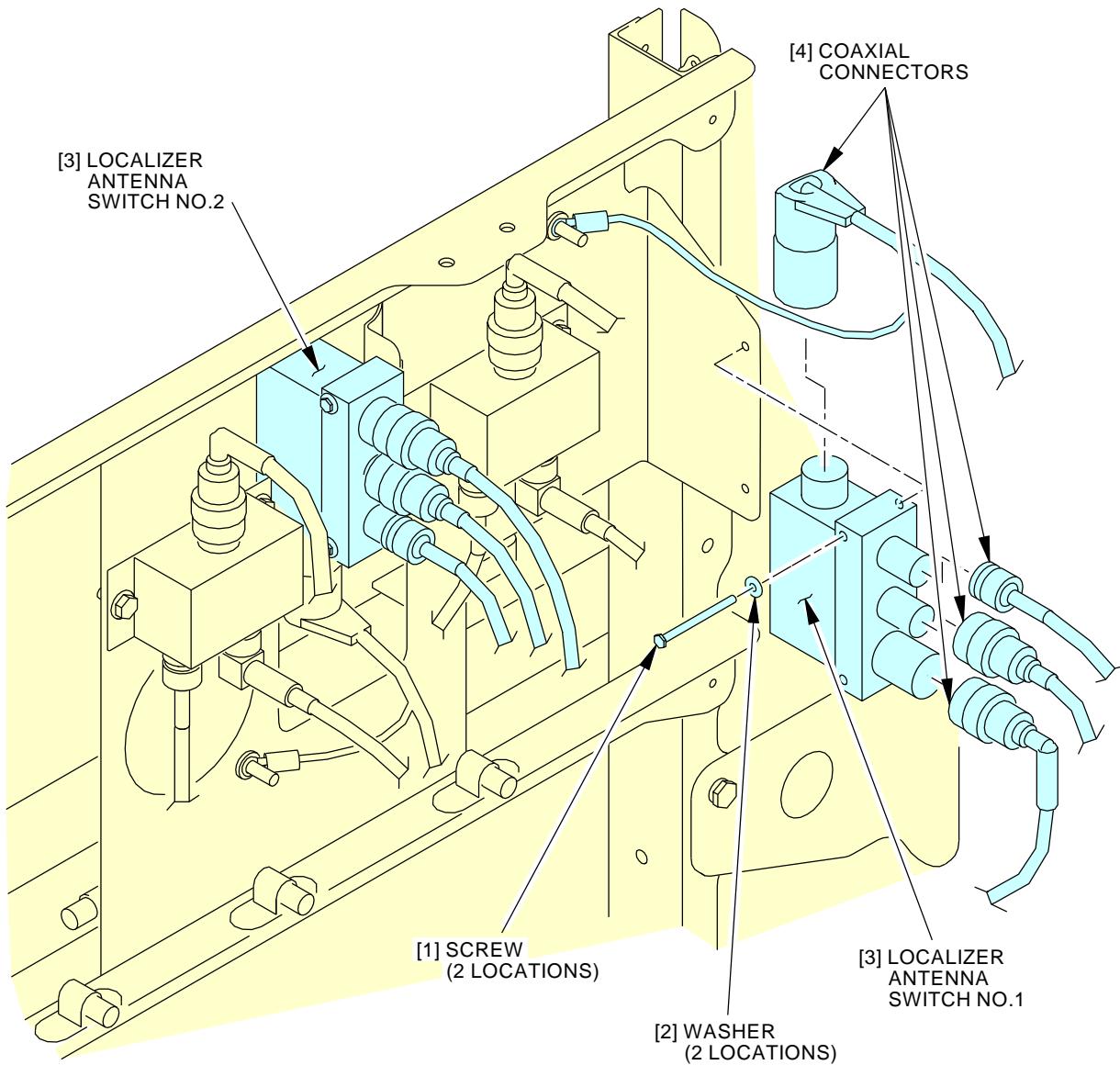
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**Localizer Antenna Switch Installation**  
Figure 401/34-31-72-990-801 (Sheet 1 of 2)

EFFECTIVITY  
AKS ALL

D633A101-AKS

**34-31-72**


**B**

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**Localizer Antenna Switch Installation**  
**Figure 401/34-31-72-990-801 (Sheet 2 of 2)**

EFFECTIVITY  
AKS ALL

**34-31-72**



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**TASK 34-31-72-400-801**

**3. Localizer Antenna Switch Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**C. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	SWITCH	34-31-72-01-005	AKS ALL

**D. Location Zones**

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

**E. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**F. Installation Procedure**

SUBTASK 34-31-72-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2

EFFECTIVITY
AKS ALL

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SUBTASK 34-31-72-420-001

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

- (2) Install the localizer antenna SWITCH [3]:
  - (a) Align the localizer antenna SWITCH [3] to the holes in the electronic equipment rack.
  - (b) Install the screws [1] and washers [2] that attach the localizer antenna SWITCH [3] to the electronic equipment rack.
  - (c) Connect the coaxial connectors [4] to the localizer antenna SWITCH [3].

SUBTASK 34-31-72-860-003

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2

SUBTASK 34-31-72-410-001

- (4) Close this access panel:

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

**G. Installation Test**

SUBTASK 34-31-72-860-004

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

SUBTASK 34-31-72-860-005

- (2) Do these steps to prepare for the installation test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the SOURCE switch on the instrument switching module to the AUTO position.
  - (c) Set the mode selector on the captain's and first officer's EFIS control panels to the APP position.
  - (d) Set the captain's and first officer's course select controls on the AFCS mode control panel to the same course as the airplane heading.
  - (e) Set a ILS frequency of 108.10 MHz on the captain's and the first officer's navigation control panels by:
    - 1) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
    - 2) Pushing the number "108.10" using the NCP keypad.
    - 3) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.



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- (f) Make sure the air data inertial reference unit (ADIRU) is aligned and in the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-31-72-710-001

- (3) Do these steps to do an installation test of the No. 1 (captain's) localizer antenna switch:
- Make sure the F/D switches on the AFCS mode control panel are in the OFF position.
  - Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the forward localizer antenna.
  - Use the NAV/COMM ramp test set, COM-1913, to supply an ILS localizer signal that follows to the tail (VOR) antenna:

**Table 401/34-31-72-993-801**

OUTPUT LEVEL	-15 dBm
DEFLECTION	Right 1 Dot (0.0775 DDM)
FREQUENCY	108.1 MHz

- 1) Make sure the localizer deviation bar on the captain's display is one dot right.
- Slowly decrease the RF level on the NAV/COMM ramp test set, COM-1913, until the localizer deviation bar on the captain's display does not show.
- Set the F/D switches on the AFCS mode control panel to the ON position.
- Push the APP switch on the AFCS mode control panel.
  - 1) Make sure the localizer deviation bar on the captain's display is one dot right.
- Set the F/D switches on the AFCS mode control panel to the OFF position.

SUBTASK 34-31-72-710-002

- (4) Do these steps to do an installation test of the No. 2 (first officer's) localizer antenna switch:
- Make sure the F/D switches on the AFCS mode control panel are in the OFF position.
  - Put the NAV/COMM ramp test set, COM-1913, near the front of the airplane and a minimum of 6 feet from the forward localizer antenna.
  - Use the NAV/COMM ramp test set, COM-1913, to supply an ILS localizer signal that follows to the tail (VOR) antenna:

**Table 402/34-31-72-993-802**

OUTPUT LEVEL	-15 dBm
DEFLECTION	Right 1 Dot (0.0775 DDM)
FREQUENCY	108.1 MHz

- 1) Make sure the localizer deviation bar on the first officer's display is one dot right.
- Slowly decrease the RF level on the NAV/COMM ramp test set, COM-1913, until the localizer deviation bar on the first officer's display does not show.
- Set the F/D switches on the AFCS mode control panel to the ON position.
- Push the APP switch on the AFCS mode control panel.
  - 1) Make sure the localizer deviation bar on the first officer's display is one dot right.
- Set the F/D switches on the AFCS mode control panel to the OFF position.

EFFECTIVITY  
AKS ALL

**34-31-72**



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SUBTASK 34-31-72-860-006

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

———— END OF TASK ——

EFFECTIVITY  
AKS ALL

**34-31-72**



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AIRCRAFT MAINTENANCE MANUAL

MARKER BEACON SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Marker Beacon System Deactivation.
  - (2) Marker Beacon System Activation.

**TASK 34-32-00-040-801**

**2. Marker Beacon System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power to the Marker Beacon system.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
100	Lower Half of Fuselage
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-32-00-860-016

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**D. Marker Beacon System - Tryout**

NOTE: This tryout is to make sure the Marker Beacon system is in a zero energy state.

SUBTASK 34-32-00-860-017

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

SUBTASK 34-32-00-710-003

- (2) Push and release the TEST button on the captain's navigation control panel.
  - (a) Make sure the marker beacon indication on the captain's and the first officer's displays are blank.

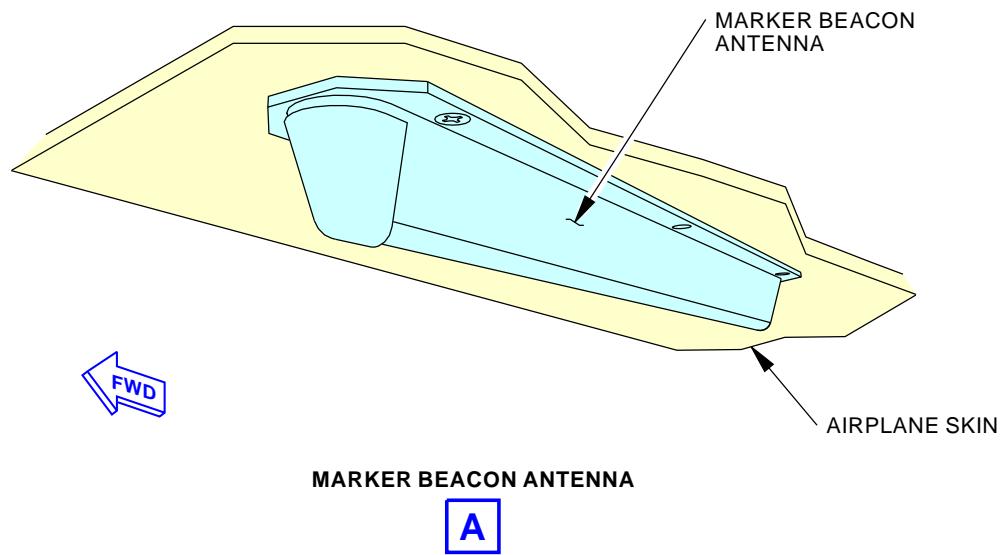
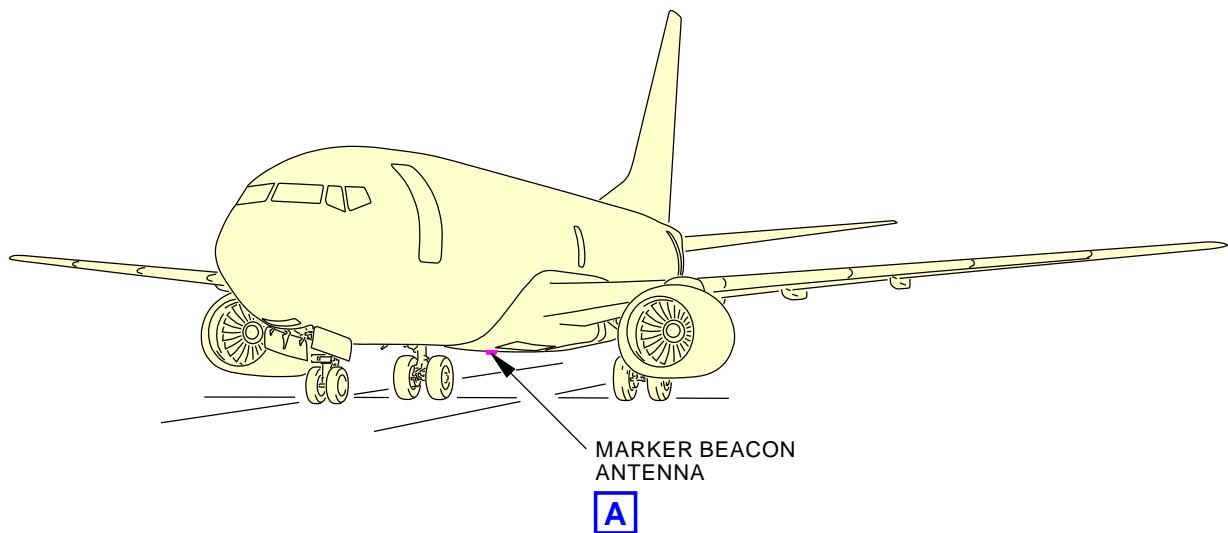
———— END OF TASK ————



**34-32-00**



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**Marker Beacon**  
Figure 201/34-32-00-990-801

EFFECTIVITY  
AKS ALL

**34-32-00**

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**TASK 34-32-00-440-801**

**3. Marker Beacon System - Activation**

Figure 201

**A. General**

- (1) This procedure adds electrical power to the Marker Beacon system.

**B. Location Zones**

Zone	Area
100	Lower Half of Fuselage
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-32-00-860-018

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-32-00**



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MARKER BEACON SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
- (1) An operational test of the marker beacon system.
  - (2) A system test of the marker beacon system.

**TASK 34-32-00-710-801**

**2. Marker Beacon System - Operational Test**

**A. References**

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

**B. Location Zones**

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

**C. Prepare for the Operational Test**

SUBTASK 34-32-00-860-001

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

SUBTASK 34-32-00-860-002

- (2) Do these steps to prepare for the operational test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the mode selector on the captain's and the first officer's EFIS control panel to the VOR position.
  - (c) Set the SOURCE switch on the instrument switching module to the AUTO position.

**D. Marker Beacon Receiver Self Test**

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-32-00-860-003

- (1) Set a frequency of 108.00 MHz on the captain's navigation control panel.

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY display window. Then push the TFR button. The frequency will show in the ACTIVE display window.

**AKS 014, 019, 026-999**

SUBTASK 34-32-00-860-015

- (2) Set a VOR frequency of 108.00 MHz on the captain's and the first officer's Navigation Control Panel.
  - (a) Push the MODE key (V or reverse V) until "VOR" shows in the STBY (lower) window of the NCP.
  - (b) Push the number "108.00" using the NCP keypad.
  - (c) Push the ACT/STBY transfer key until "VOR 108.00" shows in the ACT (upper) window on the NCP.



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**AKS 014, 019, 026-999 (Continued)**

- 1) Make sure that 108.00 MHz shows on the displays.

**AKS ALL**

SUBTASK 34-32-00-860-020

- (3) Select marker beacon audio on at least one of the Audio Control Panels (ACPs) to hear the audio tones.

**NOTE:** All the marker beacon audio tones come on in the flight compartment when you do the test. The audio tones come on continuously and you hear the outer, middle, and inner at the same time.

SUBTASK 34-32-00-710-001

- (4) Push and release the TEST button on the captain's navigation control panel.

- (a) Make sure that in approximately 3 seconds, the marker beacon indication on the captain's and the first officer's displays shows "FT".

**NOTE:** The "FT" indication can show on either the PFD, or on the primary EFIS depending on your airplane configuration.

- (b) Make sure that in approximately 5 seconds, the "FT" indication does not show.

SUBTASK 34-32-00-860-014

- (5) Put the airplane back to its usual condition.

SUBTASK 34-32-00-860-004

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

———— END OF TASK ————

**TASK 34-32-00-730-801**

**3. Marker Beacon System - System Test**

**A. References**

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

**B. Tools/Equipment**

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

Reference	Description
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**C. Location Zones**

Zone	Area
211	Flight Compartment - Left

EFFECTIVITY  
**AKS ALL**

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(Continued)

Zone	Area
212	Flight Compartment - Right

#### D. Prepare for the System Test

SUBTASK 34-32-00-860-005

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

SUBTASK 34-32-00-860-006

- (2) Do these steps to prepare for the system test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the mode selector on the captain's and the first officer's EFIS control panel to the VOR position.
  - (c) Set the SOURCE switch on the instrument switching module to the AUTO position.

#### E. Operational Test

SUBTASK 34-32-00-710-002

- (1) Do this task: Marker Beacon System - Operational Test, TASK 34-32-00-710-801.

#### F. Marker Beacon Operation Test

SUBTASK 34-32-00-860-007

- (1) Push the receiver volume controls for marker beacon, MKR, on each audio selector panel to set the volume to off.

SUBTASK 34-32-00-730-001

- (2) Set up the NAV/COMM ramp test set, COM-1913, to supply a marker beacon signal of 75 MHz with a 400 Hz modulation.

NOTE: If the antenna on the test set is not a marker beacon test antenna tuned at 75 MHz, it is not easy to get the test results. Put the test set near the marker beacon antenna and at approximately the same height as the marker beacon antenna.

- (a) Make sure the outer marker indication, OM, shows on the captain's and the first officer's EFIS displays.

SUBTASK 34-32-00-860-008

- (3) Push the receiver volume control for marker beacon, MKR, on the captain's audio control panel to set the volume to on.

SUBTASK 34-32-00-730-002

- (4) Turn the receiver volume control clockwise for marker beacon, MKR, on the captain's audio control panel.

- (a) Make sure you can hear a tone through the interphone system.

- (b) Make sure you can hear a tone at the captain's audio selector panel with a headset.

SUBTASK 34-32-00-860-009

- (5) Push the receiver volume control for marker beacon, MKR, on the captain's audio selector panel to set the volume to off.

SUBTASK 34-32-00-860-010

- (6) Push the receiver volume control for marker beacon, MKR, on the first officer's audio control panel to set the volume to on.



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SUBTASK 34-32-00-730-003

- (7) Turn the receiver volume control clockwise for marker beacon, MKR, on the first officer's audio control panel.
  - (a) Make sure you can hear a tone through the interphone system.
  - (b) Make sure you can hear a tone at the first officer's audio selector panel with a headset.

SUBTASK 34-32-00-860-011

- (8) Push the receiver volume control for marker beacon, MKR, on the first officer's audio selector panel to set the volume to off.

SUBTASK 34-32-00-730-004

- (9) Use the NAV/COMM ramp test set, COM-1913, to supply a marker beacon signal of 75 MHz with a 1300 Hz modulation.
  - (a) Make sure the middle marker indication, MM, shows on the captain's and the first officer's EFIS displays.

SUBTASK 34-32-00-730-005

- (10) Use the NAV/COMM ramp test set, COM-1913, to supply a marker beacon signal of 75 MHz with a 3000 Hz modulation.
  - (a) Make sure the inner marker indication, IM, shows on the captain's and the first officer's EFIS displays.

SUBTASK 34-32-00-860-012

- (11) Put the Airplane back to its usual condition.
  - (a) Remove the NAV/COMM ramp test set, COM-1913
  - (b) Do this task: Remove Electrical Power: Remove Electrical Power, TASK 24-22-00-860-812

———— END OF TASK ————



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MARKER BEACON ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
- (1) A removal of the marker beacon antenna.
  - (2) An installation of the marker beacon antenna.

**TASK 34-32-11-000-801**

**2. Marker Beacon Antenna Removal**

(Figure 401)

**A. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved
	Part #: 1-6390-A Supplier: 63318
	Part #: 10810 Supplier: \$0855
	Part #: 234350 Supplier: \$0857
	Part #: 235072 Supplier: \$0857
	Part #: 235073 Supplier: \$0857
	Part #: 235074 Supplier: \$0857
	Part #: 235075 Supplier: \$0857
	Part #: 235076 Supplier: \$0857
	Part #: 235077 Supplier: \$0857
	Part #: 235078 Supplier: \$0857
	Part #: 235079 Supplier: \$0857
	Part #: 235080 Supplier: \$0857
	Part #: 235081 Supplier: \$0857
	Part #: 311 Supplier: KA861
	Part #: 411B60 Supplier: 3DN12
	Part #: 411B90 Supplier: 3DN12
	Part #: DAD5013 Supplier: \$0856
	Part #: DFD5019 Supplier: \$0856
	Part #: J5-0275-2010 Supplier: 435R8
	Part #: SCD5019 Supplier: \$0856
	Part #: ST982LF-9 Supplier: 3Z323
	Part #: TS1275-4 Supplier: 1DWR5

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
100	Lower Half of Fuselage

**C. Removal Procedure**

SUBTASK 34-32-11-860-001

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1



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SUBTASK 34-32-11-020-001

- (2) Remove the marker beacon antenna [1]:  
(a) Remove the six bolts [2] from the antenna base.

**CAUTION:** BE CAREFUL WHEN YOU USE THE SEALANT REMOVAL TOOL TO BREAK THE SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRPLANE SKIN, AND OTHER COMPONENTS.

- (b) Use force around the marker beacon antenna [1] with the sealant removal tool, COM-2481 until the seal is fully broken.

**CAUTION:** LOWER THE ANTENNA ONLY AS FAR AS NECESSARY TO DISCONNECT THE COAXIAL CONNECTOR. DAMAGE TO THE CABLE CAN OCCUR IF YOU PULL THE CABLE.

- (c) Lower the marker beacon antenna [1] until you can get access to the coaxial connector [3].  
(d) Disconnect the coaxial connector [3] from the marker beacon antenna [1].  
(e) Remove the marker beacon antenna [1].

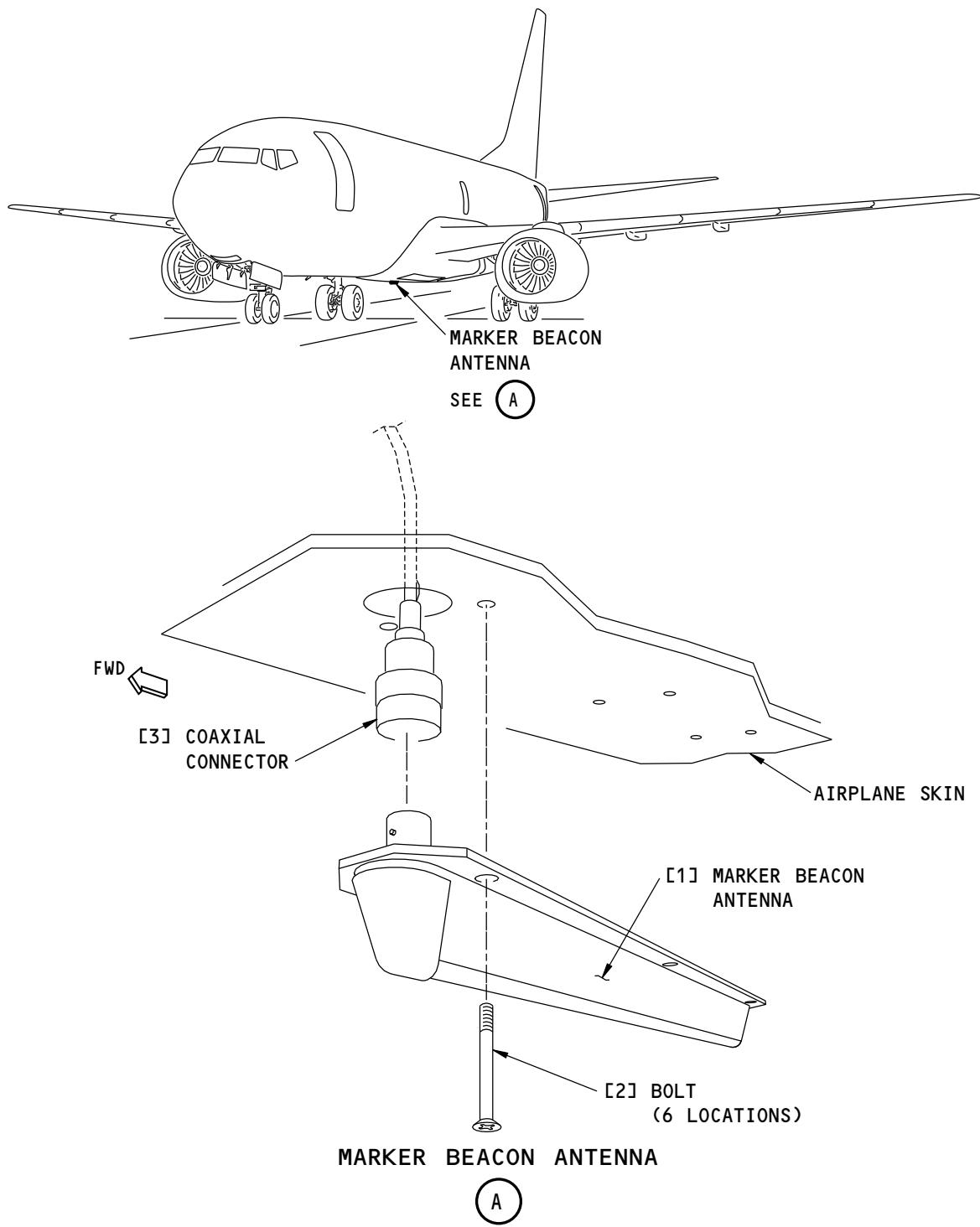
———— END OF TASK ————

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F64707 S0006576764\_V1

Marker Beacon Antenna Installation  
Figure 401/34-32-11-990-801

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**TASK 34-32-11-400-801**

**3. Marker Beacon Antenna Installation**

(Figure 401)

**A. References**

Reference	Title
20-30-88-910-801	Final Cleaning of Metal Prior to Non-structural Bonding (Series 88) (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
51-21-31-350-806	Removal and Control of Corrosion for Plated or Phosphated Surfaces (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-806	Aerodynamic Smoother Application (P/B 201)
SL 20-043	Deferred Application of Aero-Sealant in Antenna Installations

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

**C. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B01008	Solvent - Final Cleaning Of Metal Prior To Non-Structural Bonding (AMM 20-30-88/201) - Series 88	
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A



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D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Marker beacon antenna	34-32-01-01-010	AKS ALL

E. Location Zones

Zone	Area
100	Lower Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

F. Installation Procedure

SUBTASK 34-32-11-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

SUBTASK 34-32-11-100-001

- (2) Clean the airplane mating surface:

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

- (a) Clean the airplane mating surface with a cotton wiper, G00034 moistened with Series 88 solvent, B01008 (TASK 20-30-88-910-801).
- (b) Use a clean cotton wiper, G00034 and clean the airplane mating surface again.
- (c) Do these two steps above until the airplane mating surface is clean and dry.

SUBTASK 34-32-11-100-002

- (3) If the airplane surface has corrosion or other damage, do these steps to prepare the airplane mating surface:
  - (a) Remove the corrosion from the airplane mating surface. To remove the corrosion, do this task: Removal and Control of Corrosion for Plated or Phosphated Surfaces, TASK 51-21-31-350-806
  - (b) To apply a layer of coating, C00064 to the airplane mating surface, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.

SUBTASK 34-32-11-420-001

- (4) Install the marker beacon antenna [1]:
  - (a) Connect the coaxial connector [3] to the marker beacon antenna [1].
  - (b) Put the marker beacon antenna [1] in the correct position on the airplane surface.
  - (c) Install five of the six bolts [2] in the base of the marker beacon antenna [1].
  - (d) Manually tighten the bolts [2] to 25 in-lb (3 N·m) of torque.
  - (e) Measure the resistance between the baseplate of the marker beacon antenna [1] and the airplane skin with an intrinsically safe approved bonding meter, COM-1550

NOTE: Use the empty bolt hole to get access to the antenna baseplate.



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- 1) Make sure the resistance is less than 2.5 milliohms.
- (f) Install the last bolt [2], and manually tighten the bolt [2] to 25 in-lb (3 N·m) of torque.

SUBTASK 34-32-11-390-001

- (5) Apply aerodynamic sealant:

- (a) Apply an aerodynamic fillet seal around the base of the marker beacon antenna [1] with sealant, A00247 (TASK 51-31-00-390-806).

**NOTE:** Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-043).

- (b) Use the hardwood or plastic fillet smoothing spatula, STD-810 to make a smooth 45-degree fillet.
  - (c) Apply sealant, A00247 to the heads of the bolts (TASK 51-31-00-390-806).
  - (d) Let the sealant dry for the correct cure time.

SUBTASK 34-32-11-860-003

- (6) Close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

## G. Installation Test

SUBTASK 34-32-11-860-004

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

SUBTASK 34-32-11-730-001

- (2) Do this test the marker beacon antenna [1]:

- (a) Make sure the MKR controls on all the audio selector panels are off.
  - (b) Use the NAV/COMM ramp test set, COM-1913, or equivalent test set to supply a marker beacon signal of 75 MHz with a 400 Hz modulation.

**NOTE:** If the antenna on the test set is not a marker beacon test antenna tuned at 75 MHz, it is not easy to get the test results. Put the test set near the marker beacon antenna and at approximately the same height as the marker beacon.

- 1) Make sure OM shows on the captain's display unit for the outer marker beacon.

SUBTASK 34-32-11-860-011

- (3) Put the airplane back to its usual condition.

SUBTASK 34-32-11-080-001

- (4) Remove the NAV/COMM ramp test set, COM-1913 or equivalent test set.

SUBTASK 34-32-11-860-005

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

———— END OF TASK ————



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LOW RANGE RADIO ALTIMETER (LRRA) SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Low Range Radio Altimeter (LRRA) System Deactivation.
  - (2) Low Range Radio Altimeter (LRRA) System Activation.
  - (3) A simulation test of radio altitude.

**TASK 34-33-00-040-801**

**2. Low Range Radio Altimeter System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power to the LRRA System.

NOTE: There are four LRRA antennas installed on the bottom of the airplane. The No. 1 (M1737) and No. 2 (M1738) transmit antennas are the outer antennas. The No. 1 (M1739) and the No. 2 (M1740) receive antennas are the inner antennas.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

NOTE: For airplanes with predictive wind shear weather radar systems, open the weather radar (WXR) transceiver circuit breaker to make sure that the WXR system does not come on. The radio altimeter supplies radio altitude data to the WXR transceiver. The WXR transceiver uses the radio altitude data to turn the WXR system on and off.

SUBTASK 34-33-00-860-028

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2
D	13	C00120	WEATHER RADAR RT

**D. Low Range Radio Altimeter System - Tryout**

NOTE: This tryout is to make sure the Low Range Radio Altimeter system is in a zero energy state.

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SUBTASK 34-33-00-860-029

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-33-00-710-005

- (2) Set the SOURCE switch on the instrument switching module to the AUTO position.

- (a) Make sure that captain's and first officer's EFIS displays are blank..

SUBTASK 34-33-00-710-006

- (3) Set the SOURCE switch on the instrument switching module to the ALL ON 1 position.

- (a) Make sure that captain's and first officer's EFIS displays are blank.

SUBTASK 34-33-00-710-007

- (4) Set the SOURCE switch on the instrument switching module to the ALL ON 2 position.

- (a) Make sure that captain's and first officer's EFIS displays are blank.

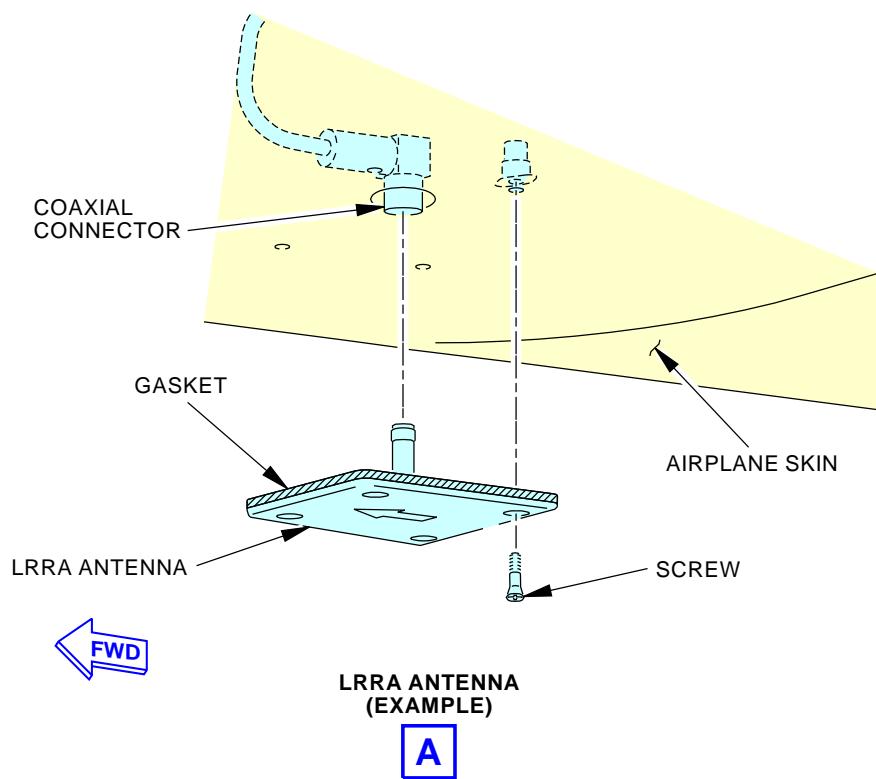
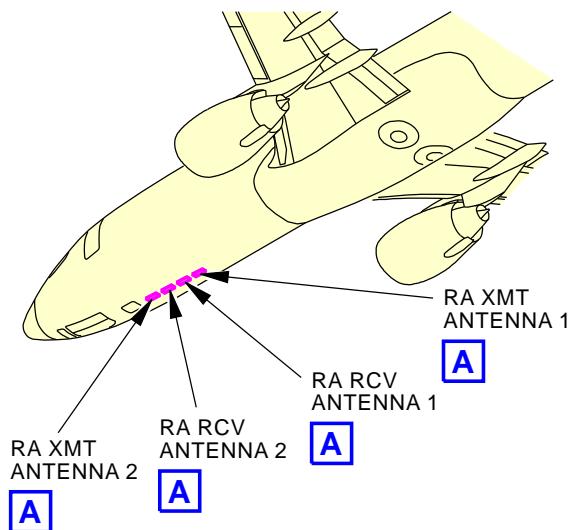
———— END OF TASK ————



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Low Range Radio Altimeter  
Figure 201/34-33-00-990-802

EFFECTIVITY  
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D633A101-AKS

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**TASK 34-33-00-440-801**

**3. Low Range Radio Altimeter System - Activation**

(Figure 201)

**A. General**

- (1) This procedure adds electrical power to the LRRA system.

**B. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-33-00-860-030

**WARNING:** KEEP ALL PERSONNEL AT A SAFE DISTANCE FROM THE ANTENNA. RF ENERGY CAN CAUSE INJURIES TO PERSONNEL.

**NOTE:** Personnel must stay at least 5 in. (0.13 m) from the antenna, while it is operating.

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2
D	13	C00120	WEATHER RADAR RT

———— END OF TASK ————

**TASK 34-33-00-700-801**

**4. Radio Altitude Simulation Test**

**A. General**

- (1) This task uses an Atlantis DRA707 Radio Altimeter (RA) test set to do a simulation test of radio altitude.

**AKS ALL; AIRPLANES WITH PREDICTIVE WINDSHEAR**

- (2) You must open the weather radar (WXR) transceiver circuit breaker to make sure that the WXR system does not come on. The radio altimeter supplies radio altitude data to the WXR transceiver. The WXR transceiver uses the radio altitude data to turn the WXR system on and off.

**AKS ALL**

EFFECTIVITY
AKS ALL

**34-33-00**



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**B. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-811	Supply Electrical Power (P/B 201)

**C. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-1922	Test Set - Radio Altimeter Part #: 110-0430-100-02 Supplier: L04V3 Part #: 110-0460-105 Supplier: L04V3 Part #: 9599-607-15902 Supplier: F0052 Opt Part #: 110-0430-100 Supplier: L04V3
COM-1929	Test Cable - Radio Altimeter Part #: 4678322A Supplier: F0052 Part #: AY969-00666-001 Supplier: L04V3 Part #: AY969-00667-001 Supplier: L04V3 Part #: AY969-00668-001 Supplier: L04V3 Opt Part #: 110-0440-101 Supplier: L04V3

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**E. Access Panels**

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

**F. Prepare for the Test**

SUBTASK 34-33-00-860-019

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

SUBTASK 34-33-00-800-002

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-33-00-010-002

- (3) To get access to the main equipment center, open this access panel:

**Number**      **Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------



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SUBTASK 34-33-00-480-002

- (4) Install the radio altimeter test set, COM-1922.
  - (a) Set the POWER switch on the radio altimeter test set, COM-1922 to OFF.
  - (b) Connect the correct test cable(s) Radio Altimeter test cable, COM-1929 between the TEST connector on the radio altimeter test set, COM-1922 and the TEST connector on the transceiver(s).

NOTE: You can do a test of each radio altimeter (No. 1 or No. 2) separately, or all together, with these test cables in the radio altimeter test set, COM-1922:

Test cable ATLANTIS P/N AY969-00666-001 use with Rockwell Collins LRA-900.

Test cable ATLANTIS P/N 110-0440-101 use with Rockwell Collins LRA-700.

Test cable ATLANTIS P/N AY969-00668-001 use with Honeywell Radio Altimeters.

Test cable ATLANTIS P/N 110-0440-106 use with TRT ERT-530 digital output radio altimeters

Test cable ATLANTIS P/N AY969-00667-001 use with ERT-550 digital output radio altimeters.

- (c) Connect the power cable to the correct primary power source shown on the front panel of the radio altimeter test set, COM-1922.

NOTE: If the batteries in the radio altimeter test set, COM-1922 have the correct charge, the connection to a primary power source is not necessary.

SUBTASK 34-33-00-860-020

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

**G. Procedure**

SUBTASK 34-33-00-860-015

- (1) Prepare the radio altimeter test set, COM-1922 for the altitude simulation:
  - (a) Set the power ON/OFF switch to the ON position.
    - 1) Make sure the 5 VDC and HOLDING lights come on.
  - (b) Set the NO COMPUTED DATA switches to the NORMAL position.
  - (c) Push and release the PRES ALT key.
    - 1) Make sure PRES ALT shows on the LEDs.
  - (d) Use the keypad to put in a value of +4000 feet.
  - (e) Push and release the ENTER key.
    - 1) Make sure the radio altitude value shown on the EFIS displays is blank.

SUBTASK 34-33-00-860-016

- (2) Prepare the captain's and the first officer's EFIS control panels for the simulation.

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- (a) Push and release the RST (reset) button.
- (b) Turn the DH control to show DH 450 at the captain's EFIS display.
- (c) Turn the DH control to show DH 400 at the first officer's EFIS display.

SUBTASK 34-33-00-860-017

- (3) Set these controls on the radio altimeter test set, COM-1922:
  - (a) Push and release the START ALT key.
    - 1) Make sure START ALT shown on the LEDs.
  - (b) Use the keypad to put in a value of +4000 feet.
  - (c) Push and release the ENTER key.
    - 1) Make sure the LEDs show START ALT +4000.
  - (d) Push and release the STOP ALT key.
    - 1) Make sure the LEDs show STOP ALT.
  - (e) Use the keypad to put in a value of -20 feet.
  - (f) Push and release the ENTER key.
    - 1) Make sure the LEDs show STOP ALT -20.
  - (g) Push and release the VERT SPD key.
    - 1) Make sure the LEDs show VERT SPD.
  - (h) Use the keypad to put in a value of -4000 (feet per minute).
  - (i) Push and release the ENTER key.
    - 1) Make sure the LEDs show VERT SPD -4000.

SUBTASK 34-33-00-730-009

- (4) Do the altitude ramp-down procedure (typical).
  - (a) Push the RAMP/HOLD key on the radio altimeter test set, COM-1922.
    - 1) Make sure the RAMPING light comes on.
  - (b) Look for these indications on the captain's and the first officer's EFIS displays.
    - 1) The radio altitude goes out of view for approximately 22.5 seconds while the altitude on the radio altimeter test set, COM-1922 decreases from 4000 to 2500 feet.
  - (c) After the time-out of 22.5 seconds (previous step), a radio altitude of 2500 feet comes into view on the EFIS displays and decreases to zero.

NOTE: The EFIS displays show the radio altitude set on the radio altimeter test set, COM-1922 within the limit of 2500 feet to -20 feet.
  - (d) Look for these indications on the captain's EFIS display when the radio altitude decreases to 450 feet:
    - 1) The DH value changes to a yellow color and flashes for 3 seconds.
    - 2) The radio altitude continues to decrease to zero.
  - (e) Look for these indications on the first officer's EFIS display when the radio altitude decreases to 400 feet:
    - 1) The DH value changes to a yellow color and flashes for 3 seconds.
    - 2) The DH value flashes for approximately 3 seconds.
    - 3) The radio altitude continues to decrease toward zero.

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- (f) Look for these indications on the EFIS displays while the radio altitude decreases to zero feet:
- 1) The radio altitude value changes to a white color.
  - 2) The DH value changes to the numbers set at the captain's and the first officer's EFIS control panels.

**H. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-33-00-860-021

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-00-080-003

- (2) Remove the radio altimeter test set, COM-1922.
- (a) Set the POWER ON/OFF switch on the radio altimeter test set, COM-1922 to the OFF position.
  - (b) Disconnect the power cable for the radio altimeter test set, COM-1922 from the primary power source (if the power cable was used).
  - (c) Disconnect the test cable(s) from the radio altimeter test set, COM-1922 and the applicable transceivers.
  - (d) Put the test cables in the box for the radio altimeter test set, COM-1922.

SUBTASK 34-33-00-410-002

- (3) Install a TEST connector protective cover on the transceiver(s).

SUBTASK 34-33-00-860-022

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

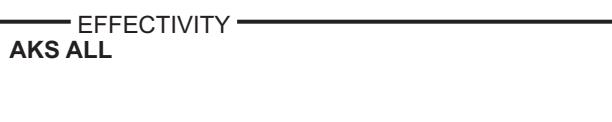
<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-33-00-410-003

- (5) Close this access panel:

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

———— END OF TASK ————



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LOW RANGE RADIO ALTIMETER (LRRA) SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
  - (1) An operational test of the low range radio altimeter (LRRA) system.
  - (2) A system test of the LRRA system.
- B. There are two radio altimeter systems installed on the airplane. Each radio altimeter system is made up of an LRRA receiver/transmitter (R/T) and two microstrip antennas. One of the antennas is a transmit antenna and one is a receive antenna.
- C. The radio altimeter system measures the altitude of the airplane in the range of -4 feet to 2,500 feet. This altitude will show on the common display system (CDS). The CDS displays radio altitude on the captain's and first officer's primary display units, on the right side of the electronic altitude director indicator (EADI).

**TASK 34-33-00-710-801**

**2. Low Range Radio Altimeter (LRRA) System - Operational Test**

**A. General**

- (1) The operational test includes a LRRA Interface To Display Electronic Unit test.
- (2) The operational test makes sure the interface between the transceiver and the displays is ok. The operational test does not include a check of the LRRA antennas.

**B. References**

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

**C. Location Zones**

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

**D. Procedure**

SUBTASK 34-33-00-860-001

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

SUBTASK 34-33-00-710-001

- (2) Set the SOURCE switch on the instrument switching module to the AUTO position.
  - (a) Make sure that  $-4 \pm 2$  feet radio altitude shows on the captain's and first officer's EFIS displays.

SUBTASK 34-33-00-710-002

- (3) Set the SOURCE switch on the instrument switching module to the ALL ON 1 position.
  - (a) Make sure that  $-4 \pm 2$  feet radio altitude shows on the captain's and first officer's EFIS displays.

SUBTASK 34-33-00-710-003

- (4) Set the SOURCE switch on the instrument switching module to the ALL ON 2 position.

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- (a) Make sure that  $-4 \pm 2$  feet radio altitude shows on the captain's and first officer's EFIS displays.

SUBTASK 34-33-00-860-002

- (5) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-33-00-860-003

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

———— END OF TASK ————

**TASK 34-33-00-730-801**

**3. Low Range Radio Altimeter (LRRA) System - System Test**

**A. General**

- (1) The system test makes sure the interface between the Air/Ground relays is ok and the transmit and receive antennas operate correctly.
- (2) The system test includes these tests:
- (a) The LRRA Air/Ground Discrete Input Test
- (b) The LRRA Antenna Coaxial Cable Test.
- 1) Interface from LRRA equipment rack connector to antenna connector.
- 2) Interface from LRRA R/T to antenna connector.

**B. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-33-21-000-801	Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal (P/B 401)
34-33-21-400-801	Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-1047	Material - RF Absorbent, Eccosorb AN74 Emerson Cumming or Equivalent Part #: 78084099 Supplier: 30817 Opt Part #: AN74 Supplier: 30817



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(Continued)

<b>Reference</b>	<b>Description</b>
COM-1793	Multimeter - Digital/Analog (or equivalent meter meets task requirements)  Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 Part #: 260-8XPI Supplier: 88277 Part #: 287 Supplier: 89536 Part #: 289 Supplier: 89536 Part #: 87V Supplier: 89536 Part #: FLUKE 27 II Supplier: 89536 Part #: FLUKE-77-4 Supplier: 89536 Opt Part #: 187 Supplier: 89536 Opt Part #: 189 Supplier: 89536 Opt Part #: 21 Supplier: 89536 Opt Part #: 77 SERIES III Supplier: 89536 Opt Part #: 87 Supplier: 89536 Opt Part #: FLUKE 27 Supplier: 89536
COM-9903	Cable - Adapter, Two Single Banana Plugs to BNC Male  Part #: 5268-C-XX Supplier: 5D6S9 Opt Part #: 2241-C-36 Supplier: 4U744
STD-1046	Detector - Crystal, Hewlett Packard HPX421A or HPX421B or Generic 1N23 Crystal Diode
STD-4050	Detector Kit - Crystal (Generic 1N23 or p/n HPX421A, HPX421B, 1N23WE, 423B use with front end adapter p/n 8817A or equivalent).

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**E. Prepare for the System Test**

SUBTASK 34-33-00-860-004

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

**F. Air/Ground Discrete Input Test**

SUBTASK 34-33-00-860-005

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-00-020-001

- (2) Remove the No. 1 and the No. 2 LRRA R/Ts. To remove them, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal, TASK 34-33-21-000-801.

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SUBTASK 34-33-00-730-001

- (3) Use a digital/analog multimeter, COM-1793 to measure the resistance between the AIR/GROUND DISCRETE, pin F4, and the IND 2 STATUS, pin F6, in connector D3667B for the No. 1 radio altimeter system.
  - (a) Make sure the digital/analog multimeter, COM-1793 shows 10 KOhms or more than 10 KOhms.

SUBTASK 34-33-00-730-002

**WARNING:** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) On the Proximity Switch Electronics Unit (PSEU), push the ON/OFF button to turn the BITE display to ON.
- (5) Push the NO button for the "EXISTING FAULTS ?" display.
- (6) Push the NO button for the "FAULT HISTORY ?" display.
- (7) Push the NO button for the "GROUND TEST ?" display.
- (8) Push the YES button for the "AIR/GROUND OVRD ?" display.
- (9) Push the YES button for the "SET SYS 1 IN AIR ?" display
- (10) Push the YES button for the "ARE YOU SURE" display.
  - (a) Make sure that the digital/analog multimeter, COM-1793 shows 100 Ohms or less.
- (11) Push the YES button for the "SET SYSTEM 1 ON GRD ?" display.
- (12) Push the YES button for the "ARE YOU SURE ?" display.
- (13) Use a digital/analog multimeter, COM-1793 to measure the resistance between the AIR/GROUND DISCRETE, pin F4, and the IND 2 STATUS, pin F6, in connector D3669B for the No. 2 radio altimeter system.
  - (a) Make sure that the digital/analog multimeter, COM-1793 shows 10 KOhms or more than 10 KOhms.

SUBTASK 34-33-00-730-004

- (14) Push the NO button for the "SET SYS 1 IN AIR ?" display.
- (15) Push the YES button for the "SET SYS2 IN AIR ?" display.

**WARNING:** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (16) Push the YES button for the "ARE YOU SURE ?" display.
  - (a) Make sure that the digital/analog multimeter, COM-1793 shows 100 Ohms or less.
- (17) Push the YES button for the "SET SYSTEM 2 ON GND? " display.
- (18) Push the YES button for the "ARE YOU SURE ?" display.
- (19) On the PSEU, push the ON/OFF button to turn the BITE display to OFF.
- (20) Push the YES button for the "TURN OFF THE DISPLAY ?" display.

EFFECTIVITY	AKS ALL
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SUBTASK 34-33-00-420-001

- (21) Install the No. 1 and the No. 2 LRRA R/Ts. To install them, do this task: Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation, TASK 34-33-21-400-801.

### G. Operational Test

SUBTASK 34-33-00-860-008

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

#### CAPT Electrical System Panel, P18-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

#### F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-00-710-004

- (2) Do this task: Low Range Radio Altimeter (LRRA) System - Operational Test, TASK 34-33-00-710-801.

### H. LRRA Antenna Coaxial Cable Test

SUBTASK 34-33-00-860-009

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

#### F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-00-860-027

- (2) Make sure that this circuit breaker is closed:

#### CAPT Electrical System Panel, P18-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

SUBTASK 34-33-00-730-005

- (3) There are two ways to do LRRA coaxial cable test for LRRA 1 System:

- Use the BNC Male to single banana plugs adapter, COM-9903 to do this task where necessary.
- For the crystal detector kit, STD-4050:
  - Connect the crystal detector to a multimeter and hold the crystal detector up to the LRRA 1 System transmit antenna.
  - Make sure that the multimeter shows a minimum of 1.5 mVDC.
- For the Hewlett Packard HPX421A or HPX421B or generic 1N23 crystal diode detector, STD-1046:
  - Hold the generic 1N23 crystal diode on the LRRA 1 System transmit antenna coaxial cable.
  - Make sure that the multimeter shows a minimum of 30 mVDC.

SUBTASK 34-33-00-730-006

- (4) Cover the LRRA 1 System receive antenna with RF absorbent material, COM-1047, or equivalent absorbent material.

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- (a) Make sure the radio altitude display on the captain's EFIS display is blank.

SUBTASK 34-33-00-860-010

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-00-860-011

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

SUBTASK 34-33-00-730-007

- (7) There are two ways to do LRRA coaxial cable test for LRRA 2 System:

- (a) Use the BNC Male to single banana plugs adapter, COM-9903 to do this task where necessary.
- (b) For the crystal detector kit, STD-4050:
  - 1) Connect the crystal detector to a multimeter and hold the crystal detector up to the LRRA 2 System transmit antenna.
  - 2) Make sure that the multimeter shows a minimum of 1.5 mVDC.
- (c) For the Hewlett Packard HPX421A or HPX421B or generic 1N23 crystal diode detector, STD-1046:
  - 1) Hold the generic 1N23 crystal diode on the LRRA 2 System transmit antenna coaxial cable.
  - 2) Make sure that the multimeter shows a minimum of 30 mVDC.

SUBTASK 34-33-00-730-008

- (8) Cover the LRRA 2 System receive antenna with RF absorbent material, COM-1047, or equivalent absorbent material.

- (a) Make sure the radio altitude display on the first officer's EFIS display is blank.

SUBTASK 34-33-00-860-012

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

SUBTASK 34-33-00-860-013

- (10) If electrical power is no longer necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

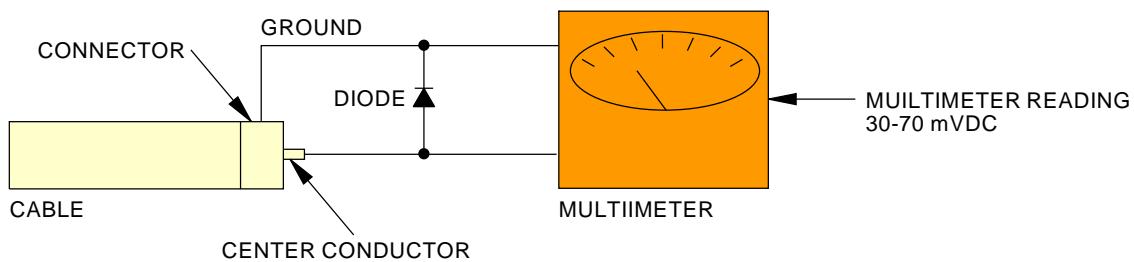
———— END OF TASK ————

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**LRRA SYSTEM - Generic 1N23 diode connection**  
**Figure 501/34-33-00-990-801**

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LOW RANGE RADIO ALTIMETER ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the low range radio altimeter (LRRA) antenna.
  - (2) An installation of the LRRA antenna.
- B. There are four LRRA antennas installed on the bottom of the airplane. The No. 1 (M1737) and No. 2 (M1738) transmit antennas are the outer antennas. The No. 1 (M1739) and the No. 2 (M1740) receive antennas are the inner antennas.

**TASK 34-33-11-000-803**

**2. Low Range Radio Altimeter (LRRA) Antenna Removal (With Gasket)**

Figure 401

**A. General**

- (1) This task includes the steps to remove the Low Range Radio Altimeter (LRRA) Antenna.

**B. References**

Reference	Title
51-31-00-160-801	Prepare For Sealing (P/B 201)

**C. Tools/Equipment**

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

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5



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**D. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
A50453	Compound - Electrical Insulating Coating	BMS5-37 Type I Class A
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

**E. Expendables/Parts**

<b>AMM Item</b>	<b>Description</b>	<b>AIPC Reference</b>	<b>AIPC Effectivity</b>
1	Antenna	Not Specified	

**F. Location Zones**

<b>Zone</b>	<b>Area</b>
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**G. Prepare for the Removal**

SUBTASK 34-33-11-860-011

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

**H. LRRA Antenna Removal**

SUBTASK 34-33-11-000-001

- (1) Remove the LRRA Antenna [1]:

- (a) Remove the screws [2] from the Antenna [1].

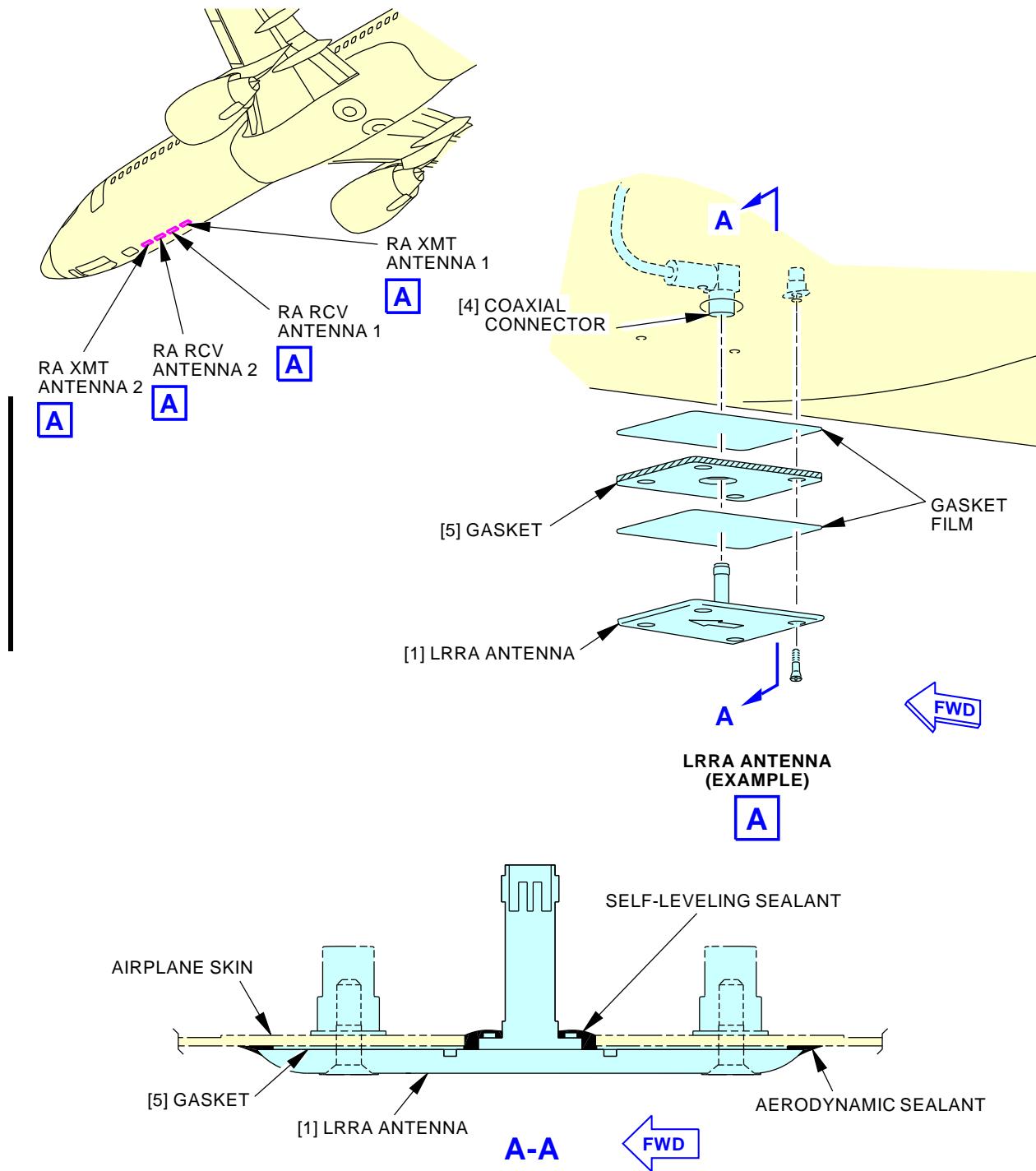
**CAUTION:** BE CAREFUL WHEN YOU USE THE SEALANT REMOVAL TOOL TO BREAK THE SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRPLANE SKIN, AND OTHER COMPONENTS.

- (b) Use force around the antenna with the sealant removal tool, COM-2481 until the seal is fully broken.
  - (c) Lower the Antenna [1] until you can get access to the coaxial connector [4].  
**NOTE:** Move the antenna only as far as necessary to disconnect the cable.
  - (d) Remove compound, A50453 sealant from the coaxial connector and antenna connector.
  - (e) Disconnect the coaxial connector [4] from the Antenna [1] and remove the antenna.
    - 1) Inspect the antenna connector for moisture and contamination. Clean it with cotton wiper, G00034 as required.
  - (f) Remove the old sealant from the airplane skin (Prepare For Sealing, TASK 51-31-00-160-801).

———— END OF TASK ————

EFFECTIVITY
AKS ALL

**34-33-11**



2189177 S0000485720\_V3

**Low Range Radio Altimeter (LRRA) Antenna Installation**  
**Figure 401/34-33-11-990-803**

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**TASK 34-33-11-400-803**

3. **Low Range Radio Altimeter (LRRA) Antenna Installation (With Gasket) - Access from outside the forward cargo compartment**

Figure 401

**A. General**

- (1) This task includes the steps to install the Low Range Radio Altimeter (LRRA) Antenna.

**B. References**

Reference	Title
20-30-84-910-801	Final Cleaning of Metal Prior to Painting (Series 84) (P/B 201)
51-21-31-350-801	Removal and Control of Corrosion for Aluminum and Aluminum Alloys (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-806	Aerodynamic Smoother Application (P/B 201)
SL 20-043	Deferred Application of Aero-Sealant in Antenna Installations
SL 34-210	Low Range Radio Altimeter (LRRA) Antenna Gel Gasket Installation

**C. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17

EFFECTIVITY  
AKS ALL

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(Continued)

<b>Reference</b>	<b>Description</b>
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**D. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A50403	Sealant - Self-Leveling, Polyurethane Kit, Red	
A50453	Compound - Electrical Insulating Coating	BMS5-37 Type I Class A
B01004	Solvent - Final Cleaning Of Metal Prior To Painting (AMM 20-30-84/201) - Series 84	
B50073	Alcohol - Isopropyl	ASTM D 770
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

**E. Expendables/Parts**

<b>AMM Item</b>	<b>Description</b>	<b>AIPC Reference</b>	<b>AIPC Effectivity</b>
1	Antenna	Not Specified	
5	Gasket	34-33-11-02-045	AKS ALL

**F. Location Zones**

<b>Zone</b>	<b>Area</b>
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right



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**737-600/700/800/900**  
**AIRCRAFT MAINTENANCE MANUAL**

**G. Prepare for the Installation**

SUBTASK 34-33-11-700-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-11-110-003

- (2) Clean the airplane mating surface:

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

- (a) Clean the airplane mating surface with a cotton wiper, G00034 that is moist with Series 84 solvent, B01004 (Final Cleaning of Metal Prior to Painting (Series 84), TASK 20-30-84-910-801).
- (b) Use a cotton wiper, G00034 and clean the mating surface again.
- (c) Do these steps until the mating surface is clean and dry.

SUBTASK 34-33-11-300-004

- (3) If the airplane mating surface has corrosion or unwanted material, do these steps to prepare the airplane mating surface:
  - (a) Remove the corrosion or unwanted material from the airplane mating surface. To remove the corrosion or unwanted material, do this task: Removal and Control of Corrosion for Aluminum and Aluminum Alloys, TASK 51-21-31-350-801.
  - (b) Apply a layer of alodine coating to the airplane mating surface. To apply the coating, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.

**H. LRRA Antenna Installation**

SUBTASK 34-33-11-160-002

- (1) Do these steps to clean the antenna and coax connectors that will be sealed with compound, A50453.

**WARNING:** ISOPROPYL ALCOHOL IS TOXIC AND FLAMMABLE. USE PERSONAL PROTECTION EQUIPMENT. USE IN A WELL-VENTILATED AREA.

- (a) Clean the surfaces of the coax connector and antenna connector with alcohol, B50073.  
**NOTE:** Avoid the use of excessive alcohol.

Clean approximately 0.25 in. (0.64 cm) beyond the coaxial cable wire connector.

- (b) Remove all alcohol, B50073 by wiping with a clean dry cotton wiper, G00034.

SUBTASK 34-33-11-400-001

- (2) Install gasket [5] onto the LRRA Antenna [1]:

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**AIRCRAFT MAINTENANCE MANUAL**

- (a) Discard the antenna O-ring supplied with the antenna.
- (b) Remove the protective gasket film from the side of new gasket [5] that will be applied to the Antenna [1] baseplate.
- (c) Line up new gasket [5] holes to Antenna [1] holes and push gasket firmly onto antenna baseplate.  
NOTE: The fasteners may be used to help align the gasket with the antenna.
- (d) Remove the protective gasket film from side of new gasket [5] that will be applied to the airplane surface.

**SUBTASK 34-33-11-390-005**

- (3) Apply the self-leveling sealant, A50403 around the base of the antenna connector.

NOTE: Operators can defer the application of the self-leveling sealant in the antenna installation to avoid a flight delay (SL 34-210).

- (a) Fill entire cavity, up to and around the antenna connector.
- (b) Sealant should be level or convex.

NOTE: The sealant will be tacky within two to three minutes and fixed within ten minutes.

**SUBTASK 34-33-11-420-007**

- (4) Connect the coaxial cable to the Antenna [1] and tighten the connector to  $10 \pm 2$  in-lb ( $12 \pm 3$  kg-cm)

**SUBTASK 34-33-11-390-006**

- (5) Brush apply compound, A50453 from edge of the wire bundle, include the coaxial connector and the LRRA antenna connector to provide moisture seal.

NOTE: A minimum of two coats of sealant is required to achieve a cured thickness of approximately 0.05 in. (0.13 cm) to 0.10 in. (0.25 cm) to make sure coverage is complete, and to build a film that is thick and strong enough to be easily removed. If the coating of sealant is too thin, then the sealant will break during removal, increasing the difficulty of removal. A wet film gauge can be used to estimate the thickness of the coating.

NOTE: Operators can defer the application of the connector sealant in the antenna installation to avoid a flight delay (SL 34-210).

- (a) Brush apply a minimum of two coats of sealant. Wait approximately 5 to 10 minutes between sealant applications.  
NOTE: Bubbles caused by brushing are not a cause for rejection.
- (b) Make sure sealant provides complete coverage under the gap where the coax connector and antenna connector mate.

**SUBTASK 34-33-11-400-002**

- (6) Install the LRRA Antenna [1]:

- (a) Put the Antenna [1] in the correct position on the airplane surface.
- (b) Install the four screws [2].
  - 1) Make sure you manually tighten the screws to 25 in-lb (2.8 N·m).
  - 2) After 15 minutes, manually tighten the screws to 30 in-lb (3.4 N·m).
- (c) Use a plastic scraper sealant removal tool, COM-2481 to remove any excess Gel squeeze out from the antenna.
  - 1) Place scraper perpendicular to the edge of the antenna base, push flush to the airplane skin and pull excess Gel squeeze away.

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**WARNING:** ISOPROPYL ALCOHOL IS TOXIC AND FLAMMABLE. USE PERSONAL PROTECTION EQUIPMENT. USE IN A WELL-VENTILATED AREA.

- 2) Use cotton wiper, G00034 wet with alcohol, B50073 to help with the removal of the Gel squeeze out.

SUBTASK 34-33-11-700-002

- (7) Do these steps to complete the bonding measurement check.

- (a) Measure the resistance between the LRRA antenna baseplate and the airplane skin with an intrinsically safe approved bonding meter, COM-1550.
  - (b) Make sure the resistance is less than 0.001 ohm.

SUBTASK 34-33-11-390-008

- (8) Apply aerodynamic sealant:

- (a) Apply an aerodynamic fillet seal around the base of the Antenna [1] with sealant, A00247, do this task: Aerodynamic Smoother Application, TASK 51-31-00-390-806.

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-043).

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 34-210).

## I. LRRA Antenna Installation Test

SUBTASK 34-33-11-860-012

- (1) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-33-11-710-005

- (2) Make sure the captain's primary EFIS display shows -4 feet ±2 feet.

SUBTASK 34-33-11-710-006

- (3) Make sure the first officer's primary EFIS display shows -4 feet ±2 feet.

———— END OF TASK ————

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LOW RANGE RADIO ALTIMETER ANTENNA - INSPECTION/CHECK

1. General

- A. This procedure makes an inspection for the low range radio altimeter.

**TASK 34-33-11-211-802**

2. Low Range Radio Altimeter (LRRA) Antenna Inspection and Check

A. References

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
34-33-11 P/B 401	LOW RANGE RADIO ALTIMETER ANTENNA - REMOVAL/INSTALLATION

B. Location Zones

Zone	Area
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

C. Procedure

SUBTASK 34-33-11-200-001

- (1) Examine the outer surface of the antenna for a circular area 1/4 inch or larger which is not constant and smooth.
- (a) If an area is found, replace the antenna LOW RANGE RADIO ALTIMETER ANTENNA - REMOVAL/INSTALLATION, PAGEBLOCK 34-33-11/401.
- (b) If not, go to the next step.

SUBTASK 34-33-11-020-001

- (2) Remove the radio altimeter antenna LOW RANGE RADIO ALTIMETER ANTENNA - REMOVAL/INSTALLATION, PAGEBLOCK 34-33-11/401.

NOTE: The antenna connector is inspected and cleaned during the connector removal per PGBLK 34-33-11-4.

SUBTASK 34-33-11-120-001

- (3) Remove all unwanted material from around the connector and the backplate.

SUBTASK 34-33-11-210-001

- (4) This subtask is only for the airplanes with Radio Altimeter antenna P/N DMPN19-1-1 installed:

NOTE: Ignore this Subtask if there is no Radio Altimeter antenna P/N DMPN19-1-1 installed on the airplane.

- (a) Examine the four nuts on the electrical connector for corrosion. If a nut is not there or loose, or has corrosion, replace the antenna. LOW RANGE RADIO ALTIMETER ANTENNA - REMOVAL/INSTALLATION, PAGEBLOCK 34-33-11/401

NOTE: Do not replace nuts that have corrosion. This will change the correct operation of the antenna.

- (b) Examine the antenna connector and the backplate for corrosion.

NOTE: If there is corrosion on the surface in the inner diameter of the O-ring seal, but the connector nuts have no corrosion, do not replace the antenna. It will operate correctly.

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SUBTASK 34-33-11-120-002

- (5) Clean the backplate and connector where there is corrosion on the surface. Use a lint-free cheesecloth and the solvent Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.

SUBTASK 34-33-11-420-006

- (6) Install the antenna LOW RANGE RADIO ALTIMETER ANTENNA - REMOVAL/INSTALLATION, PAGEBLOCK 34-33-11/401.

———— END OF TASK ————

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LRRA RECEIVER/TRANSMITTER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has two tasks:
  - (1) A removal of the low range radio altimeter (LRRA) receiver/transmitter (R/T)
  - (2) An installation of the LRRA R/T.
- B. The two LRRA R/Ts are in the main equipment center. The No. 1 LRRA R/T, is on the E3 electronics equipment rack, shelf No. 1. The No. 2 LRRA R/T is on the E3 electronics equipment rack, shelf No. 2.

**TASK 34-33-21-000-801**

**2. Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Removal**  
(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Access Panels**

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

**D. Removal Procedure**

SUBTASK 34-33-21-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-21-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

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SUBTASK 34-33-21-020-001

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE LRRA R/T. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE LRRA R/T.

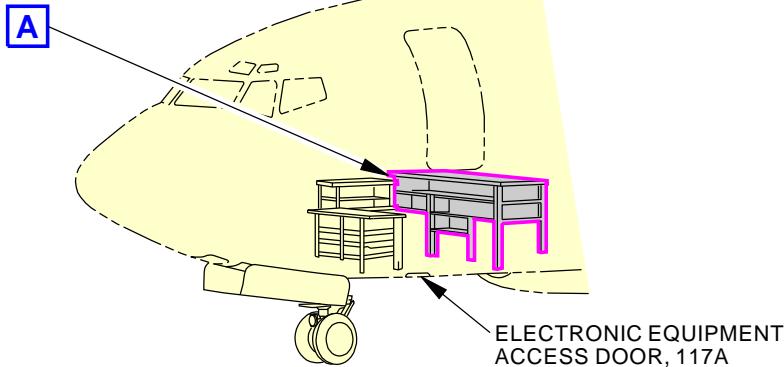
- (3) To remove the LRRA R/T [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

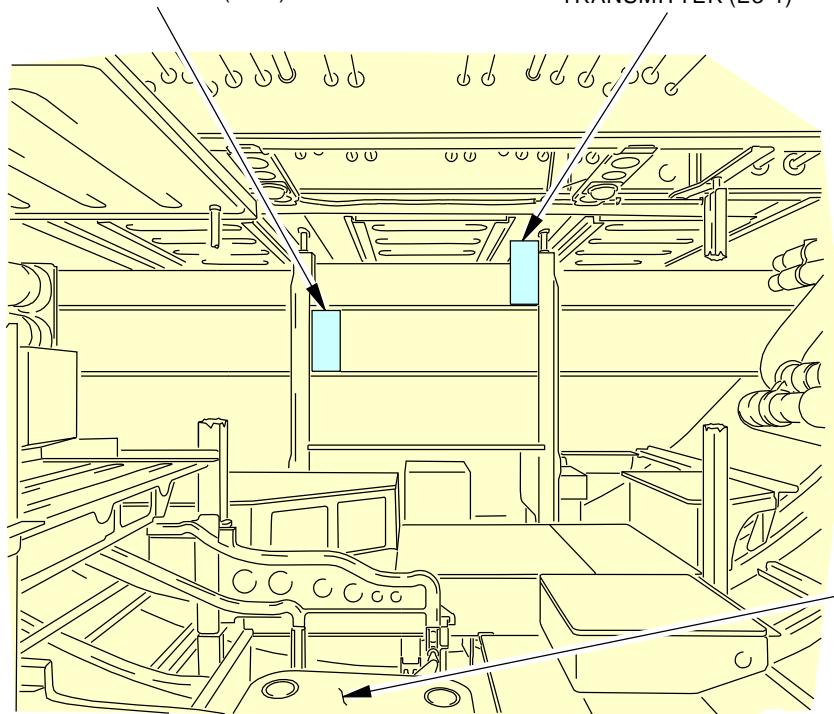
**34-33-21**

ELECTRONIC EQUIPMENT RACKS, E2, E3 AND E4



[1] RIGHT RA RECEIVER/  
TRANSMITTER (E3-2)

[1] LEFT RA RECEIVER/  
TRANSMITTER (E3-1)



ELECTRONIC EQUIPMENT RACKS, E2, E3 AND E4

A

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### Low Range Radio Altimeter (LRRA) Receiver-Transmitter Installation Figure 401/34-33-21-990-801

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TASK 34-33-21-400-801

3. **Low Range Radio Altimeter (LRRA) Receiver/Transmitter (R/T) Installation**  
(Figure 401)

**A. References**

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

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	LRRA R/T	34-33-21-01B-010	AKS ALL

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Installation Procedure**

SUBTASK 34-33-21-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-33-21-420-001

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE LRRA R/T. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE LRRA R/T.

- (2) To install the LRRA R/T [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 34-33-21-410-001

- (3) Close this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------



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SUBTASK 34-33-21-860-003

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

**F. Installation Test**

SUBTASK 34-33-21-860-004

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

SUBTASK 34-33-21-860-005

- (2) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-33-21-710-001

- (3) Make sure  $-4 \pm 2$  feet radio altitude is displayed on the captain's and the first officer's EFIS displays.

SUBTASK 34-33-21-860-006

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

———— END OF TASK ————



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WEATHER RADAR (WXR) SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Weather Radar (WXR) System Deactivation.
  - (2) Weather Radar (WXR) System Activation.
  - (3) Flight History Data Download.

**TASK 34-43-00-040-801**

**2. Weather Radar (WXR) System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power to the Weather Radar system.

**B. Tools/Equipment**

Reference	Description
STD-858	Tag - DO NOT OPERATE

**C. Location Zones**

Zone	Area
111	Radome
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Procedure**

SUBTASK 34-43-00-410-001

**WARNING:** DO NOT MOVE THE THRUST LEVER. THE MOVEMENT OF THE THRUST LEVER CAN CAUSE AUTOMATIC OPERATION OF THE PREDICTIVE WINDSHEAR SYSTEM. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

- (1) Attach a DO NOT OPERATE tag, STD-858 to the thrust reverser levers.

SUBTASK 34-43-00-860-264

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

**E. Weather Radar (WXR) System - Tryout**

**NOTE:** This tryout is to make sure the Weather Radar system is in a zero energy state.

SUBTASK 34-43-00-860-265

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT



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SUBTASK 34-43-00-860-266

- (2) Do the following steps at the WXR control panel:
  - (a) Set mode select /power switch (as applicable) to the ON position.
  - (b) Push the TEST/TEST MODE switch on the control panel.
    - 1) Make sure aural warnings are not heard.

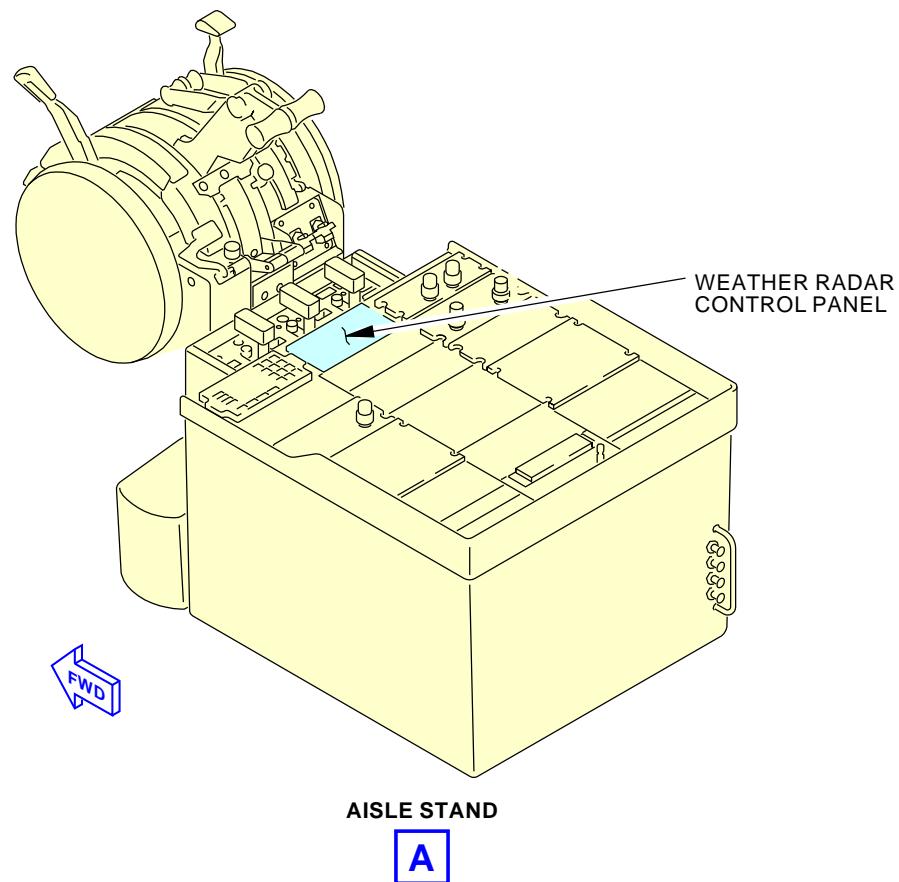
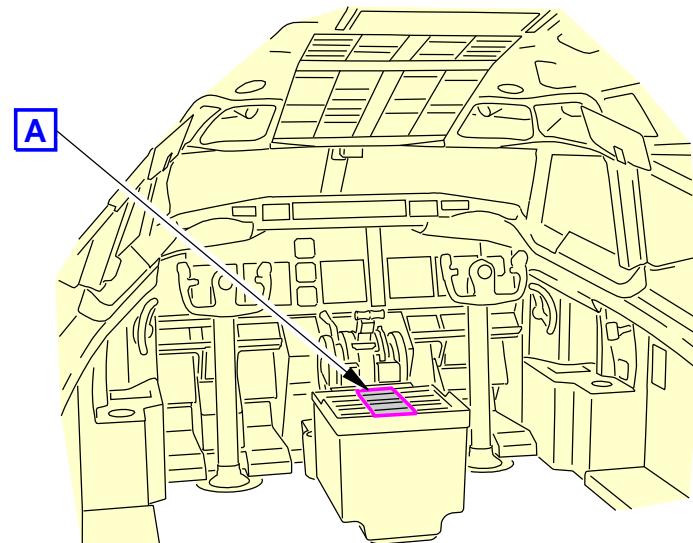
———— END OF TASK ————

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**WXR Control Panel**  
**Figure 201/34-43-00-990-808**

EFFECTIVITY  
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TASK 34-43-00-440-801

3. Weather Radar (WXR) System - Activation

(Figure 201)

A. General

- (1) This procedure adds electrical power to the Weather Radar system.

B. Tools/Equipment

Reference

Description

STD-858	Tag - DO NOT OPERATE
---------	----------------------

C. Location Zones

Zone

Area

111	Radome
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

211	Flight Compartment - Left
212	Flight Compartment - Right

D. Procedure

SUBTASK 34-43-00-860-268

**WARNING:** DO NOT OPERATE THE WEATHER RADAR WHEN PERSONNEL ARE IN THE AREA USUALLY CONTAINED BY THE AIRCRAFT NOSE RADOME. DO NOT OPERATE THE WEATHER RADAR IN A HANGAR. IF YOU DO NOT OBEY THESE PRECAUTIONS, INJURIES TO PERSONNEL CAN OCCUR.

**WARNING:** IF THERE IS FUEL LEAKAGE OR AN OPEN FUEL CELL LESS THAN 50 FT (15 M) FROM THE RADAR, DO NOT OPERATE THE WEATHER RADAR. IF THERE IS FUEL IN THE 50-FOOT RADIUS AROUND THE RADAR, IT CAN CAUSE A FIRE AND EXPLOSION. THESE CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT. THESE CAN KILL PERSONNEL.

**WARNING:** DO NOT OPEN THE NOSE RADOME IF THE WIND IS MORE THAN 15 KNOTS. IF YOU OPEN THE NOSE RADOME IN A WIND, THE RADOME CAN MOVE QUICKLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-00-860-269

- (2) Do the following steps at the WXR control panel:
- Set mode select /power switch (as applicable) to the ON position.
  - Push the TEST/TEST MODE switch on the control panel.
  - Make sure aural warnings are heard.

SUBTASK 34-43-00-010-001

- (3) Remove the DO NOT OPERATE tag, STD-858 from the thrust reverser levers.

— END OF TASK —

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TASK 34-43-00-970-801

4. Flight History Data Download

A. General

- (1) This procedure tells you how to download flight history data from the weather radar system (WXR) onto a portable Compact Flash card.
- (2) A Honeywell programmed and formatted Compact Flash card is required to start the download sequence and record the data. The Compact Flash card (128 Mbytes minimum) must contain files:
  - CFEVENT.BIN
  - VALIDATE.TXT
- (3) If a dual radar configuration is installed, it is possible to download fault and event history from the No.1 or No.2 processor.

B. References

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

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Procedure

SUBTASK 34-43-00-860-271

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

SUBTASK 34-43-00-860-270

- (2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-00-010-002

- (3) On the weather radar processor, open the front panel access cover.

SUBTASK 34-43-00-480-001

- (4) Insert the Compact Flash card into the memory card slot.

NOTE: The slot and the flash card are keyed, so the card will only fit into the slot in one direction.

SUBTASK 34-43-00-970-001

- (5) Make sure the flight history download automatically starts.

(a) The LCD screen will display VALID CARD.

(b) The LCD screen will display WRITING EVENT RECORDS TO COMPACT FLASH.

SUBTASK 34-43-00-970-002

- (6) When the flight history download is completed the LCD screen will display DOWNLOAD COMPLETE.

NOTE: The download process will take several minutes to complete.

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SUBTASK 34-43-00-080-001

- (7) Remove the Compact Flash card from the processor.

SUBTASK 34-43-00-410-002

- (8) Close the panel access cover.

NOTE: The LCD screen should return to the RDR-4000 menu. If it does not, cycle power to the Weather Radar System.

SUBTASK 34-43-00-860-272

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

———— END OF TASK ————

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WEATHER RADAR (WRX) SYSTEM - ADJUSTMENT/TEST

1. **General**

- A. This procedure has these tasks:
- (1) An Operational Test
  - (2) A System Test.

**TASK 34-43-00-710-804-003**

2. **Weather Radar (WXR) System - Operational Test**

Figure 501

A. **General**

- (1) The operational test uses the TEST MODE switch on the WXR control panel. In the TEST mode, the self test circuits monitor the performance of the weather radar system.
- (2) During the self test the weather radar system operates as follows:
  - (a) It makes a test pattern which finds most system failures without test equipment.
  - (b) The WXR receiver/transmitter operates for 1 second.
  - (c) A special test pattern is made on the Display Units (DU)

B. **References**

Reference	Title
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

C. **Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

D. **Procedure**

SUBTASK 34-43-00-860-245-003

- (1) Make sure that the air data inertial reference unit (ADIRU) is aligned to the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.
  - (a) Make sure that the ATT flags on the captains and first officers EADIs are not in view.

SUBTASK 34-43-00-860-257

- (2) Set the DISPLAY SOURCE switch on the instrument switching module (P5-28) to ALL ON 1 (ALL ON 2) position.

SUBTASK 34-43-00-860-246-003

- (3) Make sure that this circuit breaker is closed:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

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SUBTASK 34-43-00-860-247-003

- (4) Set the switches on the captain's and the first officer's EFIS control panels as follows:
  - (a) Set the left and right ADF/VOR control to OFF.
  - (b) Set the mode selector to VOR.

**WARNING:** DO NOT OPERATE THE WEATHER RADAR WHEN PERSONNEL ARE IN THE AREA USUALLY CONTAINED BY THE AIRCRAFT NOSE RADOME. DO NOT OPERATE THE WEATHER RADAR IN A HANGAR. IF YOU DO NOT OBEY THESE PRECAUTIONS, INJURIES TO PERSONNEL CAN OCCUR.

**WARNING:** IF THERE IS FUEL LEAKAGE OR AN OPEN FUEL CELL LESS THAN 50 FT (15 M) FROM THE RADAR, DO NOT OPERATE THE WEATHER RADAR. IF THERE IS FUEL IN THE 50-FOOT RADIUS AROUND THE RADAR, IT CAN CAUSE A FIRE AND EXPLOSION. THESE CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT. THESE CAN KILL PERSONNEL.

- (c) Push the WXR switch to the ON position.

NOTE: The hangar warning restriction DOES NOT apply to the weather radar test mode.

NOTE: The fuel spill or open fuel cell warning DOES apply to the weather radar test mode.

SUBTASK 34-43-00-710-030

- (5) Select TEST on the WXR control panel.

NOTE: Read through these indications before you do the test. All times are approximate and if necessary, do this test again to check all indications.

NOTE: Anytime the predictive windshear (PWS) automatic activation criteria are active or the airplane is in the air, no flight deck effects of the PWS will show when you do the WXR test. If the WXR is in the test mode and an actual PWS alert occurs, the WXR Radar Processor switches to the WXR mode and shows a WXR return and PWS icon data on the map display with the WXR mode annunciation. As a result, no valid PWS icons will show with the WXR TEST pattern. If the mode switch on the WXR control panel is still in the TEST position, the WXR will go back to the test pattern on the map display when the PWS alert stops.

- (6) Make sure that these indications occur:

- (a) Make sure that these indications occur in 0-3 seconds:
    - 1) PWS FAIL shows on the Captain's and First Officer's display units (DUs).
    - 2) The TEST pattern shows on the Captain's and First Officer's DUs.

- (b) Make sure that these indications occur in 3-9 seconds;
      - 1) PWS FAIL annunciation not shown on the Captain's and First Officer's DUs.  
NOTE: If a fault is detected, the FAIL annunciation will stay on.
      - 2) Amber WINDSHEAR shows on the Captain's and First Officer's DUs .
      - 3) MONITOR RADAR DISPLAY is heard on the flight deck aural warning speakers.
      - 4) The TEST pattern continues to show on the Captain's and First Officer's DUs.

- (c) Make sure that these indications occur in 9-12 seconds;
      - 1) GO AROUND, WINDSHEAR AHEAD, (pause) WINDSHEAR AHEAD, WINDSHEAR AHEAD is heard on the flight deck aural warning speakers

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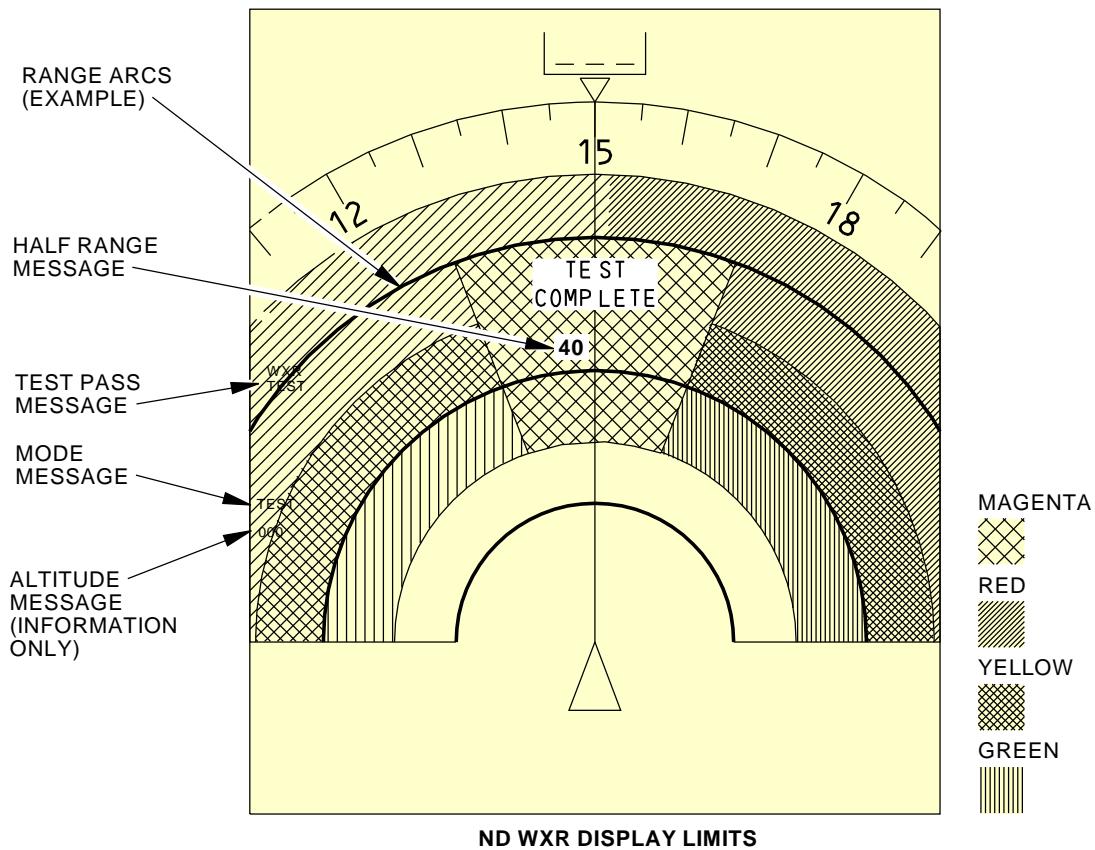
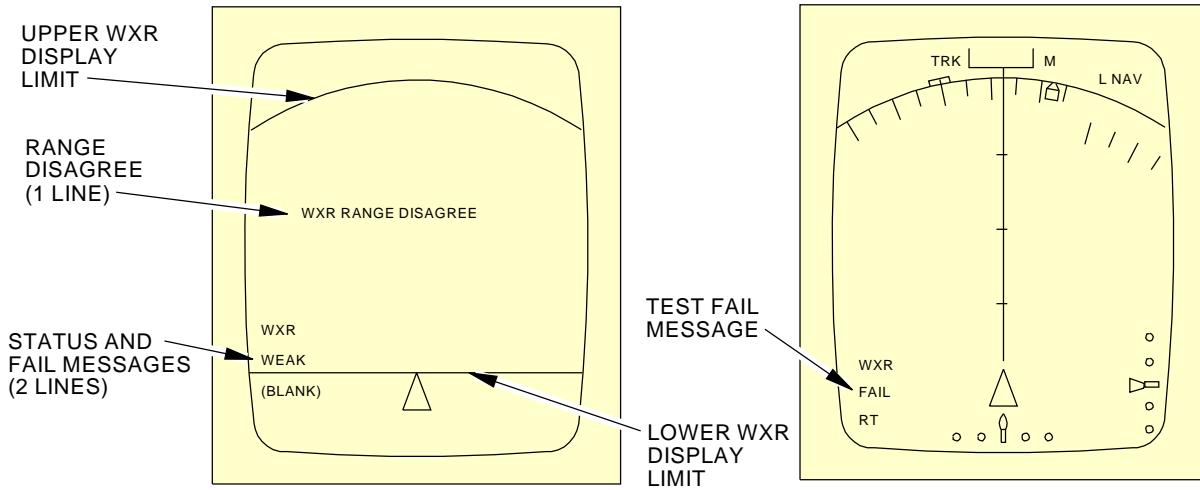
- 2) Red WINDSHEAR shows on the Captain's and First Officer's DUs.
  - 3) The TEST pattern continues to show on the Captain's and First Officer's DUs.
- (d) Make sure the WXR TEST is displayed on the Captain's and First Officer's display unit (DU) as shown in Figure 501.
- NOTE: This test will complete in approximately 50 seconds.
- NOTE: "TEST COMPLETE" label will show on the display units at the completion of this test.
- (e) If WXR FAIL shows on the DUs, do a check for Current Faults on the radar processor (RP) LCD.

SUBTASK 34-43-00-840-003

- (7) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch to the OFF position.

———— END OF TASK ————

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**ND WXR DISPLAY LIMITS**

**ND WXR DISPLAY LIMITS  
AND STATUS AND FAIL MESSAGES**
**ND WXR TEST FAIL DISPLAY  
(EXAMPLE)**

2124279 S0000458147\_V2

**Weather Radar Test and Fault Display**  
**Figure 501/34-43-00-990-807**


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**TASK 34-43-00-730-804-003**

**3. Weather Radar (WXR) System - System Test**

**A. General**

- (1) The system test provides a complete test of the weather radar (WXR) system. For best results during radar scanning, airplane should point towards hills, mountains or structures of various heights in distance.

**B. References**

<b>Reference</b>	<b>Title</b>
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Prepare for the System Test**

SUBTASK 34-43-00-580-003

- (1) Point the airplane away from all large metal objects and to an open area.

NOTE: The antenna scan should include hills or mountains at different heights in distance.

SUBTASK 34-43-00-860-251-003

- (2) Make sure the air data inertial reference unit (ADIRU) is aligned to the NAV mode. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

- (a) Make sure the ATT flags on the Captain's and First Officer's EADIs are not in view.

SUBTASK 34-43-00-860-262

- (3) Make sure that this circuit breaker is closed:

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-00-860-252-003

- (4) Set the switches on the Captain's and the First Officer's EFIS control panels as follows:

- (a) Set the range selector to 40.





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- (b) Push the WXR switch to the ON position.

NOTE: The hangar warning restriction DOES NOT apply to the weather radar Test mode.

NOTE: The fuel spill or open fuel cell warning DOES apply to the weather radar test mode.

- (c) Set the left and right ADF/VOR control to OFF.
- (d) Set the mode selector to VOR.
- (e) Push the CTR push-button as required.
  - 1) Make sure that the Captain's and First Officer's display units (DUs) are in expanded scale.

SUBTASK 34-43-00-860-253

- (5) Set the switches on the WXR control panel as follows:

- (a) Set System Control knob to NORM.
- (b) Set the two MODE knobs to MAN (manual).
- (c) Set the two GAIN knobs to CAL.

## E. Mode Test

SUBTASK 34-43-00-720-027

- (1) Select these positions with the Weather Radar Control Panel Mode knob.
  - (a) Make sure that the mode messages are shown on the display units (DUs) as given below:
    - 1) Rotate the MODE knobs to the MAN position.
      - a) Make sure that WX-M appears on the Captain's and First Officer's DUs.
    - 2) Rotate the MODE knobs to the AUTO position.
      - a) Make sure that WX-A appears on the Captain's and First Officer's DUs.
    - 3) Rotate the MODE knobs to the MAP position.
      - a) Make sure that MAP appears on the Captain's and First Officer's DUs.

## F. Gain Test

SUBTASK 34-43-00-720-028

- (1) Do the following steps for Gain Test:

NOTE: The full gain test will not be possible when there are no radar targets from weather, mountains or large buildings. When there are no targets, only the gain message part of this test will be done.

- (a) Set the System Control knob to NORM.

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- (b) Set the two MODE knobs to the MAP position.
- (c) Turn the two GAIN knobs out of the CAL position toward MIN to get a middle level of radar targets.
  - 1) Make sure that the Captain's and First Officer's display units (DUs) mode message reads VAR.
  - 2) Make sure the radar targets intensity decreases on each DU.
- (d) Turn the two GAIN knobs to the MAX position.
  - 1) Make sure the radar targets intensity increases on each DU.
- (e) Set the two GAIN knobs to the CAL position.
  - 1) Make sure that the mode message VAR is OFF on the DUs.

#### **G. Antenna Altitude Test**

SUBTASK 34-43-00-720-029

- (1) Do the following steps for antenna altitude test:
  - (a) Set both MODE knobs to the MAN position.
  - (b) Set the range switch on the EFIS control panel to adjust the radar returns in the center of each display unit (DU).
  - (c) Set the System Control knob to NORM.
  - (d) Make sure that WX-M is displayed on the DUs.
  - (e) Turn the ALT knobs in 1000 feet increments from 0 to 600.
    - 1) Make sure that the altitude annunciation on the Captain's and First Officer's DUs show the correct altitude.
    - 2) Make sure that secondary returns (returns with black 45 degree lines through them) are not displayed.

#### **H. WXR System Displays Test**

SUBTASK 34-43-00-860-254

- (1) Set the DISPLAY SOURCE switch on the instrument switching module (P5-28) to the ALL ON 1 position.

SUBTASK 34-43-00-720-030

- (2) Do the following on the WXR control panel.
  - (a) Rotate the System Control knob to the NORM position and then back to the TEST position to start the test.  
NOTE: Read through these indications before you do the test. All times are approximate and if necessary, do this test again to check all indications  
NOTE: Anytime the predictive windshear (PWS) automatic activation criteria are active or the airplane is in the air, no flight deck effects of the PWS will show when you do the WXR test. If the WXR is in the test mode and an actual PWS alert occurs, the WXR Radar Processor switches to the WXR mode and shows a WXR return and PWS icon data on the map display with the WXR mode annunciation. As a result, no valid PWS icons will show with the WXR TEST pattern. If the mode switch on the WXR control panel is still in the TEST position, the WXR will go back to the test pattern on the map display when the PWS alert stops.
- (3) Make sure that these indications occur:
  - (a) Make sure that these indications occur in 0-3 seconds:



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- 1) PWS FAIL shows on the Captain's display unit (DU).
- 2) The TEST pattern shows on the Captain's DU.
- (b) Make sure that these indications occur in 3-9 seconds:
  - 1) PWS FAIL annunciation not shown on the Captain's DU.  
NOTE: If a fault is detected, the FAIL annunciation will stay on.
  - 2) Amber WINDSHEAR shows on the Captain's DU.
  - 3) MONITOR RADAR DISPLAY is heard on the flight deck aural warning speakers.
  - 4) The TEST pattern continues to show on the Captain's DU.
- (c) Make sure that these indications occur in 9-12 seconds:
  - 1) GO AROUND, WINDSHEAR AHEAD, (pause) WINDSHEAR AHEAD, WINDSHEAR AHEAD is heard on the flight deck aural warning speakers
  - 2) Red WINDSHEAR shows on the Captain's DU.
  - 3) The TEST pattern continues to show on the Captain's DU.
- (d) After approximately 50 seconds:
  - 1) Make sure the green-yellow-red-magenta color test results is displayed on the Captain's DU.  
NOTE: "TEST COMPLETE" label will show on the display units at the completion of this test.
  - 2) Make sure that WXR and TEST show on the left side of the Captain's DU.
  - 3) Make sure that TEST shows in the weather radar mode field.
  - 4) Make sure that 00o is shown in the weather radar altitude field.
  - 5) Turn the inner INBD DU BRT control knob on the Captain's instrument panel (P1).
    - a) Make sure that there is a change in intensity of the test pattern on the Captain's INBD DU.
  - 6) If WXR FAIL shows on the Captain's DU, do a check for Current Faults on the radar processor (RP) LCD.

SUBTASK 34-43-00-860-261

- (4) Set the DISPLAY SOURCE switch on the instrument switching module (P5-28) to the ALL ON 2 position.

SUBTASK 34-43-00-720-032

- (5) Do the following on the WXR control panel.

- (a) Rotate the System Control knob to the NORM position and then back to the TEST position to start the test.

NOTE: Read through these indications before you do the test. All times are approximate and if necessary, do this test again to check all indications

NOTE: Anytime the predictive windshear (PWS) automatic activation criteria are active or the airplane is in the air, no flight deck effects of the PWS will show when you do the WXR test. If the WXR is in the test mode and an actual PWS alert occurs, the WXR Radar Processor switches to the WXR mode and shows a WXR return and PWS icon data on the map display with the WXR mode annunciation. As a result, no valid PWS icons will show with the WXR TEST pattern. If the mode switch on the WXR control panel is still in the TEST position, the WXR will go back to the test pattern on the map display when the PWS alert stops.

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- (6) Make sure that these indications occur:
- (a) Make sure that these indications occur in 0-3 seconds:
    - 1) PWS FAIL shows on the First Officer's display unit (DU).
    - 2) The TEST pattern shows on the First Officer's DU.
  - (b) Make sure that these indications occur in 3-9 seconds;
    - 1) PWS FAIL annunciation not shown on the First Officer's DU.  
NOTE: If a fault is detected, the FAIL annunciation will stay on.
    - 2) Amber WINDSHEAR shows on the First Officer's DU.
    - 3) MONITOR RADAR DISPLAY is heard on the flight deck aural warning speakers.
    - 4) The TEST pattern continues to show on the First Officer's DU.
  - (c) Make sure that these indications occur in 9-12 seconds;
    - 1) GO AROUND, WINDSHEAR AHEAD, (pause) WINDSHEAR AHEAD, WINDSHEAR AHEAD is heard on the flight deck aural warning speakers
    - 2) Red WINDSHEAR shows on the First Officer's DU.
    - 3) The TEST pattern continues to show on the First Officer's DU.
  - (d) After Approximately 50 seconds:
    - 1) Make sure the green-yellow-red-magenta color test results is displayed on the First Officer's DU.  
NOTE: "TEST COMPLETE" label will show on the display units at the completion of this test.
    - 2) Make sure that WXR and TEST show on the left side of the First Officer's DU.
    - 3) Make sure that TEST shows in the weather radar mode field.
    - 4) Make sure that 00o is shown in the weather radar altitude field.
    - 5) Turn the inner INBD DU BRT control knob on the First Officer's instrument panel (P3).
      - a) Make sure that there is a change in intensity of the test pattern on the First Officer's INBD DU.
    - 6) If WXR FAIL shows on the First Officer's DU, do a check for Current Faults on the radar processor (RP) LCD.

SUBTASK 34-43-00-700-026

- (7) Set the DISPLAY SOURCE switch on the instrument switching module (P5-28) to the AUTO position.
- (a) Make sure that the test pattern stays on the Captain's and First Officer's DUs.

**I. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-43-00-840-001

- (1) Push the WXR switch on the Captain's and the First Officer's EFIS control panels to the off position.

SUBTASK 34-43-00-840-002

- (2) If the air data inertial reference unit (ADIRU) is not necessary, set the ADIRU switch to the OFF position.

———— END OF TASK ———

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WEATHER RADAR PROCESSOR MOUNT FAN FILTER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the radar processor (RP) mount fan filter
  - (2) An installation of the RP mount fan filter.
- B. The filter is part of the RP mount fan assembly attached to the mount tray.

**TASK 34-43-10-000-801**

**2. Weather Radar Processor Mount Fan Filter Removal**

Figure 401

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**B. Access Panels**

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

**C. Removal Procedure**

SUBTASK 34-43-10-860-004

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-10-010-001

- (2) Open this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-43-10-000-001

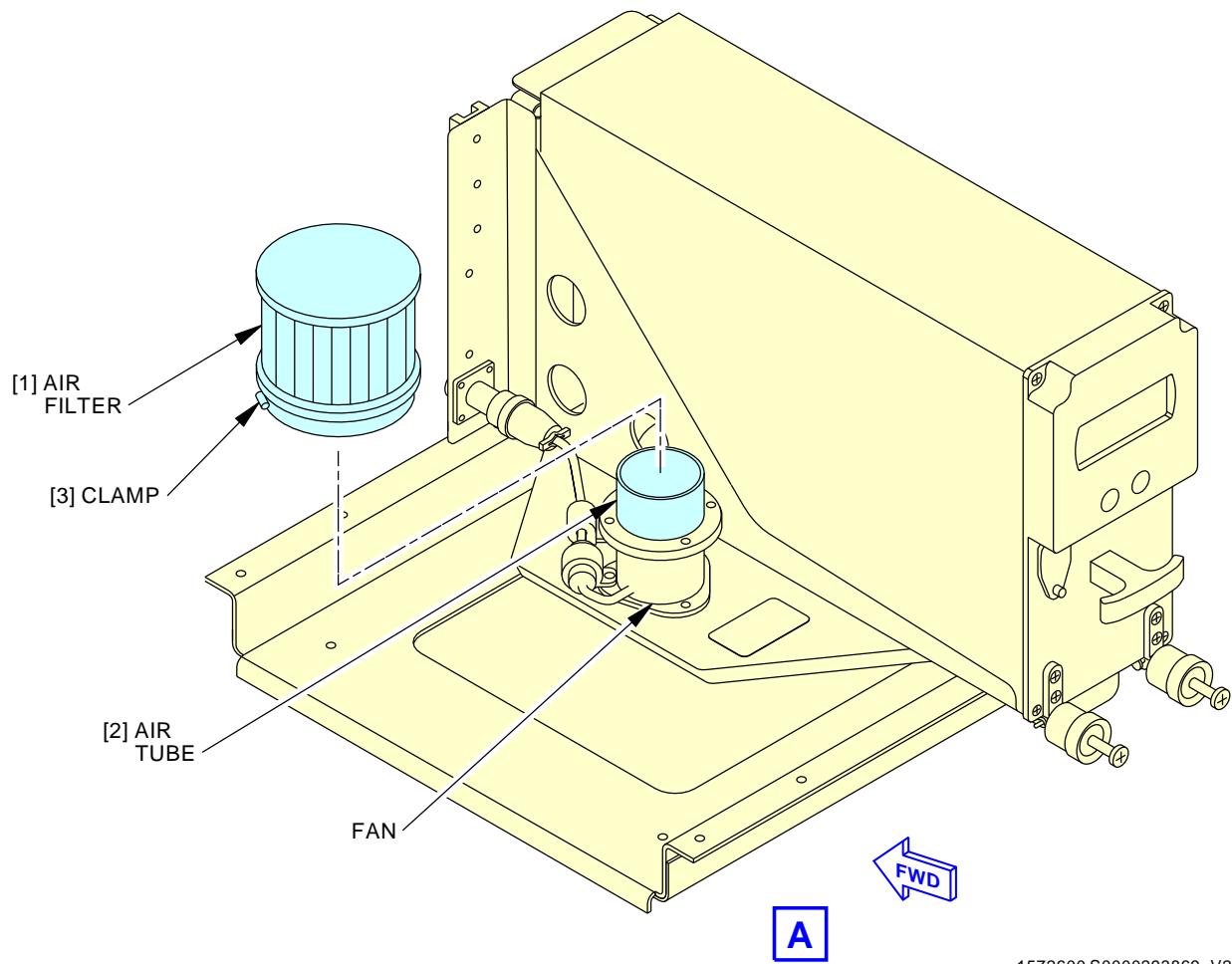
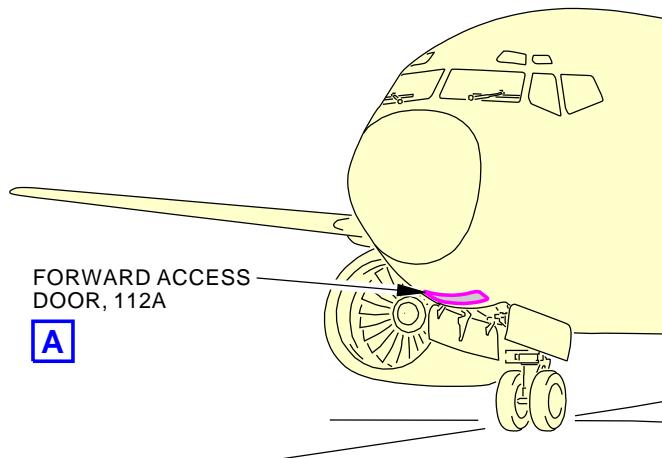
- (3) Do these steps to remove the RP mount fan air filter [1]:

- (a) Loosen the clamp [3] at the bottom of the air filter [1].
- (b) Carefully pull the air filter up from the air tube [2].

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-43-10**



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**Weather Radar Processor Mount Fan Filter Installation**  
**Figure 401/34-43-10-990-801**

 EFFECTIVITY  
 AKS ALL

**34-43-10**

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**TASK 34-43-10-400-801**

**3. Weather Radar Processor Mount Fan Filter Installation**

Figure 401

**A. References**

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

**B. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

**C. Access Panels**

Number	Name/Location
112A	Forward Access Door

**D. Installation Procedure**

SUBTASK 34-43-10-860-001

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-10-400-001

- (2) Do these steps to install the RP mount fan air filter [1]:
  - (a) Put the air filter [1] on the air tube [2].
  - (b) Tighten the clamp [3] at the bottom of the air filter [1].

**E. Installation Test**

SUBTASK 34-43-10-860-002

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-10-860-003

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

SUBTASK 34-43-10-700-001

- (3) Make sure that the mount fan operates

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-43-10-410-001

- (1) Close this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-43-10-862-001

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

———— END OF TASK ————

EFFECTIVITY
AKS ALL

**34-43-10**



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WEATHER RADAR PROCESSOR MOUNT FAN FILTER - CLEANING

1. General

- A. This procedure has one task:
  - (1) The cleaning of the weather radar processor (RP) mount fan filter.
- B. The RP mount fan filter is on the mount fan assembly located on the RP mount.

**TASK 34-43-10-100-801**

2. Weather Radar RP Mount Fan Filter Cleaning

A. References

Reference	Title
34-43-10-000-801	Weather Radar Processor Mount Fan Filter Removal (P/B 401)
34-43-10-400-801	Weather Radar Processor Mount Fan Filter Installation (P/B 401)

B. Tools/Equipment

Reference	Description
STD-77	Air Source - Regulated, Dry Filtered, 0-50 psig

C. Consumable Materials

Reference	Description	Specification
B00541	Cleaner - General Purpose Household Detergent	

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

E. Procedure

SUBTASK 34-43-10-020-001

- (1) Do this task: Weather Radar Processor Mount Fan Filter Removal, TASK 34-43-10-000-801

SUBTASK 34-43-10-100-001

- (2) Clean the weather radar RP mount fan filter.

(a) Clean the filter in a container with general purpose household detergent cleaner, B00541 mixed with hot water.

(b) Dry the filter with 0-50 psig dry filtered regulated air source, STD-77

NOTE: The air pressure must be between 25 and 28 psi (172-193 kPa).

SUBTASK 34-43-10-420-001

- (3) Do this task: Weather Radar Processor Mount Fan Filter Installation, TASK 34-43-10-400-801

———— END OF TASK ————



**34-43-10**



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WEATHER RADAR ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the weather radar Antenna [4] flat plate.
  - (2) A removal of the weather radar Antenna Drive Unit [5].
  - (3) An installation of the weather radar Antenna [4] flat plate.
  - (4) An installation of the weather radar Antenna Drive Unit [5].
  - (5) An installation test of the weather radar Antenna [4].
- B. The weather radar Antenna [4] is located in the radome.

**TASK 34-43-11-000-801**

**2. Weather Radar Antenna Flat Plate Removal**

(Figure 401)

**A. Location Zones**

Zone	Area
111	Radome

**B. Access Panels**

Number	Name/Location
111	Radome

**C. Removal Procedure**

SUBTASK 34-43-11-860-001

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-11-020-001

- (2) Do these steps to open this access panel:

**Number Name/Location**

111	Radome
-----	--------

- (a) Remove fuselage bulkhead attachment screws from this access panel:

**Number Name/Location**

111	Radome
-----	--------

**NOTE:** DO NOT OPEN THE RADOME IN THE RAINY CONDITION. IF THE WATER REMAINS ON THE FLAT PLATE, WIPE OFF THE WATER COMPLETELY BEFORE RADOME IS CLOSED.

**WARNING:** DO NOT OPEN THE RADOME IF THE WIND IS MORE THAN 15 KNOTS. THE RADOME CAN MOVE QUICKLY IF YOU OPEN THE RADOME IN THE WIND. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (b) Open and lock in the open position with support rods on each side, this access panel:

**Number Name/Location**

111	Radome
-----	--------

EFFECTIVITY  
AKS ALL

**34-43-11**



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SUBTASK 34-43-11-020-010

- (3) Do these steps to remove the weather radar Antenna [4] flat plate:
  - (a) Loosen the four captive screws [7] that attach the Antenna [4] flat plate to the Antenna Drive Unit [5].

**WARNING:** USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE WXR ANTENNA.

- (b) Remove the Antenna [4] flat plate.
- (c) Install dust caps on end of the waveguide.

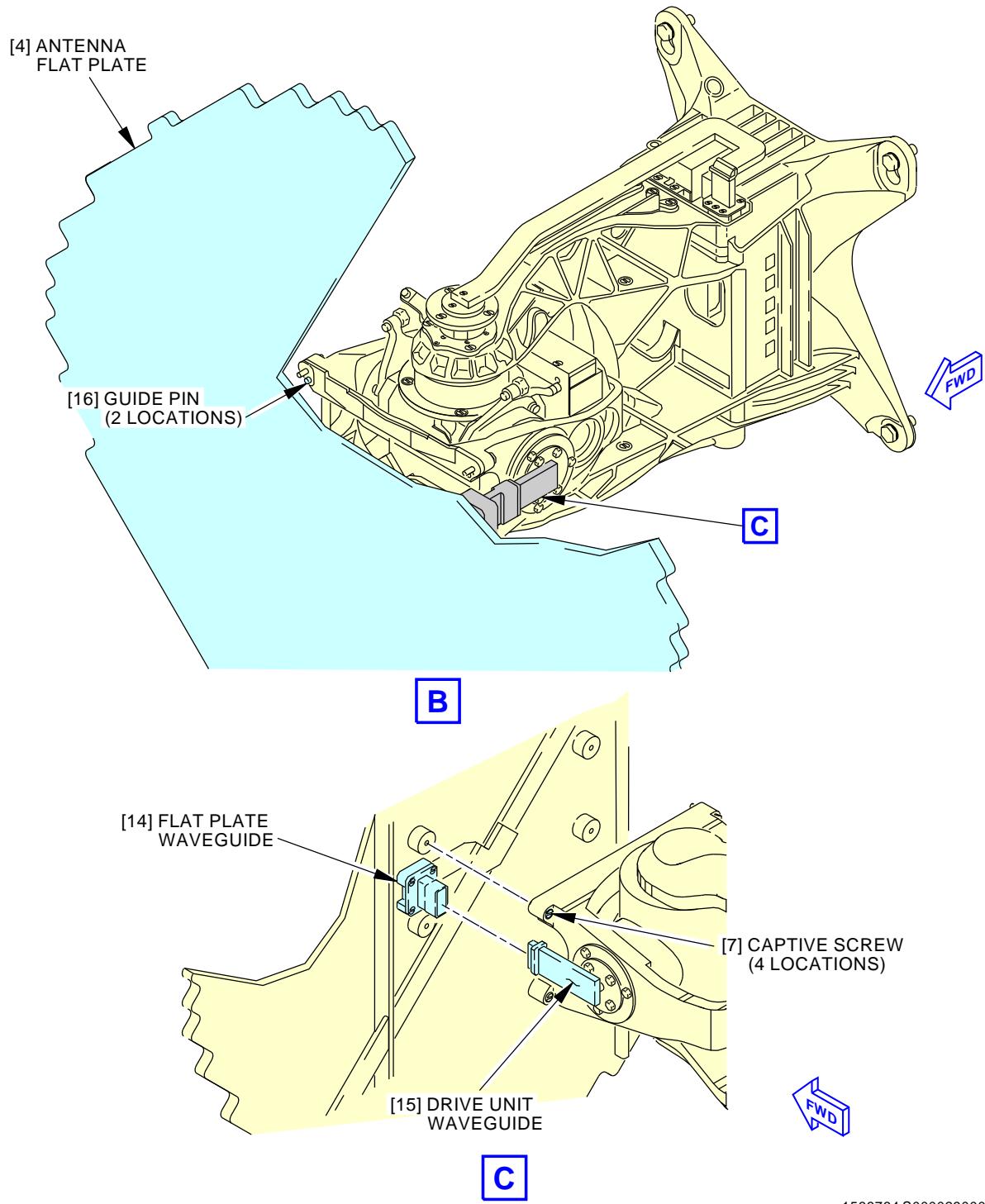
SUBTASK 34-43-11-020-009

- (4) If it is necessary to remove the Antenna Drive Unit [5] after you remove the Antenna [4] flat plate, do this task: Weather Radar Antenna Drive Unit Removal, TASK 34-43-11-000-802.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-43-11**

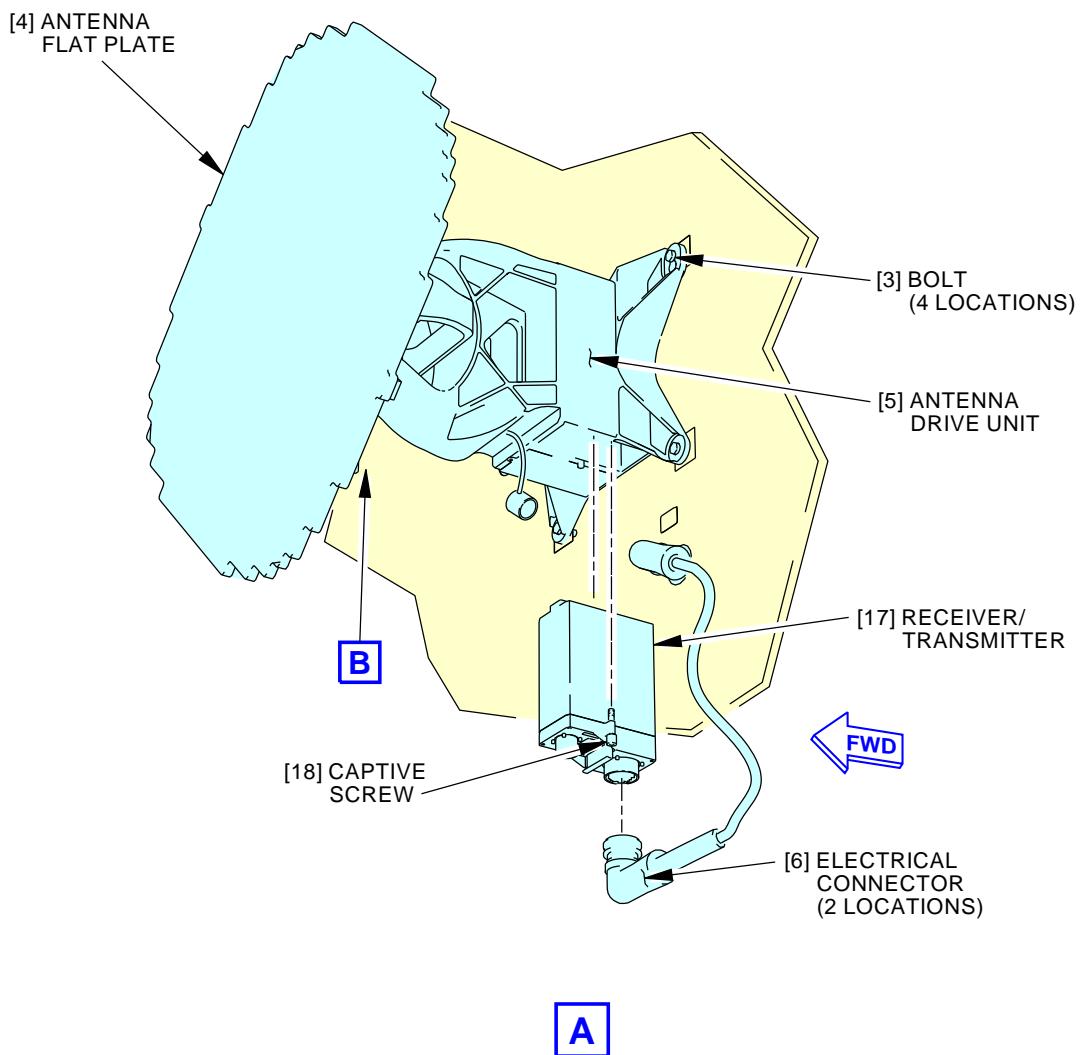


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**Weather Radar Antenna Installation**  
Figure 401/34-43-11-990-801 (Sheet 1 of 2)

EFFECTIVITY  
AKS ALL

**34-43-11**



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**Weather Radar Antenna Installation**  
Figure 401/34-43-11-990-801 (Sheet 2 of 2)

EFFECTIVITY  
AKS ALL

**34-43-11**



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**TASK 34-43-11-400-801**

**3. Weather Radar Antenna Flat Plate Installation**

(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
34-43-00-710-804-003	Weather Radar (WXR) System - Operational Test (P/B 501)

**B. Expendables/Parts**

<u>AMM Item</u>	<u>Description</u>	<u>AIPC Reference</u>	<u>AIPC Effectivity</u>
4	Antenna	34-43-11-09-030	AKS ALL

**C. Location Zones**

<u>Zone</u>	<u>Area</u>
111	Radome

**D. Access Panels**

<u>Number</u>	<u>Name/Location</u>
111	Radome

**E. Installation Procedure**

SUBTASK 34-43-11-860-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-11-420-001

- (2) If closed, do these steps to open this access panel:

**Number      Name/Location**

111      Radome

- (a) Remove the fuselage bulkhead attachment screws from this access panel:

**Number      Name/Location**

111      Radome

**NOTE:** DO NOT OPEN THE RADOME IN THE RAINY CONDITION. IF THE WATER REMAINS ON THE FLAT PLATE, WIPE OFF THE WATER COMPLETELY BEFORE RADOME IS CLOSED.

**WARNING:** DO NOT OPEN THE RADOME IF THE WIND IS MORE THAN 15 KNOTS. THE RADOME CAN MOVE QUICKLY IF YOU OPEN THE RADOME IN THE WIND. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (b) Open and lock in the open position with support rods on each side, this access panel:

**Number      Name/Location**

111      Radome

SUBTASK 34-43-11-420-006

- (3) Do these steps to install the weather radar Antenna [4] flat plate.

- (a) Remove dust cap from the drive unit waveguide [15].

EFFECTIVITY
AKS ALL

**34-43-11**



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**WARNING:** USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE WXR ANTENNA.

- (b) Put the Antenna [4] flat plate in the correct position on the Antenna Drive Unit [5] mount.

NOTE: Make sure that the guide pins [16] on the drive unit mount engage the holes in the flat plate mount.

Make sure that the drive unit waveguide [15] engages into the flat plate waveguide [14].

- (c) Tighten the four captive screws [7] to between 30 and 35 pound-inches (3.4-4.0 newton-meters).

SUBTASK 34-43-11-410-001

- (4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
111	Radome

SUBTASK 34-43-11-865-001

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-11-020-003

- (6) Do this task: Weather Radar (WXR) System - Operational Test, TASK 34-43-00-710-804-003.

———— END OF TASK ————

**TASK 34-43-11-000-802**

**4. Weather Radar Antenna Drive Unit Removal**

(Figure 402)

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-44-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)
34-43-41-000-801	Weather Radar Receiver/Transmitter Removal (P/B 401)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
111	Radome

**C. Access Panels**

<u>Number</u>	<u>Name/Location</u>
111	Radome

**D. Removal Procedure**

SUBTASK 34-43-11-860-004

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT



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SUBTASK 34-43-11-020-004

- (2) Do these steps to open this access panel:

Number    Name/Location

111           Radome

- (a) Remove fuselage bulkhead attachment screws from this access panel:

Number    Name/Location

111           Radome

NOTE: DO NOT OPEN THE RADOME IN THE RAINY CONDITION. IF THE WATER REMAINS ON THE FLAT PLATE, WIPE OFF THE WATER COMPLETELY BEFORE RADOME IS CLOSED.

WARNING: DO NOT OPEN THE RADOME IF THE WIND IS MORE THAN 15 KNOTS. THE RADOME CAN MOVE QUICKLY IF YOU OPEN THE RADOME IN THE WIND. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (b) Open and lock in the open position with support rods on each side, this access panel:

Number    Name/Location

111           Radome

SUBTASK 34-43-11-020-011

- (3) Do this task: Weather Radar Receiver/Transmitter Removal, TASK 34-43-41-000-801 .

SUBTASK 34-43-11-020-012

- (4) Do these steps to remove the weather radar Antenna Drive Unit [5]:

- (a) If the bolts [3] have a drilled hole, remove the twisted lockwires (TASK 20-10-44-000-801).  
(b) Remove the two bottom bolts [3] on the Antenna Drive Unit [5].  
(c) Loosen the top two bolts [3] on the Antenna Drive Unit [5].

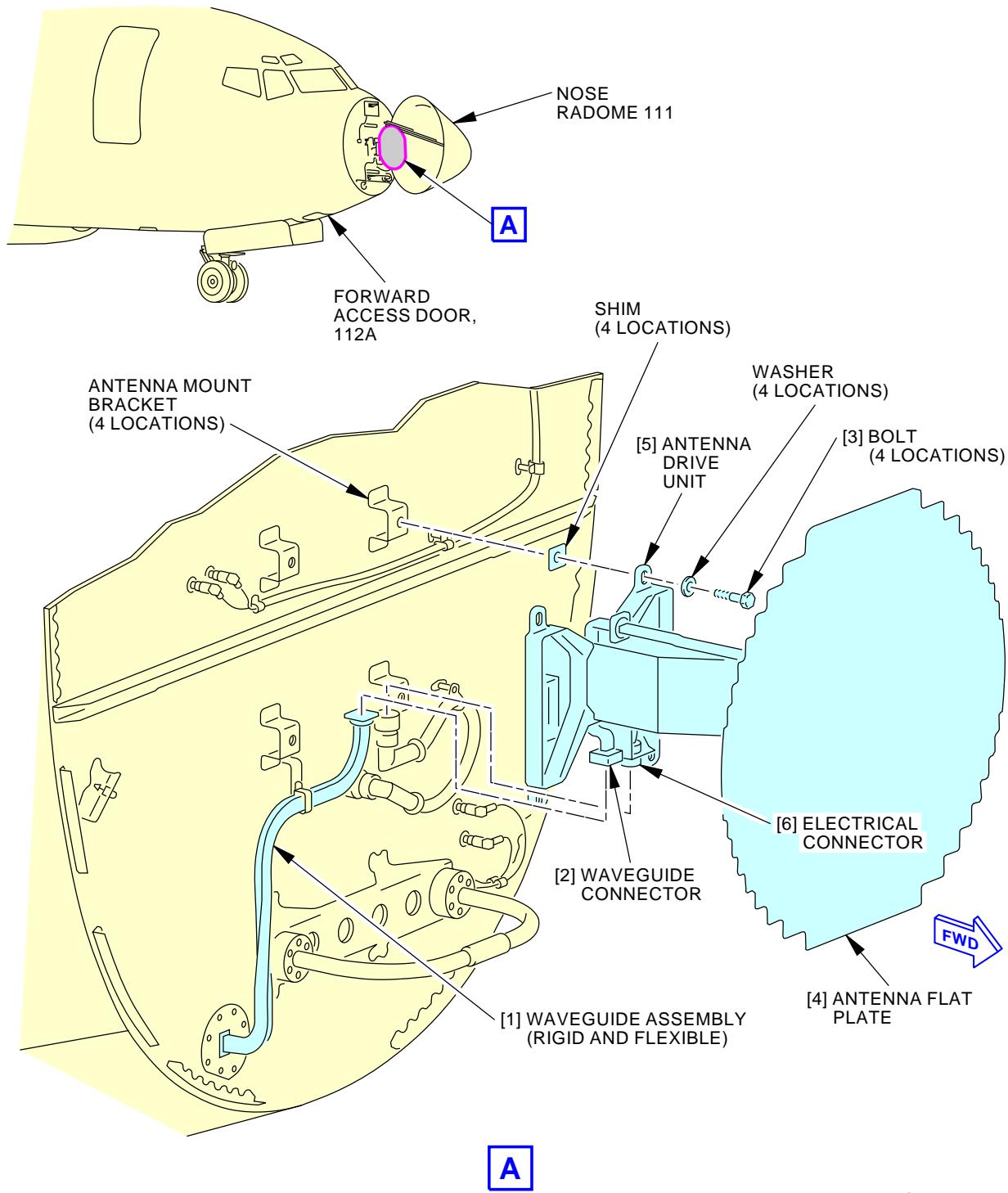
WARNING: USE TWO PERSONS AND A SAFELY INSTALLED WORKSTAND. THIS WILL PREVENT INJURY TO YOU OR DAMAGE TO THE WXR ANTENNA.

- (d) Lift the Antenna Drive Unit [5] up and forward to remove the Antenna Drive Unit [5] from the top two bolts [3].  
(e) Install dust cap to the electrical connectors [6] if you do not replace the Antenna Drive Unit [5] immediately.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

34-43-11



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**Weather Radar Antenna Drive Unit Installation  
Figure 402/34-43-11-990-803**

 EFFECTIVITY  
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**TASK 34-43-11-400-802**

**5. Weather Radar Antenna Drive Unit Installation**

(Figure 402)

**A. References**

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
34-43-00-710-804-003	Weather Radar (WXR) System - Operational Test (P/B 501)
34-43-41-400-801	Weather Radar Receiver/Transmitter Installation (P/B 401)
SWPM 20-20-00	Electrical Bonding Processes

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17

**C. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Antenna Drive Unit	34-43-11-09-020	AKS ALL

**D. Location Zones**

Zone	Area
111	Radome

**E. Access Panels**

Number	Name/Location
111	Radome

**F. Installation Procedure**

SUBTASK 34-43-11-860-005

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-11-420-003

- (2) If closed, do these steps to open this access panel:

**Number Name/Location**

111 Radome

- (a) Remove the fuselage bulkhead attachment screws from this access panel:

**Number Name/Location**

111 Radome

EFFECTIVITY	AKS ALL
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**NOTE:** DO NOT OPEN THE RADOME IN THE RAINY CONDITION. IF THE WATER REMAINS ON THE FLAT PLATE, WIPE OFF THE WATER COMPLETELY BEFORE RADOME IS CLOSED.

**WARNING:** DO NOT OPEN THE RADOME IF THE WIND IS MORE THAN 15 KNOTS. THE RADOME CAN MOVE QUICKLY IF YOU OPEN THE RADOME IN THE WIND. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (b) Open and lock in the open position with support rods on each side, this access panel:

<u>Number</u>	<u>Name/Location</u>
111	Radome

SUBTASK 34-43-11-420-007

- (3) Do these steps to install the weather radar Antenna Drive Unit [5]:
- Remove the dust cap from the electrical connectors [6].
  - Install the base of the weather radar Antenna Drive Unit [5] on to the two top bolts [3].
  - Install the two bottom bolts [3].
  - Tighten all four bolts [3] to 220-240 pound-inches (24.9-27.1 newton-meters).
  - If the bolts [3] have a drilled hole, install a double twisted lockwires, (TASK 20-10-44-400-801).

SUBTASK 34-43-11-420-008

- (4) Do this task: Weather Radar Receiver/Transmitter Installation, TASK 34-43-41-400-801

SUBTASK 34-43-11-420-009

- (5) If removed, do this task to install the Antenna [4] flat plate: Weather Radar Antenna Flat Plate Installation, TASK 34-43-11-400-801

SUBTASK 34-43-11-020-006

- (6) Do an electrical bonding test between the airplane structure and the weather radar antenna with a intrinsically safe approved bonding meter, COM-1550 (SWPM 20-20-00).  
(a) Make sure the resistance is less than 0.001 ohms.

SUBTASK 34-43-11-410-004

- (7) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
111	Radome

- (a) Install the screws that attach the nose radome to the fuselage bulkhead.

SUBTASK 34-43-11-865-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-11-020-007

- (9) Do this task: Weather Radar (WXR) System - Operational Test, TASK 34-43-00-710-804-003.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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WEATHER RADAR PROCESSOR MOUNT - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the weather radar processor mount
  - (2) An installation of the weather radar processor mount.
- B. The processor mount is in the lower nose compartment.

**TASK 34-43-33-000-801**

**2. Weather Radar Processor Mount Removal**

Figure 401

**A. References**

<u>Reference</u>	<u>Title</u>
34-43-42-000-801	Weather Radar Processor Removal (P/B 401)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**C. Access Panels**

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

**D. Removal Procedure**

SUBTASK 34-43-33-860-001

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-33-010-001

- (2) To get access to the weather radar processor mount, open this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-43-33-020-001

- (3) Do this task: Weather Radar Processor Removal, TASK 34-43-42-000-801

SUBTASK 34-43-33-020-002

- (4) Remove the weather radar processor (RP) mount [4]:
  - (a) Disconnect the electrical connector [6].
  - (b) Remove the screws [3] that attach the connector assembly [2] to the rear of the RP mount [4].
  - (c) Remove the screws [5] from the bottom of the RP mount [4].
  - (d) Make sure you support the connector assembly [2] while you carefully remove the RP mount [4].



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- (e) Put protective covers on the electrical connector [6] and connector assembly [2].

———— END OF TASK ——

———— EFFECTIVITY ——  
AKS ALL

**34-43-33**

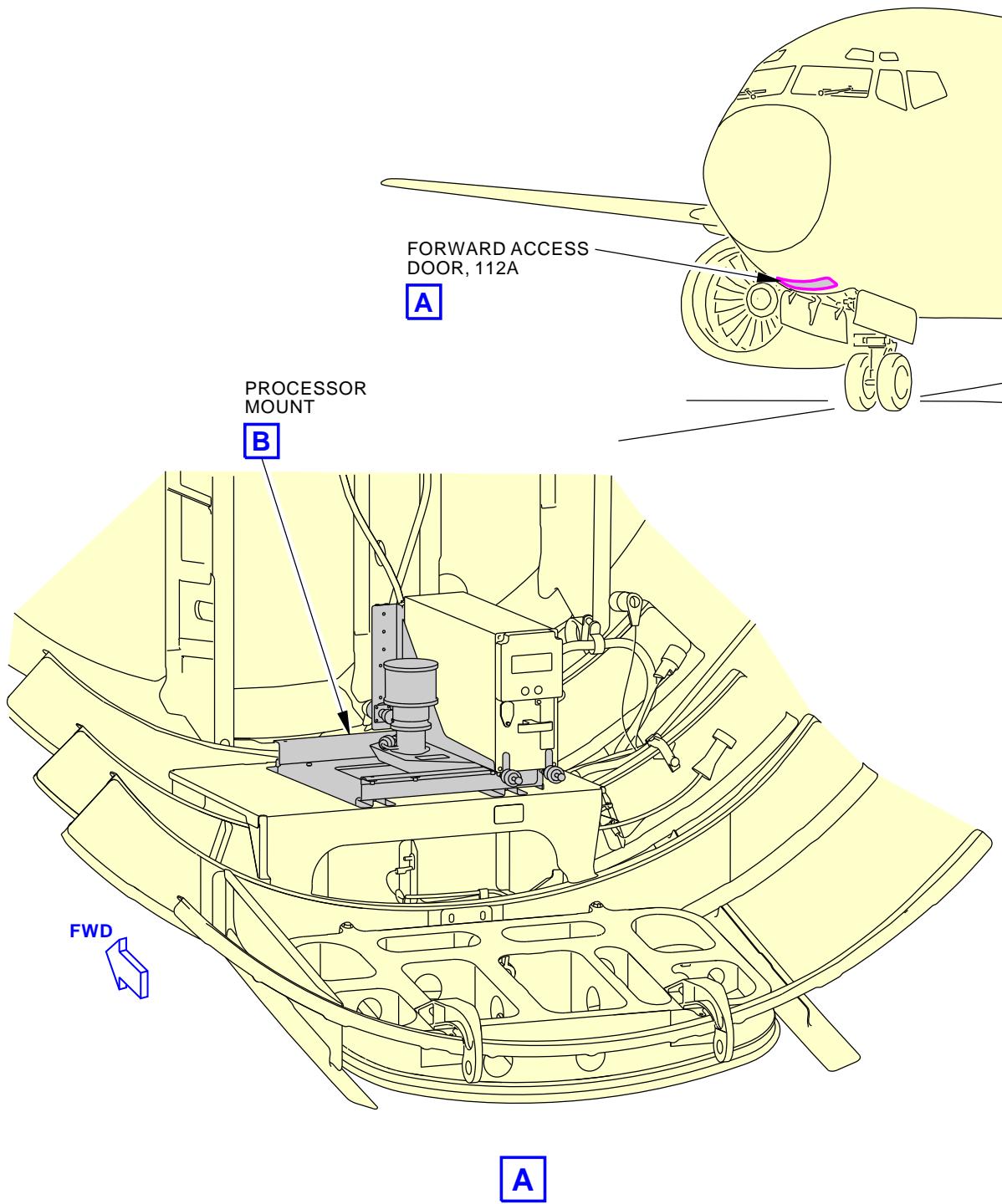
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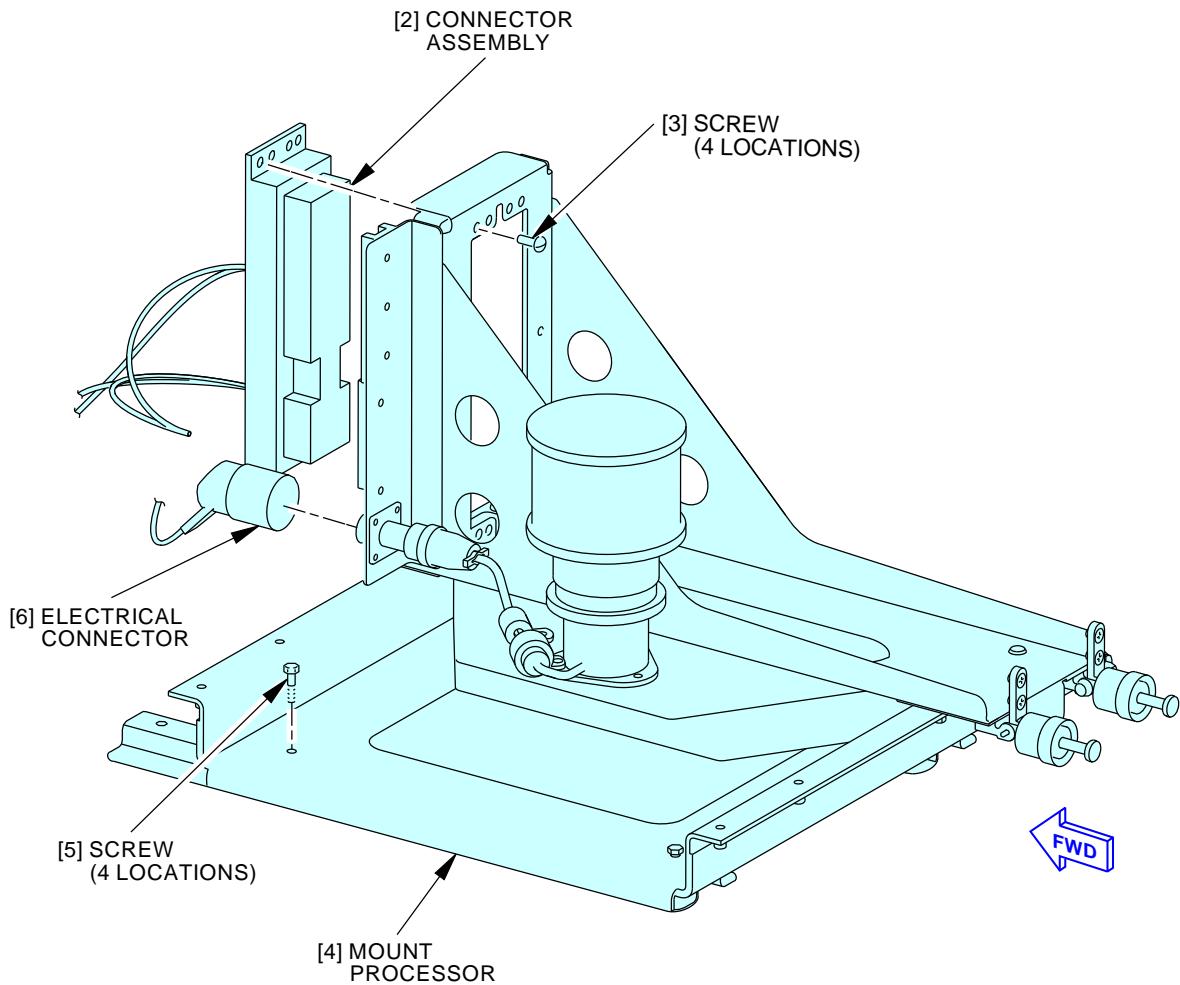
Weather Radar Processor Mount Installation  
Figure 401/34-43-33-990-801 (Sheet 1 of 2)

EFFECTIVITY  
AKS ALL

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Weather Radar Processor Mount Installation  
Figure 401/34-43-33-990-801 (Sheet 2 of 2)EFFECTIVITY  
AKS ALL

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AIRCRAFT MAINTENANCE MANUAL

**TASK 34-43-33-400-801**

**3. Weather Radar Processor Mount Installation**

Figure 401

**A. References**

Reference	Title
34-43-42-400-801	Weather Radar Processor Installation (P/B 401)

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17

**C. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**D. Access Panels**

Number	Name/Location
112A	Forward Access Door

**E. Installation Procedure**

SUBTASK 34-43-33-860-002

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-33-420-001

- (2) Install the weather radar processor (RP) mount [4].
  - (a) Remove the protective covers from the electrical connector [6] and connector assembly [2].
  - (b) Examine the electrical connector [6] and connector assembly [2] for bent or broken pins, dirt and damage.
  - (c) Carefully move the RP mount [4] into position with the connector assembly [2] aligned correctly.
  - (d) Install the screws [5] that attach the RP mount [4] to the support structure.
  - (e) Install the screws [3] that attach the connector assembly [2] to the RP mount [4].
  - (f) Install the electrical connector [6].



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SUBTASK 34-43-33-765-001

- (3) Use a intrinsically safe approved bonding meter, COM-1550 to measure the resistance between the RP mount [4] and the support structure.
  - (a) Make sure the maximum resistance is 0.001 ohms.

SUBTASK 34-43-33-420-002

- (4) Do this task: Weather Radar Processor Installation, TASK 34-43-42-400-801.

SUBTASK 34-43-33-410-001

- (5) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-43-33**



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WEATHER RADAR RECEIVER/TRANSMITTER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the weather radar receiver/transmitter.
  - (2) An installation of the weather radar receiver/transmitter.
- B. The weather radar receiver/transmitter is in the nose radome.

**TASK 34-43-41-000-801**

**2. Weather Radar Receiver/Transmitter Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
111	Radome
212	Flight Compartment - Right

**B. Access Panels**

<u>Number</u>	<u>Name/Location</u>
111	Radome

**C. Removal Procedure**

SUBTASK 34-43-41-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-41-010-002

NOTE: DO NOT OPEN THE RADOME IN THE RAINY CONDITION. IF THE WATER REMAINS ON THE FLAT PLATE, WIPE OFF THE WATER COMPLETELY BEFORE RADOME IS CLOSED.

WARNING: DO NOT OPEN THE NOSE RADOME IF THE WIND IS MORE THAN 15 KNOTS. IF YOU OPEN THE NOSE RADOME IN A WIND, THE RADOME CAN MOVE QUICKLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

CAUTION: DO NOT LET THE WORKSTANDS OR EQUIPMENT HIT OR TOUCH THE WEATHER RADAR ANTENNA. THIS CAN CAUSE DAMAGE TO THE WEATHER RADAR ANTENNA.

- (2) To get access to the weather radar receiver/transmitter, open this access panel:

<u>Number</u>	<u>Name/Location</u>
111	Radome

- (a) Remove the screws that attach the nose radome to the fuselage bulkhead.

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- (b) Open the nose radome and hold it in the open position by the installation of the support rods on each side.

SUBTASK 34-43-41-020-002

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

- (3) To remove the RECEIVER/TRANSMITTER [1], do these tasks:

- (a) Disconnect the electrical connectors [3].  
(b) Loosen the two captive screws [4] that secure the RECEIVER/TRANSMITTER [1] to the Antenna Drive Unit [2].

NOTE: After the captive screws are loosened, the unit will drop slightly to where it is secured by retainer springs. The springs will hold the receiver/transmitter in its position for removal. An area of one-half inch painted red will be exposed to indicate that the screws are loosened and the retainer springs are securing the receiver/transmitter.

- (c) Remove the RECEIVER/TRANSMITTER [1] from the Antenna Drive Unit [2].

NOTE: A force of approximately 10 pounds is necessary to overcome the retainer springs. The handle on the front of the receiver/transmitter is used to pull the unit down to overcome the retainer springs.

SUBTASK 34-43-41-860-007

- (4) Put protective covers on the electrical connectors.

———— END OF TASK ————

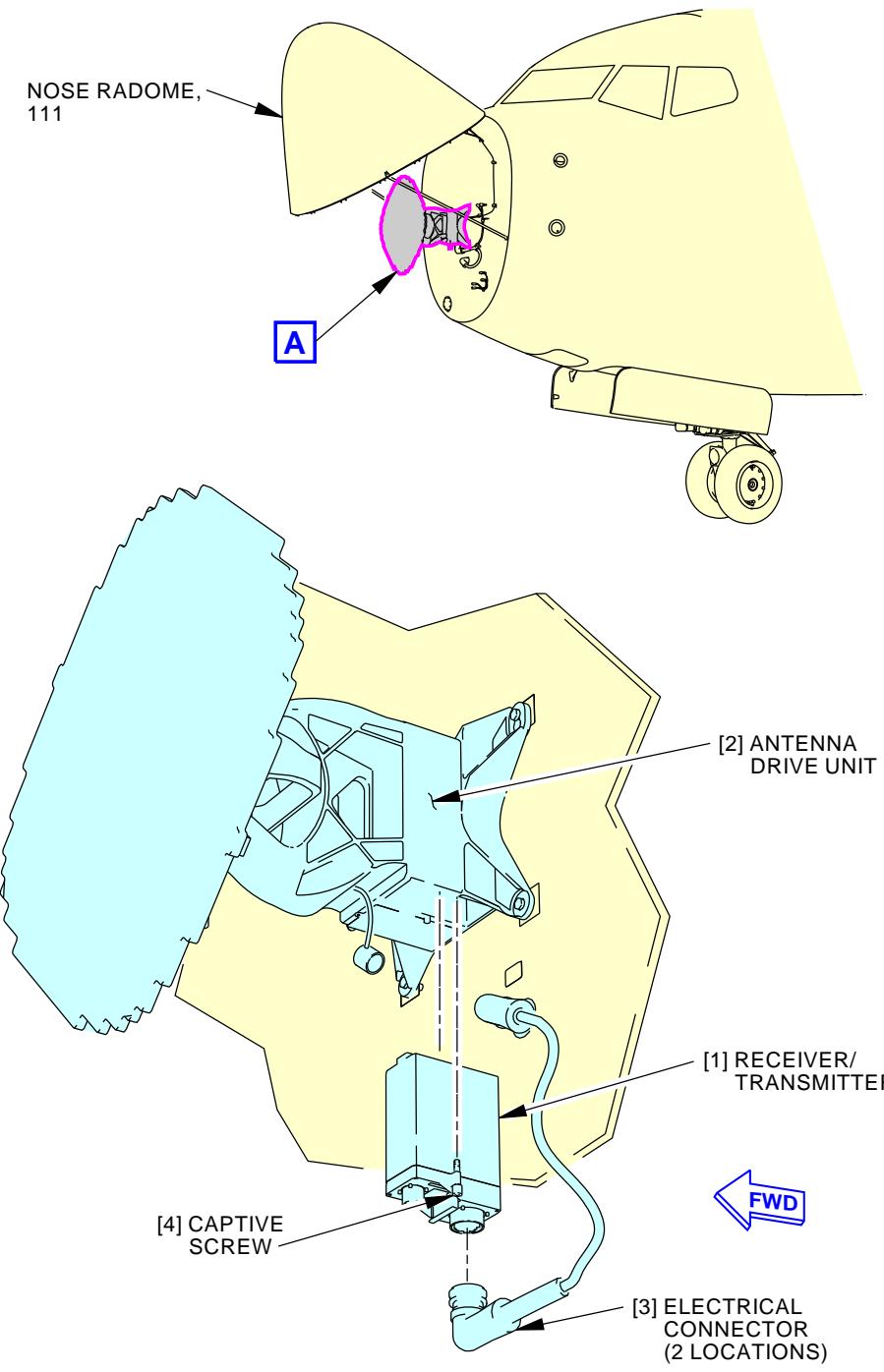
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Weather Radar Receiver/Transmitter Installation  
Figure 401/34-43-41-990-801

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**TASK 34-43-41-400-801**

**3. Weather Radar Receiver/Transmitter Installation**

(Figure 401)

**A. References**

<b>Reference</b>	<b>Title</b>
20-60-06-100-801	Electronic LRU Cleaning (P/B 201)
34-43-00-710-804-003	Weather Radar (WXR) System - Operational Test (P/B 501)

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
111	Radome
212	Flight Compartment - Right

**C. Access Panels**

<b>Number</b>	<b>Name/Location</b>
111	Radome

**D. Installation Procedure**

SUBTASK 34-43-41-200-001

- (1) Do a visual inspection of the weather radar receiver/transmitter mount tray and blower assembly for dust accumulation.
- (2) If necessary, do this task to clean the area around the WXR mounting tray: Electronic LRU Cleaning, TASK 20-60-06-100-801

SUBTASK 34-43-41-860-002

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	7	C01519	TERRAIN DISPLAY

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-41-860-008

- (4) Remove the protective covers from the electrical connectors.

SUBTASK 34-43-41-010-003

- (5) If closed, do these steps to open this access panel:

**Number      Name/Location**

111      Radome

- (a) Remove the fuselage bulkhead attachment screws from this access panel:

**Number      Name/Location**

111      Radome

**NOTE:** DO NOT OPEN THE RADOME IN THE RAINY CONDITION. IF THE WATER REMAINS ON THE FLAT PLATE, WIPE OFF THE WATER COMPLETELY BEFORE RADOME IS CLOSED.



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**WARNING:** DO NOT OPEN THE NOSE RADOME IF THE WIND IS MORE THAN 15 KNOTS. IF YOU OPEN THE NOSE RADOME IN A WIND, THE RADOME CAN MOVE QUICKLY. THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

- (b) Open and lock in the open position with support rods on each side, this access panel:

<u>Number</u>	<u>Name/Location</u>
111	Radome

SUBTASK 34-43-41-420-002

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

- (6) To install the RECEIVER/TRANSMITTER [1], do these tasks:

- Install the RECEIVER/TRANSMITTER [1] into the Antenna Drive Unit [2].
- Tighten the captive screws [4] to 30-35 pound-inches (3.4-4.0 newton-meters).
- Connect the electrical connectors [3].

SUBTASK 34-43-41-410-004

- (7) Put the airplane back to its usual condition, do this task:

Close this access panel:

<u>Number</u>	<u>Name/Location</u>
111	Radome

## E. Installation Test

SUBTASK 34-43-41-860-009

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-41-710-001

- (2) Do this task: Weather Radar (WXR) System - Operational Test, TASK 34-43-00-710-804-003.

———— END OF TASK ————



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WEATHER RADAR PROCESSOR - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the weather radar processor.
  - (2) An installation of the weather radar processor.
- B. The weather radar processor is in the lower nose compartment.

**TASK 34-43-42-000-801**

**2. Weather Radar Processor Removal**

Figure 401

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**C. Access Panels**

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

**D. Removal Procedure**

SUBTASK 34-43-42-860-001

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-42-010-001

- (2) Open this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-43-42-020-001

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

- (3) To remove the Weather Radar Processor [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

SUBTASK 34-43-42-020-002

- (4) Put protective covers on the electrical connectors.

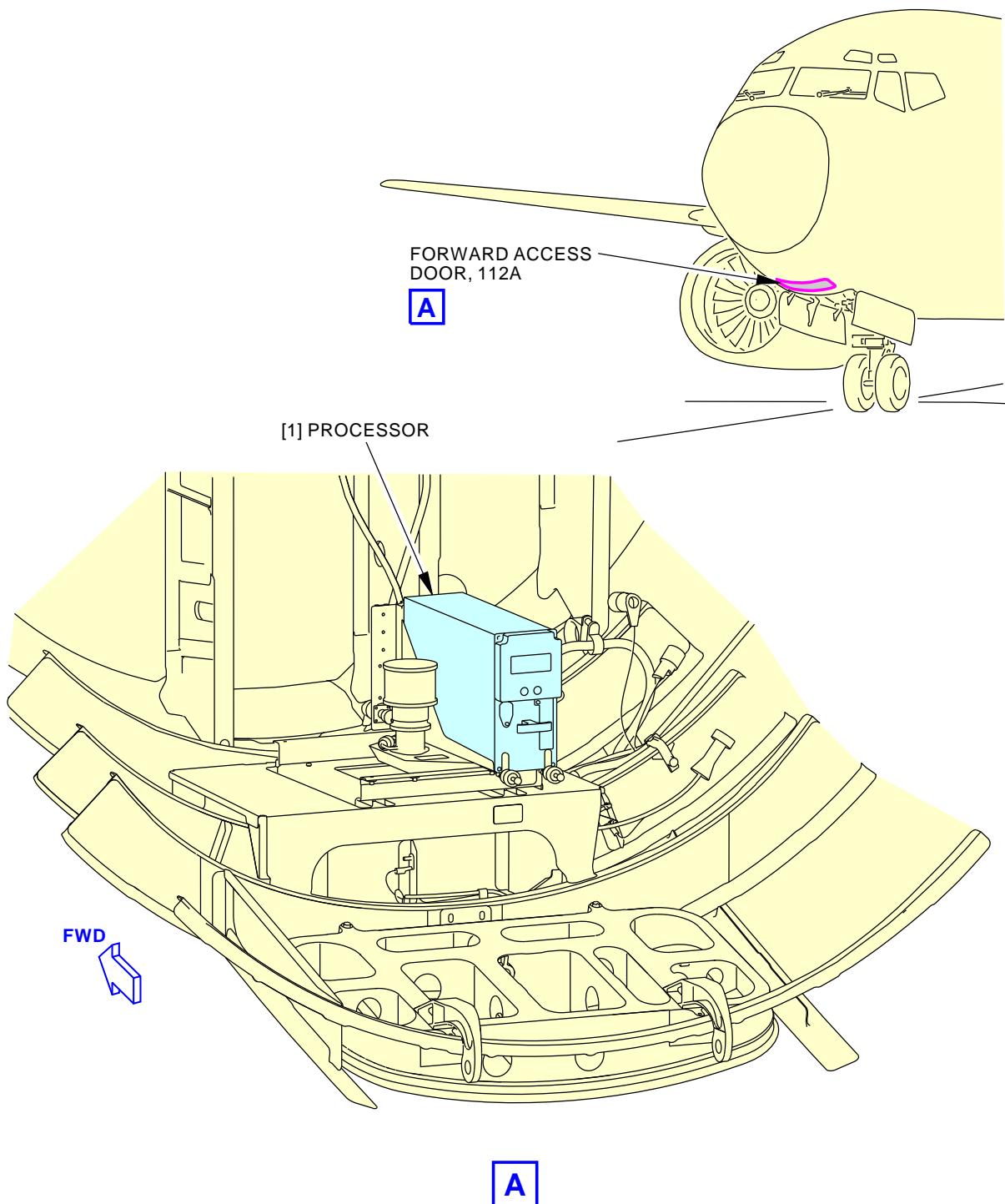
———— END OF TASK ————

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**34-43-42**



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**Weather Radar Processor Installation**  
**Figure 401/34-43-42-990-801**

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**TASK 34-43-42-400-801**

**3. Weather Radar Processor Installation**

Figure 401

**A. References**

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
34-43-00-710-804-003	Weather Radar (WXR) System - Operational Test (P/B 501)

**B. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**C. Access Panels**

Number	Name/Location
112A	Forward Access Door

**D. Installation Procedure**

SUBTASK 34-43-42-860-002

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-42-420-001

- (2) Remove the protective covers from the electrical connectors.

SUBTASK 34-43-42-420-002

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

- (3) To install the Weather Radar Processor [1] , do this task: E/E Box Installation, TASK 20-10-07-400-801.
- (4) Make sure the Weather Radar Processor [1] is fully mated by using a reference point or inspection of rear connector gap.

NOTE: The WXR processor may require additional force to fully mate the connector.

**E. Installation Test**

SUBTASK 34-43-42-860-003

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-42-700-001

- (2) Make sure that the weather radar processor mount fan operates.



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SUBTASK 34-43-42-410-001

- (3) Close this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-43-42-470-001

- (4) Wait 5 minutes for the WXR processor to complete a data load with the WXR receiver/transmitter.

SUBTASK 34-43-42-710-001

- (5) Do this task: Weather Radar (WXR) System - Operational Test, TASK 34-43-00-710-804-003.

———— END OF TASK ————

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WEATHER RADAR PROCESSOR MOUNT FAN ASSEMBLY - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the fan assembly on weather radar processor (RP) mount.
  - (2) An installation of the fan assembly on the RP mount.
- B. The fan assembly on the RP mount is found in the lower nose compartment.

**TASK 34-43-52-000-801**

**2. Weather Radar Processor Mount Fan Assembly Removal**

Figure 401

**A. References**

<u>Reference</u>	<u>Title</u>
34-43-10-000-801	Weather Radar Processor Mount Fan Filter Removal (P/B 401)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**C. Access Panels**

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

**D. Removal Procedure**

SUBTASK 34-43-52-860-003

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-52-010-001

- (2) Open this access panel:

<u>Number</u>	<u>Name/Location</u>
112A	Forward Access Door

SUBTASK 34-43-52-020-001

- (3) Remove the fan [2] assembly from the RP mount

- (a) Do this task: Weather Radar Processor Mount Fan Filter Removal, TASK 34-43-10-000-801
- (b) Remove the three screws [5] that attach the air tube [4] and fan [2] assembly to the RP mount assembly.
- (c) Disconnect the leads from the terminal block on the fan ring terminals T4 and T1.
- (d) Identify the leads during the removal procedure to make sure that they are installed correctly.
- (e) Carefully remove the fan [2] assembly from the mount.

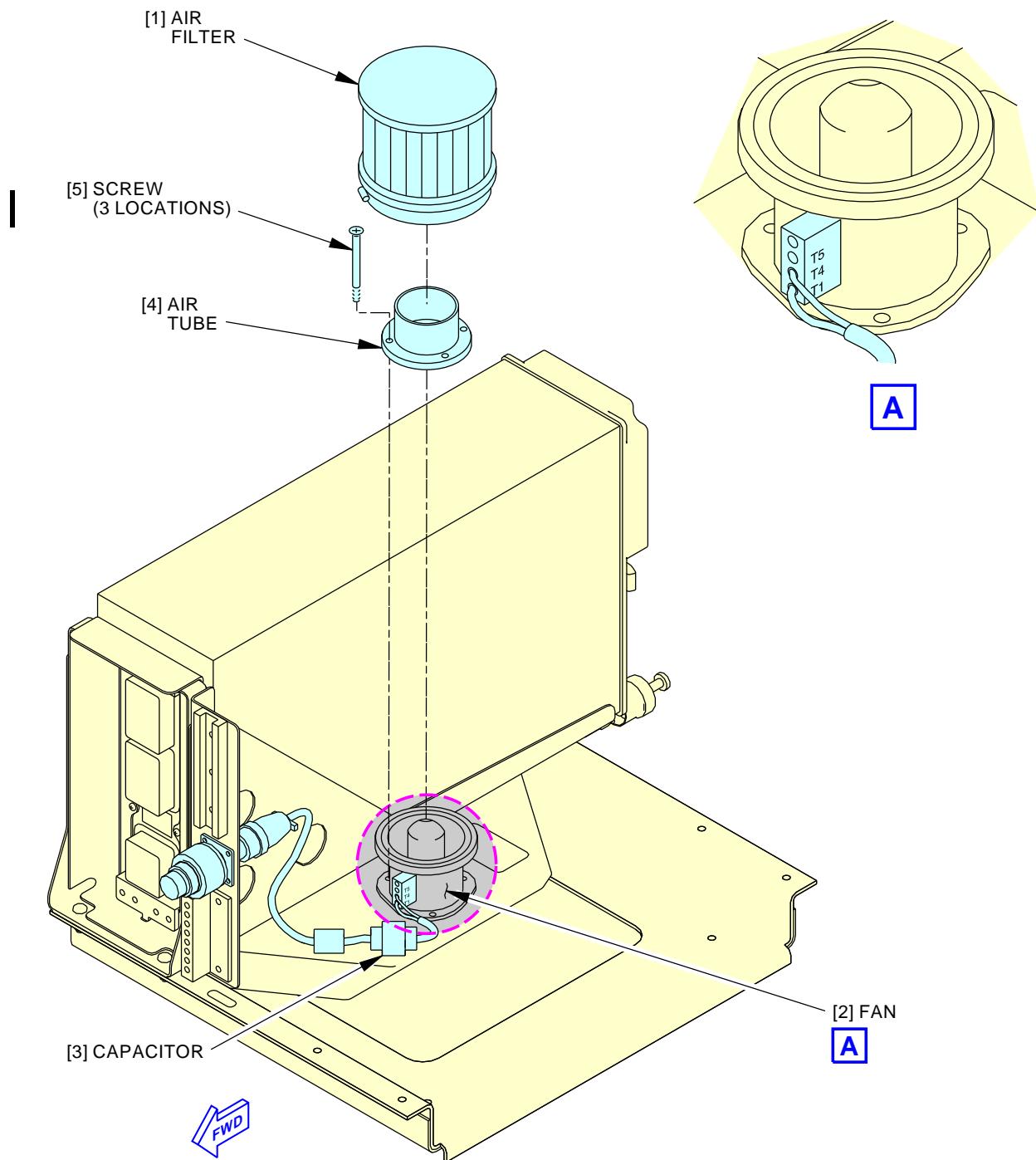
———— END OF TASK ————

EFFECTIVITY  
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**WEATHER RADAR PROCESSOR MOUNT FAN ASSEMBLY INSTALLATION**  
**Figure 401/34-43-52-990-801**

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**TASK 34-43-52-400-801**

**3. Weather Radar Processor Mount Fan Assembly Installation**

Figure 401

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-43-10-400-801	Weather Radar Processor Mount Fan Filter Installation (P/B 401)

**B. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
212	Flight Compartment - Right

**C. Access Panels**

Number	Name/Location
112A	Forward Access Door

**D. Installation Procedure**

SUBTASK 34-43-52-860-001

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-52-420-001

- (2) Install the fan [2] assembly on the mount:

- (a) Connect the leads to terminals T4 and T1 of the fan terminal block.
- (b) Place the fan [2] assembly on the mount
  - 1) Make sure that the air flow direction as shown on the fan label is correct.
- (c) Put the air tube [4] on the fan [2] assembly.
- (d) Attach the fan [2] assembly and the air tube [4] to the mount with the three screws [5].

SUBTASK 34-43-52-420-002

- (3) Do this task: Weather Radar Processor Mount Fan Filter Installation, TASK 34-43-10-400-801

SUBTASK 34-43-52-860-002

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-52-861-001

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

SUBTASK 34-43-52-700-001

- (6) Make sure that the fan [2] operates correctly.

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E. Put the Airplane Back to Its Usual Condition

SUBTASK 34-43-52-410-001

- (1) Close this access panel:

Number      Name/Location

112A            Forward Access Door

SUBTASK 34-43-52-862-001

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

———— END OF TASK ————

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WEATHER RADAR CONTROL PANEL - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the weather radar control panel.
  - (2) An installation of the weather radar control panel.
- B. The weather radar control panel is located in the flight compartment on the aft electronics panel, P8.

**TASK 34-43-91-000-801**

**2. Weather Radar Control Panel Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-43-91-860-001

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-91-020-001

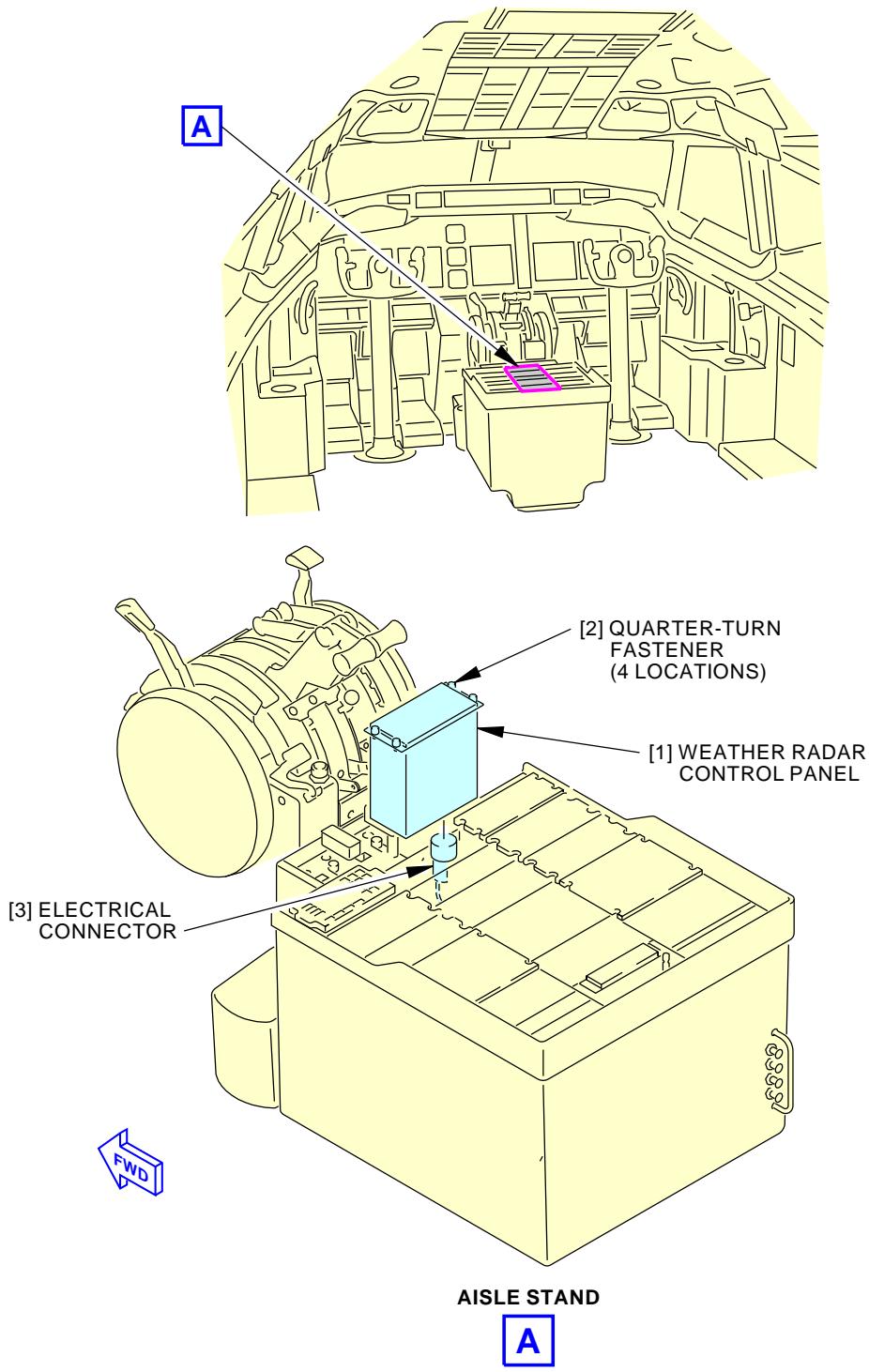
**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE WEATHER RADAR CONTROL PANEL. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE WEATHER RADAR CONTROL PANEL.

- (2) Do these steps to remove the weather radar control PANEL [1]:
  - (a) Loosen the four quarter-turn fasteners [2].
  - (b) Carefully lift the weather radar control PANEL [1] from the aft electronics panel, P8, to get access to the electrical connector [3].
  - (c) Disconnect the electrical connector [3].
  - (d) Put a protective cover on the electrical connector [3].

———— END OF TASK ————

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**Weather Radar Control Panel Installation**  
**Figure 401/34-43-91-990-801**EFFECTIVITY  
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**TASK 34-43-91-400-801**

**3. Weather Radar Control Panel Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	PANEL	34-43-91-06-050	AKS ALL

**C. Location Zones**

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

**D. Installation Procedure**

SUBTASK 34-43-91-860-003

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-43-91-420-001

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

- (2) Do these steps to install the weather radar control PANEL [1]:

- Remove the protective cover from the electrical connector [3].
- Examine the electrical connector for bent or broken pins, dirt, and damage.
- Connect the electrical connector [3].
- Put the weather radar control PANEL [1] in its position on the aft electronics control panel, P8.
- Tighten the four quarter-turn fasteners [2].

SUBTASK 34-43-91-860-004

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

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT



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**E. Installation Test**

SUBTASK 34-43-91-860-005

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

SUBTASK 34-43-91-860-037

- (2) Set the two GAIN control knobs on the weather radar control panel to the CAL position.

SUBTASK 34-43-91-860-011

- (3) Set the RANGE on the captain's and first officer's EFIS control panel to 40.

SUBTASK 34-43-91-860-012

- (4) Make sure that the captain's and first officer's EFIS displays are on.

SUBTASK 34-43-91-860-007

- (5) Make sure the air data inertial reference system is aligned. To align it, do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-43-91-860-008

**WARNING:** DO NOT OPERATE THE WEATHER RADAR WHEN PERSONNEL ARE IN THE AREA  
USUALLY CONTAINED BY THE AIRCRAFT NOSE RADOME. DO NOT OPERATE  
THE WEATHER RADAR IN A HANGAR. IF YOU DO NOT OBEY THESE  
PRECAUTIONS, INJURIES TO PERSONNEL CAN OCCUR.

**WARNING:** IF THERE IS FUEL LEAKAGE OR AN OPEN FUEL CELL LESS THAN 50 FT (15 M)  
FROM THE RADAR, DO NOT OPERATE THE WEATHER RADAR. IF THERE IS  
FUEL IN THE 50-FOOT RADIUS AROUND THE RADAR, IT CAN CAUSE A FIRE AND  
EXPLOSION. THESE CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO  
EQUIPMENT. THESE CAN KILL PERSONNEL.

- (6) Push the WXR switch on the captain's EFIS control panel to turn on the weather radar system.

SUBTASK 34-43-91-860-040

- (7) Push the WXR switch on the Captain's and First Officer's EFIS control panel to turn on the  
weather radar system.

SUBTASK 34-43-91-700-001

- (8) Set the System Control knob on the WXR control panel to NORM.

SUBTASK 34-43-91-860-045

- (9) Set the two Mode Select knobs on the WXR control panel to MAN.

(a) Make sure that 00o shows in the Weather Radar Altitude field of the Captain's and First  
Officer's display units (DUs).

(b) Make sure that WX-M shows in the WXR Mode field of the Captain's and First Officer's  
DUs.

SUBTASK 34-43-91-860-046

- (10) Set the two Mode Select knobs on the WXR control panel to AUTO.

(a) Make sure that WX-A shows in the WXR Mode field of the Captain's and First Officer's  
DUs.

SUBTASK 34-43-91-860-047

- (11) Set the two Mode Select knobs on the WXR control panel back to MAN.

SUBTASK 34-43-91-860-048

- (12) Turn the two ALT knobs on the WXR control panel.

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- (a) Make sure that the altitude in the WXR Altitude field changes from 000 to 600 in 1000 foot increments.

SUBTASK 34-43-91-860-017

- (13) Select TEST on the WXR radar control panel.

SUBTASK 34-43-91-210-002

- (14) Make sure that a green, yellow, red, magenta test pattern shows on the captains (first officers) display unit.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-43-91-860-018

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

———— END OF TASK ————

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TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Flight history data download from the TCAS.
  - (2) Traffic Alert and Collision Avoidance System Deactivation (TCAS).
  - (3) Traffic Alert and Collision Avoidance System Activation (TCAS).

**TASK 34-45-00-970-801**

**2. Flight History Data Download**

**A. General**

- (1) This procedure allows a complete listing of stored fault history information, and TA/RA events to be downloaded from the TPA-100 TCAS processor onto a portable PCMCIA flash card.
- (2) A blank PC ATA card with memory capability up to 512 megabytes, or a compact flash (CF) using an adapter may be used for the download procedures.

**B. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**C. Procedure**

SUBTASK 34-45-00-869-001

- (1) Make sure power to the TCAS Processor is turned off.
  - (a) Open this circuit breaker:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

SUBTASK 34-45-00-869-002

- (2) On the TCAS Processor, open the front panel access cover.

SUBTASK 34-45-00-869-003

- (3) Insert a blank PC ATA card into the PCMCIA slot.

SUBTASK 34-45-00-869-004

- (4) Close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

SUBTASK 34-45-00-869-005

- (5) Verify that there is a blinking red light in the PCMCIA slot.

SUBTASK 34-45-00-869-006

- (6) Verify that the following message displays on the LCD display on the front of the TCAS Processor.
  - (a) CARD INSERTED
  - (b) DUMP REQUEST

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(c) > GO BACK

NOTE: This message will stay on the screen for approximately five minutes.

SUBTASK 34-45-00-869-007

- (7) Verify that the following message displays on the LCD display on the front of the TCAS Processor when the data dump is complete.
- (a) CARD INSERTED
  - (b) DUMP COMPLETE
  - (c) > GO BACK

SUBTASK 34-45-00-869-008

- (8) Remove the PC ATA card from the TCAS Processor.

SUBTASK 34-45-00-869-009

- (9) Close the access cover.

SUBTASK 34-45-00-869-010

- (10) Restore the airplane to the usual condition

———— END OF TASK ————

**TASK 34-45-00-040-801**

**3. Traffic Alert and Collision Avoidance System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power to the TCAS system.

**B. Location Zones**

Zone	Area
100	Lower Half of Fuselage
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-45-00-860-043

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

**D. Traffic Alert and Collision Avoidance System - Tryout**

NOTE: This tryout is to make sure the TCAS system is in a zero energy state.

SUBTASK 34-45-00-860-044

- (1)

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS



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SUBTASK 34-45-00-740-003

- (2) On the ATC control panel, turn and release the mode select switch in the TEST position for one second.
  - (a) Make sure that you hear no sound from the flight compartment speakers.

———— END OF TASK ————

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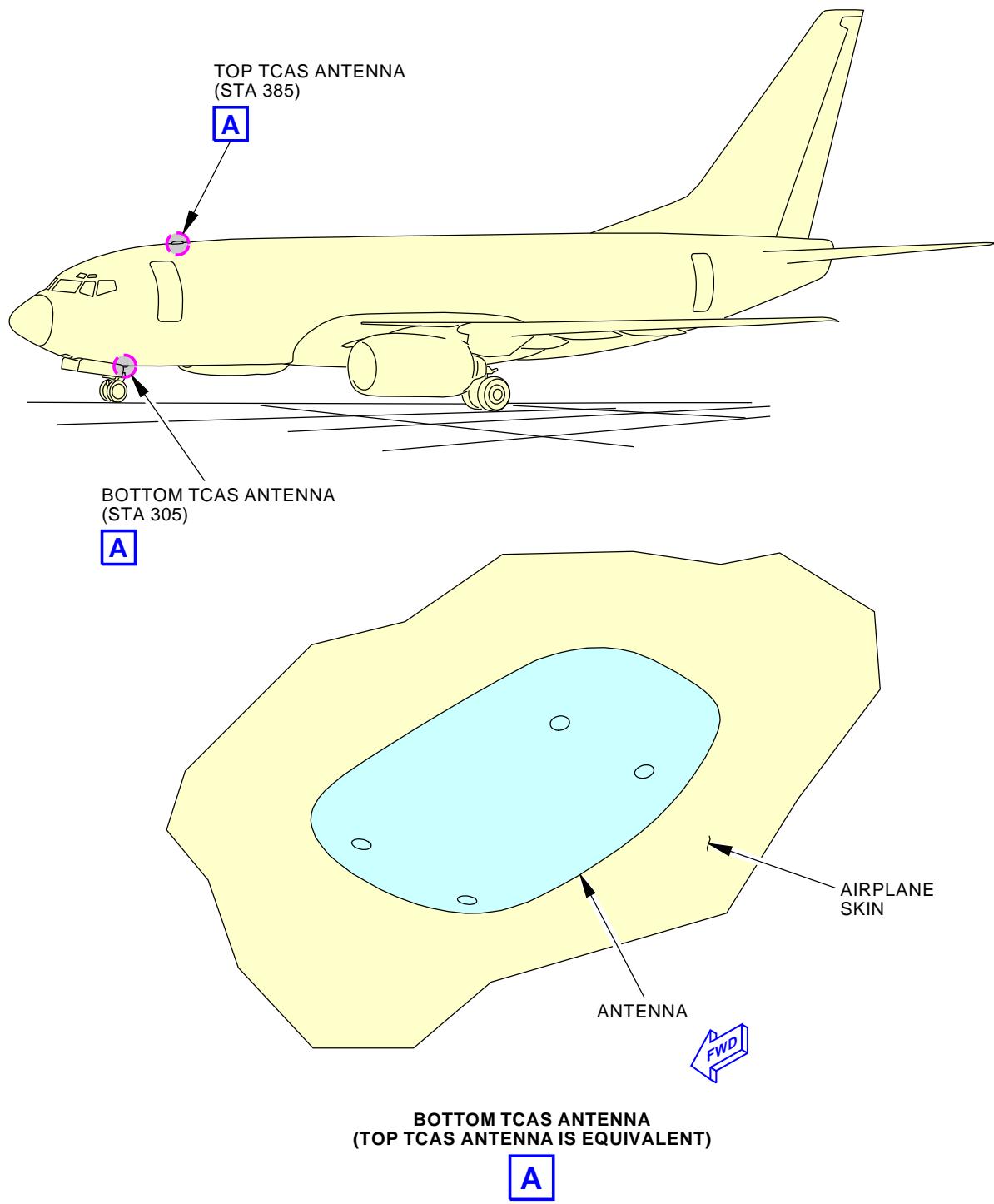
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**TCAS Antenna**  
Figure 201/34-45-00-990-802



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**TASK 34-45-00-440-801**

**4. Traffic Alert and Collision Avoidance System - Activation**

(Figure 201)

**A. General**

- (1) This procedure adds electrical power to the TCAS system.

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
100	Lower Half of Fuselage
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-45-00-860-045

**WARNING:** KEEP ALL PERSONNEL AT A SAFE DISTANCE FROM THE ANTENNA. RF ENERGY CAN CAUSE INJURIES TO PERSONNEL.

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	6	C01195	TCAS

———— END OF TASK ————

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TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
  - (1) TCAS operational test
  - (2) TCAS system test (With the IFR TCAS-201 Test Set)
  - (3) TCAS system test (With the TIC TR-220 Test Set)
  - (4) TCAS System Test (With the TIC T-49 Test Set).
  - (5) TCAS System Test (With the IFR-6000 Test Set).

**TASK 34-45-00-710-801**

**2. TCAS - Operational Test**

**A. General**

- (1) This test makes sure the TCAS operates correctly. It uses only the system's Built In Test Equipment (BITE) functions. Special test or ground equipment is not necessary.

**B. References**

Reference	Title
23-51-00-710-801	Flight Interphone System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
31-62-00-710-801	Common Display System - Operational Test (P/B 501)
34-21-00-710-801	Air Data Inertial Reference System - Operational Test (P/B 501)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
34-33-00-710-801	Low Range Radio Altimeter (LRRA) System - Operational Test (P/B 501)
34-53-00-710-801	Air Traffic Control System - Operational Test (P/B 501)

**C. Location Zones**

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

**D. Prepare for the Operational Test**

**SUBTASK 34-45-00-860-001**

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

**SUBTASK 34-45-00-860-002**

- (2) Make sure these systems are serviceable:
  - (a) Air Data System (TASK 34-21-00-710-801)
  - (b) Air Traffic Control System (TASK 34-53-00-710-801)
  - (c) Common Display System (TASK 31-62-00-710-801)



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- (d) Flight Interphone System (TASK 23-51-00-710-801)
- (e) Low Range Radio Altimeter System (TASK 34-33-00-710-801).

SUBTASK 34-45-00-860-003

- (3) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-45-00-860-004

- (4) Wait until the align light on the MSU goes off.
- SUBTASK 34-45-00-860-004
- (5) Put the display mode switch on the EFIS control panel to the MAP position.

SUBTASK 34-45-00-860-005

- (6) Set the range knob on the EFIS control panel to 10.
- SUBTASK 34-45-00-860-005
- (7) Put the mode select switch on the TCAS/ATC control panel to the TA/RA position.

SUBTASK 34-45-00-860-006

- (8) Push the TFC switch on the EFIS control panel.
- (a) Make sure the inboard display shows TFC.

SUBTASK 34-45-00-860-007

- (9) Put the transponder select switch on the TCAS/ATC control panel (referred to as the control panel for the rest of this section) to the 1 position.
- (a) Make sure the FAIL lamp on the control panel is off.

SUBTASK 34-45-00-860-008

- (10) Put the mode select switch on the control panel to the STBY position.
- (a) Make sure the inboard displays show the TCAS OFF indication.

SUBTASK 34-45-00-860-009

- (11) Put the mode select switch on the control panel to the TA position.
- (a) Make sure the inboard displays show the TA ONLY indication.

SUBTASK 34-45-00-860-010

- (12) Put the mode select switch on the control panel to the TA/RA position.
- (a) Make sure TA ONLY continues to show on the inboard displays.

## E. Procedure

SUBTASK 34-45-00-740-001

- (1) Do the operational test as follows:
  - (a) Turn and release the mode select switch on the control panel to the TEST position and hold it for one second.
  - (b) Make sure these results occur:
    - 1) The inboard displays show a test pattern as described below (Figure 501):
      - a) TCAS TEST shows on the left side of the inboard displays
      - b) The word TRAFFIC shows on the right side of the inboard displays
      - c) An R/A (red square) shows at 3 o'clock and flying level (no arrow).
      - d) A Traffic Advisory (yellow circle) shows at 9 o'clock and climbing (up arrow).



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- e) Proximity Traffic (solid white diamond) shows at 1 o'clock and descending (down arrow).
- f) Non-Threat Traffic (open white diamond) shows at 11 o'clock and flying level (no arrow).
- 2) Make sure the outboard displays show the DO NOT CLIMB and DO NOT DESCEND resolution advisory.
- 3) A TCAS SYSTEM TEST OK synthesized voice announcement comes on at the end of the test if the test passes.

SUBTASK 34-45-00-740-002

- (2) Do the operational test again with the transponder select switch on the control panel set to the 2 position.

SUBTASK 34-45-00-840-005

- (3) Make sure you return the ATC/TCAS mode switch on the ATC/TCAS panel to STBY position.

SUBTASK 34-45-00-860-011

- (4) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

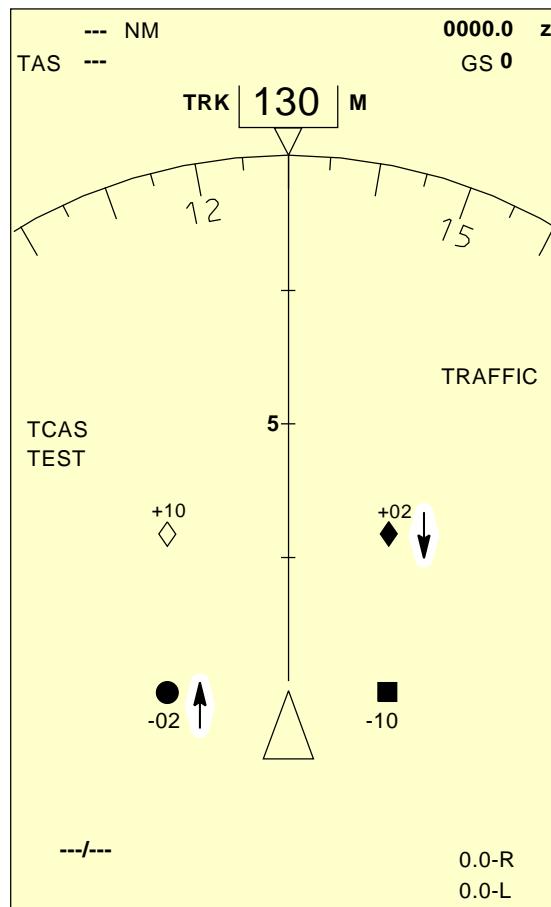
———— END OF TASK ————

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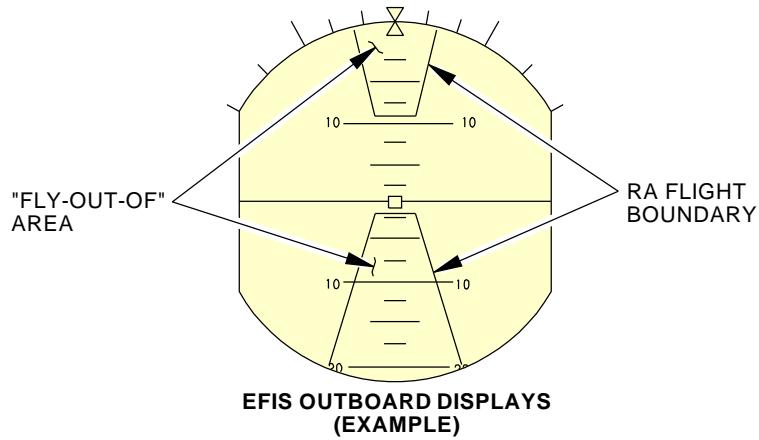
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EFIS INBOARD DISPLAYS  
(EXAMPLE)



N52759 S0006576950\_V3

TCAS Test Pattern  
Figure 501/34-45-00-990-801

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**TASK 34-45-00-730-801**

**3. TCAS - System Test (With the IFR TCAS-201 Test Set)**

**A. General**

- (1) This test is a complete system test of the TCAS system. The system test first runs the Operational Test, and then does a test of TCAS with ground test equipment.

**B. References**

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
34-11-00-790-802	Static and Total Air Pressure System - Pressurization (P/B 201)

**C. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1922	Test Set - Radio Altimeter Part #: 110-0430-100-02 Supplier: L04V3 Part #: 110-0460-105 Supplier: L04V3 Part #: 9599-607-15902 Supplier: F0052 Opt Part #: 110-0430-100 Supplier: L04V3
COM-4112	Test Set - Ramp, TCAS-201 Opt Part #: TCAS-201 Supplier: 51190



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D. Location Zones

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

E. Prepare for the System Test

SUBTASK 34-45-00-840-001

**CAUTION:** DO NOT OPERATE THE TEST SET WHEN THE TEST SET ANTENNA IS WITHIN 15 INCHES (38 CM) OF AIRPLANE ANTENNA. DAMAGE TO THE TEST SET CAN OCCUR.

- (1) Do the following steps to setup the TCAS-201 test set, COM-4112 using ground test method:

- (a) Put the TCAS-201 test set, COM-4112, antenna approximately 50 feet (15 meters) from the top TCAS antenna at an angle of 45 degrees off of the airplane center line.

NOTE: Use the antenna stand to prevent unnecessary movements to the test set antenna. Unnecessary movements can cause TCAS to loose tracking.

- 1) Make sure there is no obstruction between the TCAS antennas.

NOTE: If ground equipment, walkways or other objects that could cause a signal obstruction or a multipath problem are in the area, choose a more suitable location for the test set and change the setup in the test set accordingly.

- (b) Point the TCAS-201 test set, COM-4112, antenna in the direction of the applicable TCAS antenna.

NOTE: This allows the correct TCAS antenna to receive the strongest signal.

- (c) Push the POWER switch to supply power to the TCAS-201 test set, COM-4112.

- (d) Push the SET/CONT key on the TCAS-201 test set, COM-4112.

- (e) Enter the distance ( $\pm 5$  feet) between the TCAS-201 test set, COM-4112, antenna and the airplanes top TCAS antenna in the HORIZ field.

- (f) Enter 17 feet in the VERT field.

- (g) Enter the gain of the TCAS-201 test set, COM-4112, antenna in the GAIN field.

NOTE: The antenna gain should be listed on the test set antenna.

- (h) Enter the loss of the cable in the LOSS field.

NOTE: The cable loss values should be listed on the cable.

F. Test the TCAS system

SUBTASK 34-45-00-710-001

- (1) Do this task: TCAS - Operational Test, TASK 34-45-00-710-801.

- (a) Make sure the Operational Test passes.

SUBTASK 34-45-00-730-001

- (2) Do the TCAS Bearing Accuracy Test as follows:

- (a) Put the transponder select switch on the TCAS/ATC control panel (referred to as the control panel for the rest of this section) to the 1 position.

- (b) Put the mode select switch on the control panel to the TA position.



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- (c) Shield the bottom TCAS antenna.  
NOTE: This is to test the top TCAS antenna. You may have to get up high to be able to interrogate the top TCAS antenna from the rear of the airplane.
- (d) Push the SCEN key on the TCAS-201 test set, COM-4112, to show the scenario menu.
- (e) Set up this SCENARIO:
  - 1) INTRUDER TYPE: ATCRBS
  - 2) ALT = OFF
  - 3) RANGE: 8.0 nMi
  - 4) RATE: 0 kts
- (f) Push the RUN/STOP key to start the test.
- (g) Use the TCAS-201 test set, COM-4112, to interrogate the four quadrants of the TCAS antenna at bearings of 0, 45, 90, 180, 225, 270 degrees.  
NOTE: Make sure your inboard displays show the correct bearing of the intruder.
  - 1) Make sure the inboard displays show the intruder's correct bearing  $\pm 15$  degrees.
- (h) Shield the top TCAS antenna or move the TCAS-201 test set, COM-4112, antenna close to the bottom TCAS antenna (out of the line of sight from the top TCAS antenna).  
NOTE: This is to test the bottom antenna. If you move the TCAS-201 test set, COM-4112, you have to change the values in the setup screen accordingly.

**WARNING: MAKE SURE THE GROUND LOCKS ARE INSTALLED ON ALL THE LANDING GEAR BEFORE YOU MOVE THE CONTROL LEVER. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.**

- (i) Make sure the ground locks are installed on the nose and main landing gear. If ground locks are not installed, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.
- (j) Put the landing gear lever in the OFF position.
- (k) Do the steps in the Bearing Accuracy Test again for the bottom antenna.

SUBTASK 34-45-00-860-012

- (3) Do the Self-Test inhibit test:
  - (a) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.
  - (b) Turn and release the mode select switch on the control panel to the TEST position for one second.
    - 1) Make sure a TCAS self-test does not occur.

SUBTASK 34-45-00-860-013

- (4) Prepare to do the TCAS intruder Climb Resolution Advisory Test:
  - (a) Put the mode select switch on the control panel to the STBY position.
  - (b) Use the pitot/static air data model test set, COM-1914, to apply an altitude of 40,000 feet (Static and Total Air Pressure System - Pressurization, TASK 34-11-00-790-802).  
NOTE: The 40,000 feet barometric altitude is chosen to minimize false TCAS alert to TCAS equipped airplanes nearby.
  - (c) Connect the radio altimeter test set, COM-1922, to the airplane.

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- (d) Use the radio altimeter test set, COM-1922, and set the radio altitude to 2400 feet.

NOTE: Increase the radio altitude by 600 feet per minute (fpm) or less. TCAS RAs are inhibited below 1100 feet during climb. So TA ONLY shows below 1100 feet.

- 1) Make sure the inboard displays do not show the TA ONLY indication when radio altitude is greater than 1100 feet.

- (e) Put the EFIS control panel to the MAP mode and a range of 20 on the inboard displays.

- (f) Push the SCEN key to show the scenario menu.

- (g) Set up this scenario:

- 1) INTRUDER TYPE: ATCRBS
- 2) ALT = ON
- 3) RANGE: 8.0 nm
- 4) RATE: +500 kts
- 5) ALTITUDE: 39,900 ft

NOTE: Make sure the intruder's altitude is 100 feet below your airplane's barometric altitude. You can change the airplane's altitude or intruder setup on the test set to do this.

- 6) RATE: 0 fpm.

SUBTASK 34-45-00-860-014

- (5) Do the TCAS intruder Climb Resolution Advisory Test:

- (a) Push the RUN/STOP key to start the scenario, and look for this sequence on the EFIS display and flight compartment speaker:

- 1) The intruder moves down the 45 degree bearing mark toward the airplane symbol
- 2) The intruder has the correct relative altitude
- 3) The intruder begins as Non-threat Traffic (open white diamond)
- 4) The intruder changes to Proximate Traffic (solid white diamond)
- 5) The intruder changes to a Traffic Advisory (solid yellow circle)
- 6) The TCAS gives a "TRAFFIC, TRAFFIC" voice announcement on the flight compartment speaker
- 7) The intruder changes to a Resolution Advisory (solid red square), and gives a "climb climb" or "climb climb climb" voice announcement on the flight compartment speaker
- 8) The outboard displays show an RA resolution to pull up
- 9) Shortly before the intruder reaches the closest point of approach, the TCAS gives an "increase climb" voice announcement on the flight compartment speaker
- 10) Shortly after the intruder reaches the airplane symbol on the inboard displays, TCAS gives a "Clear of Conflict" voice announcement on the flight compartment speaker.

NOTE: The "Clear of Conflict" voice announcement sometimes may not be given.

- (b) Push the RUN/STOP key on the TCAS-201 test set, COM-4112.

SUBTASK 34-45-00-860-015

- (6) Prepare to do the TCAS intruder Descend Resolutionary Advisory Test:

- (a) Put the transponder select switch on the control panel to the 2 position.

- (b) On the TCAS-201 test set, COM-4112, push the SCEN key to display the scenario menu.

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- (c) Set up this scenario:
- 1) INTRUDER TYPE: Mode S
  - 2) RANGE: 8.0 nm
  - 3) RATE: +500 kts
  - 4) ALTITUDE: 40,100 ft

NOTE: Make sure the intruder's altitude is 100 feet above your airplanes barometric altitude. You can change the airplane's altitude or intruder setup on the test set to do this.

- 5) RATE: 0 fpm.

SUBTASK 34-45-00-730-002

- (7) Do the TCAS intruder Descend Resolutionary Advisory Test:

- (a) Push the RUN/STOP key to start the scenario, and look for this sequence on the EFIS display and flight compartment speaker:
- 1) The intruder moves down the 45 degree bearing mark toward the airplane symbol.
  - 2) The intruder has the correct relative altitude.
  - 3) The intruder begins as Non-threat Traffic (open white diamond).
  - 4) The intruder changes to Proximate Traffic (solid white diamond)
  - 5) The intruder changes to a Traffic Advisory (solid yellow circle).
  - 6) The TCAS gives a "TRAFFIC, TRAFFIC" voice announcement on the flight compartment speaker.
  - 7) The intruder changes to a Resolution Advisory (solid red square), and gives a "descend, descend" or "descend, descend, descend" voice announcement on the flight compartment speaker.
  - 8) The outboard displays show an RA resolution to push down.
  - 9) Shortly before the intruder reaches the closest point of approach, the TCAS gives an "increase descent" voice announcement on the flight compartment speaker.
  - 10) Shortly after the intruder reaches the airplane symbol on the inboard displays, TCAS gives a "Clear of Conflict" voice announcement on the flight compartment speaker.

NOTE: The "Clear of Conflict" voice announcement sometimes may not be given.

- (b) Push the RUN/STOP key to stop the Scenario.

SUBTASK 34-45-00-860-016

- (8) Prepare to do the High Altitude Climb Inhibit Test:

- (a) Use the pitot/static air data model test set, COM-1914, to make a simulated altitude of 48,500 feet.

NOTE: Let the VSI return to zero after the simulated altitude is reached.

- (b) Push the SCEN key on the TCAS-201 test set, COM-4112, to show the scenario menu.

- (c) Set up this scenario:

- 1) RANGE: 4.2 nMi
- 2) RATE: +500 kts
- 3) ALTITUDE: 48,300 ft
- 4) RATE: 0 fpm

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SUBTASK 34-45-00-860-017

- (9) Do the High Altitude Climb Inhibit Test:

(a) Push the RUN/STOP key to start the scenario.

(b) Make sure that the relative altitude of the intruder is -02.

NOTE: If the relative altitude of the intruder is not -02, increase or decrease your airplane's accordingly.

(c) Make sure TCAS gives the "TRAFFIC, TRAFFIC" annunciation.

(d) Make sure TCAS gives the "Monitor Vertical Speed" annunciation.

NOTE: A crossing descend resolution advisory may be given instead of the Monitor Vertical Speed resolution advisory. Decrease the intruder's altitude or increase the airplane's altitude to correct this.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-45-00-860-018

- (1) Return the airplane back to field level altitude.

SUBTASK 34-45-00-860-019

- (2) Use the radio altimeter test set, COM-1922, to bring down the radio altitude to 0 feet.

NOTE: Decrease the radio altitude by 600 feet per minute (fpm) or less. RAs are inhibited below 900 feet during descent, so TA ONLY will show at low altitude.

(a) Make sure the inboard displays show the TA ONLY indication when radio altitude is less than 900 feet.

SUBTASK 34-45-00-840-006

- (3) Make sure you return the ATC/TCAS mode switch on the ATC/TCAS panel to STBY position.

SUBTASK 34-45-00-840-010

- (4) Do this test: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802

SUBTASK 34-45-00-840-011

- (5) Put the landing gear lever in the DN position.

SUBTASK 34-45-00-080-006

- (6) Remove the installed test sets:

(a) TCAS-201 test set, COM-4112.

(b) radio altimeter test set, COM-1922.

(c) air data model test set, COM-1914.

SUBTASK 34-45-00-080-007

- (7) Remove the TCAS antenna shield, if installed.

SUBTASK 34-45-00-080-008

- (8) If not necessary, remove the dropdown lock pins installed in the nose and main landing gear.  
Do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801

— END OF TASK —

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**TASK 34-45-00-730-804**

**4. TCAS - System Test (With the TIC TR-220 Test Set)**

(Figure 502)

**A. General**

- (1) This task gives the instructions on how to do the Traffic Alert and Collision Avoidance System (TCAS) system test with the TR-220 test set.
- (2) The TR-220 lets the mechanic manually select a scenario already pre-programmed in the test set. The test set simulates an intruder aircraft converging on the position of the airplane under test. The mechanic can then observe the TCAS display to make sure that the correct TA (Traffic Advisory) and RA (Resolution Advisory) are presented on the display.

**B. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-11-00 P/B 201	STATIC AND TOTAL AIR PRESSURE SYSTEM - MAINTENANCE PRACTICES

**C. Tools/Equipment**

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

Reference	Description
COM-906	Tester - Air Data/Pitot Static Part #: 6005KTQA1-103 Supplier: 35012 Part #: ADTS552F Supplier: U0427 Part #: MODEL 6300 Supplier: 0RDZ5 Opt Part #: ADTS505 Supplier: U0427
COM-10728	Test Set - Ramp, TR-220 Part #: TR-220 Supplier: 92606

**D. Location Zones**

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

**E. Prepare for the System Test**

**SUBTASK 34-45-00-860-046**

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

**SUBTASK 34-45-00-010-001**

- (2) Open the TR-220 ramp test set, COM-10728 cover.

**SUBTASK 34-45-00-010-002**

- (3) Release the two push button holders and remove the test set cover.

**SUBTASK 34-45-00-480-002**

- (4) Install the directional antenna for the TR-220 ramp test set, COM-10728 as follows:

NOTE: The directional antenna is the only antenna that can be used for the TCAS test.

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- (a) If you will install the antenna on the test set case, slide the mounting tabs into the slots on the test set.

NOTE: The slots are located on the front of the test set case.

- (b) If you will hold the antenna by hand, attach the supplied handle to the bottom of the antenna and hand tighten only.

NOTE: You can also attach the antenna to a tripod. This will increase its stability in high wind conditions.

**SUBTASK 34-45-00-710-004**

- (5) Do this task: (TCAS - Operational Test, TASK 34-45-00-710-801).

- (a) Make sure the Operational Test passes.

**SUBTASK 34-45-00-940-001**

- (6) Prepare the TR-220 ramp test set, COM-10728 for the test as follows:

- (a) Set the UUT FUNCTION switch to the SETUP position.

- (b) Move the TEST SET switch to the ON position.

- 1) Make sure that the GREEN LED is on.

- (c) Toggle the AUTO/MANUAL switch to locate the ANT GAIN menu on the test set display.

- (d) Use the UP/FWD, DOWN/REV switch to enter the 1030 MHz and 1090 MHz gain values for the antenna.

- (e) Move the TEST SET switch to OFF position.

NOTE: The values will remain in the test set memory. You will only need to enter the values again if you will repair or replace the antenna.

- (f) Connect the antenna connectors to the ANTENNA SUM and DIFF ports on the test set front panel.

NOTE: If you will hand hold or install the antenna on a tripod, connect the extender cable that is supplied with the test set. Make sure that you match the color coded cables correctly. If the connections are reverse, the test set display will show a fault. This tells the mechanic to examine the connections.

**SUBTASK 34-45-00-480-003**

- (7) Place the test set directional antenna 10 ft (3 m) to 170 ft (52 m) from the airplane under test as follows:

- (a) Make sure that there is no obstruction between the antenna and the airplane under test.

- (b) Point the directional antenna to the TCAS antenna on the airplane.

**SUBTASK 34-45-00-480-004**

- (8) Move the TEST SET switch to the ON position.

- (a) Make sure that GREEN LED is on.

**SUBTASK 34-45-00-480-005**

- (9) Toggle the AUTO/MANUAL switch to locate the T/S Distance menu on the test set display.

**SUBTASK 34-45-00-480-006**

- (10) Use the UP/FWD, DOWN/REV switch to enter the approximate distance between the test set and the airplane TCAS antenna.

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SUBTASK 34-45-00-480-007

- (11) If it is necessary, turn the antenna to gain a strong RF signal as follows:

NOTE: A steady LED indicates a strong signal. Adjustment to the antenna orientation is not necessary.

- (a) If you see a blinking LED on the antenna optical sight, turn the antenna to gain a strong RF signal.

NOTE: A TURN indicator may also appear on the display. By slowly turning the antenna, the TURN indicator will spin slower until a lock is obtained and the test set will show the appropriate display.

NOTE: When the test is inside a hangar, signal reflections can cause erroneous TURN indications. If this happens, remove the antenna cable connection from the DIFF port. This will not affect the test results.

SUBTASK 34-45-00-480-008

- | (12) Connect the air data/pitot static tester, COM-906 to the airplane so that you can pressurize the two air data computers (STATIC AND TOTAL AIR PRESSURE SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-11-00/201).

### F. TCAS System Test (With the TIC TR-220)

SUBTASK 34-45-00-730-007

- (1) Move the UUT FUNCTION switch to the TCAS position.

NOTE: The test set will first measure transmit power and frequency. The measurements are approximate values and used for reference purposes only.

SUBTASK 34-45-00-210-001

- (2) Press the AUTO/TEST/MANUAL switch and look for the Mode S address in the test set display.

SUBTASK 34-45-00-730-008

- (3) Press the AUTO/TEST/MANUAL switch to access the TCAS scenario selection screen.

NOTE: Random scenario samples that will result in proper intruder convergence in an RA and/or TA on the display are listed in the table that follows.

Test Set TCAS Scenarios

Scenario # <sup>[1]</sup>	Airplane Altitude (ft) (Pumped Up)	Intruder Starting Altitude (ft) <sup>[2]</sup>	Intruder Speed (kts)	TCAS Distance (nmi)	Intruder Vertical Speed (fpm)
1	-1000	2000	180	10	-900
2	-500	1000 ft	300	15	-500
3	0	0	600	20	0
4	500	1000	300	25	-100
5	1000	3500	180	25	-300
6	5000	4000	300	25	200
7	7500	9500	600	40	-500
8	10000	15000	180	50	-300
9	12500	7500	300	25	1000

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**Test Set TCAS Scenarios (Continued)**

Scenario # <sup>[1]</sup>	Airplane Altitude (ft) (Pumped Up)	Intruder Starting Altitude (ft) <sup>[2]</sup>	Intruder Speed (kts)	TCAS Distance (nmi)	Intruder Vertical Speed (fpm)
10	15000	30000	600	30	-5000
11	17500	34000	180	15	-3300
12	20000	10000	300	50	1000
13	25000	41500	600	30	5500
14	33000	50000	180	30	-1700
15	42000	15000	300	25	5400
16	49000	31000	600	45	4000
17	3000	5000	300	25	-400
18	3500	2000	180	45	-100
19	4500	2500	300	50	200
20	7500	3000	600	45	1000
21	8500	10000	180	15	-300
22	9000	15000	300	30	1000

\*[1] If these scenarios are not in the test set memory or a scenario with different parameters is necessary, refer to the test set operational manual to program the parameters into the test set memory.

\*[2] Starting altitudes above or below the airplane altitude simulates an intruder converging from above or below the airplane under test.

**SUBTASK 34-45-00-730-009**

- (4) Use the UP/FWD, DOWN/REV switch to select the intruder scenario.

**SUBTASK 34-45-00-730-010**

- (5) Use the air data/pitot static tester, COM-906 to apply an altitude of 10,000 feet.

**SUBTASK 34-45-00-730-011**

- (6) If it is necessary, toggle the INCREASE-DECREASE VELOCITY switch to select the intruder speed.

**SUBTASK 34-45-00-730-012**

- (7) Do the test for each intruder type with the ATCRBS/AIR - MODE S/GND switch as follows:
  - (a) For TCAS I type intruder, move the switch to the ATCRBS position.
  - (b) For TCAS II type intruder, move the switch to the Mode S position.

**SUBTASK 34-45-00-860-047**

- (8) Set the mode selector on the ATC/TCAS transponder panel to the TA/RA position.
  - (a) Make sure you see the TCAS test pattern on the EFIS inboard and outboard displays (Figure 501).

**SUBTASK 34-45-00-730-013**

- (9) Press the AUTO/TEST/MANUAL switch to AUTO and do these steps:

NOTE: The test set is now simulating the intruder aircraft from the selected scenario. The STP that is on the test set display indicates that the intruder aircraft is stopped at the initial position.

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- (a) If the airplane equipment is an ATCRBS transponder, make sure that the display show ACQ.
- (b) If the airplane equipment is a Mode S transponder, make sure that the display initially show ACQ then change to TRK.

SUBTASK 34-45-00-730-014

- (10) Toggle the TO/START - FROM/STOP switch to the TO position to start the intruder aircraft convergence on the airplane under test.

NOTE: The test set display will show the altitude, range, speed and climb rate of the intruder simulation.

SUBTASK 34-45-00-210-002

- (11) Make sure that the correct indications for traffic and resolution advisories show in the TCAS display.

NOTE: When the intruder simulation range reaches 0 nmi, the test set will reverse the heading. The intruder aircraft will then return to the start point. This will continue back and forth until the operator stops the simulation.

SUBTASK 34-45-00-730-015

- (12) Toggle the TO/START - FROM/STOP switch to the STOP position.

NOTE: During the simulation, you may stop and hold the intruder aircraft at any range.

SUBTASK 34-45-00-550-001

- (13) Move the TR-220 ramp test set, COM-10728 to a different location around the airplane under test.

NOTE: Place the directional antenna 10 ft (3 m) to 170 ft (52 m) from the airplane. If it is necessary, turn the antenna to gain a strong RF signal

SUBTASK 34-45-00-210-003

- (14) Make sure that the correct azimuth information is on the TCAS display.

SUBTASK 34-45-00-730-016

- (15) Toggle the TO/START - FROM/STOP switch to the START position to start the intruder simulation at the different location.

SUBTASK 34-45-00-940-002

- (16) If it is necessary, you can adjust the scenario parameters without changing the stored parameters as follows:
  - (a) Make sure that the TCAS scenario is on the test set display.
  - (b) Press the TO/START-FROM/STOP switch up twice.
  - (c) Make sure that the scenario window show STP.
  - (d) Move the CHN/ALT - DIST-VERT SPEED switch the relative position of the parameter you want to change.
  - (e) Move the UP-DOWN switch to change the intruder altitude or distance or vertical speed.
  - (f) Move the INCREASE - DECREASE VELOCITY as necessary to change the intruder speed.
  - (g) Press the TO/START - FROM/STOP switch up and verify that the simulation is on again.

SUBTASK 34-45-00-730-017

- (17) Move the TEST SET switch to OFF after you finish the test.

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**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-45-00-860-048

- (1) Return the ATC/TCAS mode switch on the ATC/TCAS panel to STBY position.

SUBTASK 34-45-00-800-001

- (2) Remove the directional antenna from the TR-220 ramp test set, COM-10728.

SUBTASK 34-45-00-410-001

- (3) Install and close the TR-220 ramp test set, COM-10728 cover.

SUBTASK 34-45-00-800-002

- (4) Disconnect the air data/pitot static tester, COM-906 from the airplane (STATIC AND TOTAL AIR PRESSURE SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 34-11-00/201).

SUBTASK 34-45-00-860-049

- (5) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

———— END OF TASK ————

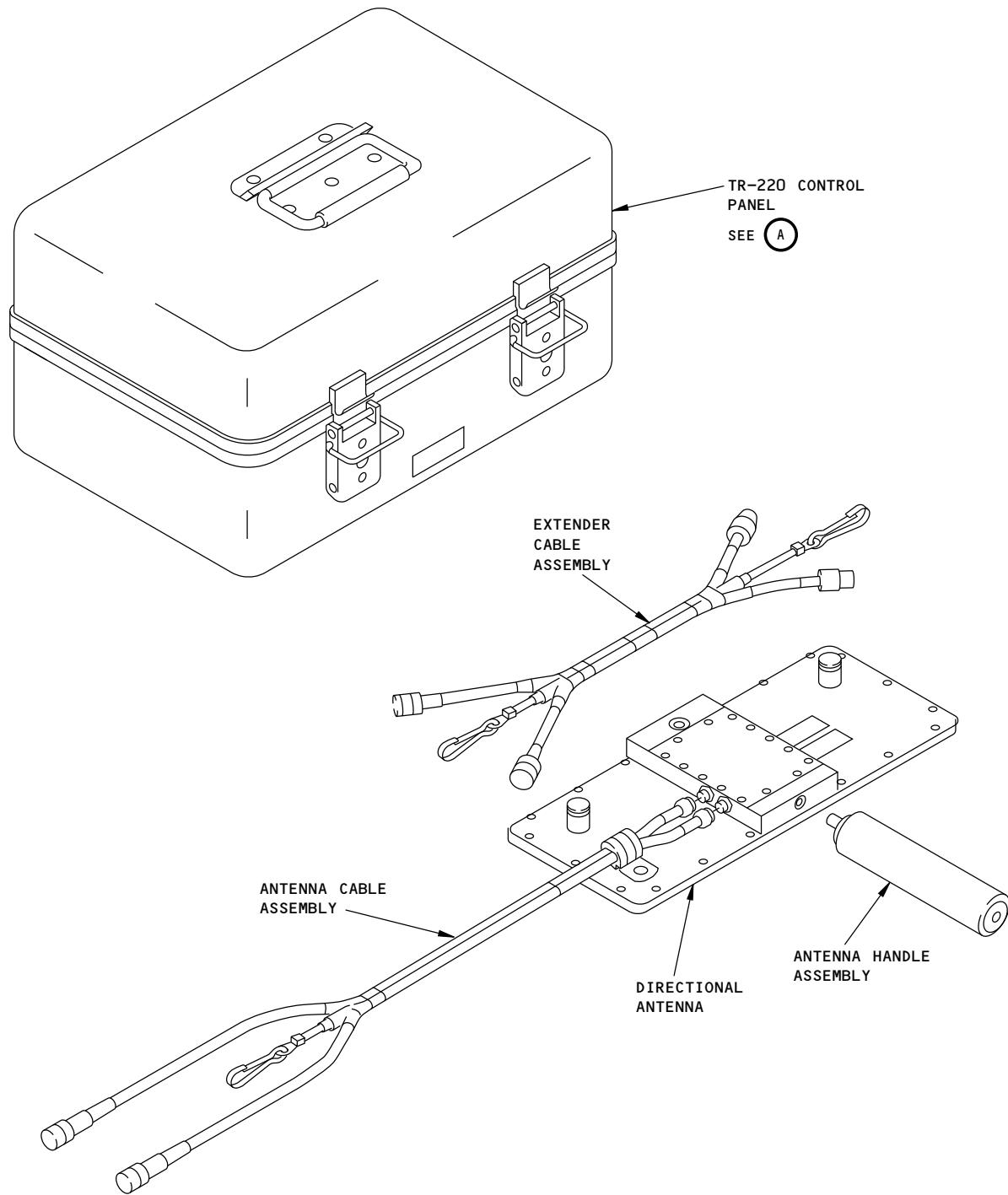
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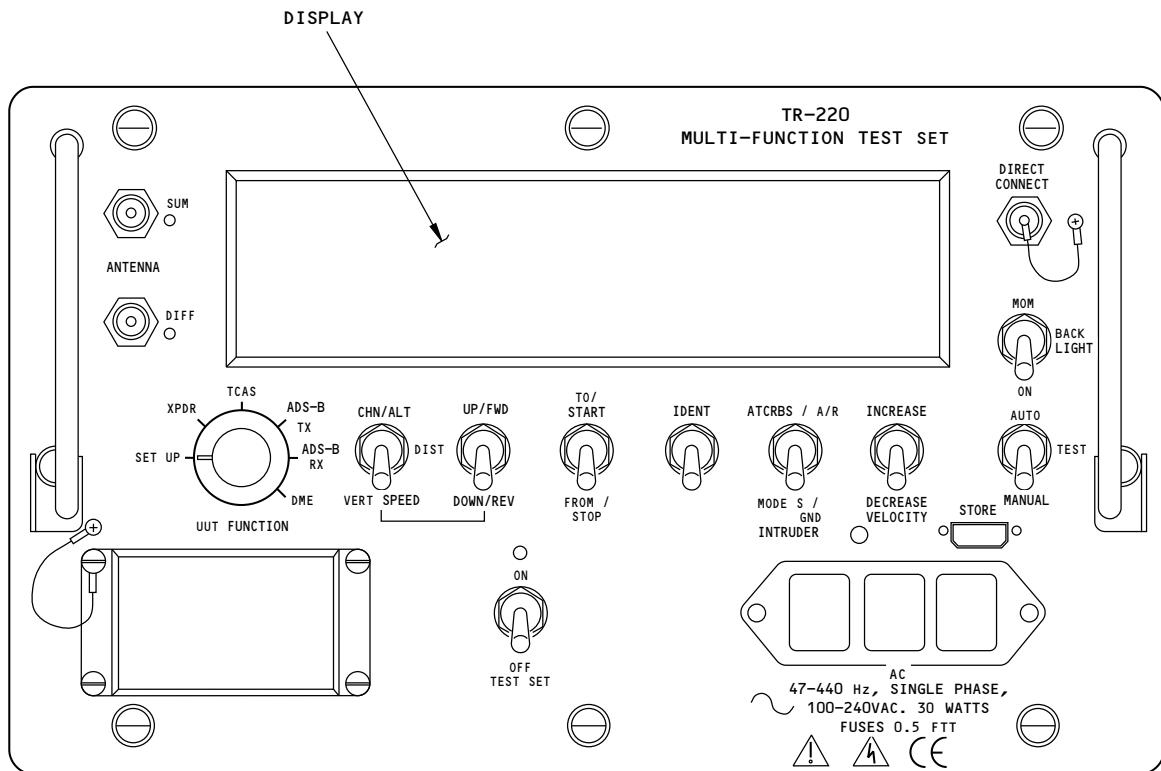
TR-220 Multifunction Test Set  
Figure 502/34-45-00-990-803 (Sheet 1 of 2)

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TR-220 CONTROL PANEL

(A)

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TR-220 Multifunction Test Set  
Figure 502/34-45-00-990-803 (Sheet 2 of 2)

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**TASK 34-45-00-730-802**

**5. TCAS - System Test (with the TIC T-49 Test Set)**

**A. General**

- (1) This test is a complete system test of the TCAS. The system test first runs the TCAS Operational Test, and then does a test of the TCAS using ground test equipment.

**B. References**

Reference	Title
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
34-11-00-790-802	Static and Total Air Pressure System - Pressurization (P/B 201)

**C. Tools/Equipment**

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

Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1922	Test Set - Radio Altimeter Part #: 110-0430-100-02 Supplier: L04V3 Part #: 110-0460-105 Supplier: L04V3 Part #: 9599-607-15902 Supplier: F0052 Opt Part #: 110-0430-100 Supplier: L04V3
COM-13601	Test Set - Ramp, T-49C Opt Part #: T-49C Supplier: 92606



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**D. Location Zones**

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

**E. Prepare for the System Test**

SUBTASK 34-45-00-860-022

- (1) Do the following steps to setup the T-49C ramp test set, COM-13601:
  - (a) Put the T-49C ramp test set, COM-13601, antenna about 50 feet (15 meters) in front of the airplane on the center line.
    - 1) Make sure there is no obstruction between the TCAS antennas.

NOTE: If ground equipment, people, walkways or other objects that could cause a signal obstruction or a multipath problem are in the area, move the test set within 15 to 30 feet (4.6-9.1 meters) of the airplane.
  - (b) Point the T-49C ramp test set, COM-13601, antenna in the direction of the applicable TCAS antenna.

SUBTASK 34-45-00-860-023

- (2) Connect the cable of the T-49C ramp test set, COM-13601, antenna to the T-49C ramp test set, COM-13601, antenna connector.

SUBTASK 34-45-00-860-024

- (3) Put the transponder select switch on the TCAS/ATC control panel (referred to as the control panel for the rest of this section) to the 1 position.

**F. Test the TCAS system**

SUBTASK 34-45-00-710-002

- (1) Do this task: TCAS - Operational Test, TASK 34-45-00-710-801.
  - (a) Make sure the Operational Test passes.

SUBTASK 34-45-00-860-025

- (2) Do the Self-Test Inhibit Test:
  - (a) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.
  - (b) Turn and release the mode select switch on the control panel to the TEST position.
    - 1) Make sure a TCAS self-test does not occur.

SUBTASK 34-45-00-860-026

- (3) Prepare to do the TCAS Bearing Accuracy Test:
  - (a) Connect the radio altimeter radio altimeter test set, COM-1922, to the airplane.
  - (b) Use the radio altimeter radio altimeter test set, COM-1922, to make a radio altitude of 2400 feet.

NOTE: Increase the radio altitude by 600 feet per minute (fpm) or less. RAs are inhibited below 1100 feet during climb. So TA ONLY will show below 1100 feet.

    - 1) Make sure the inboard displays do not show the TA ONLY indication when the radio altitude is greater than 1100 feet.



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- (c) Connect a pitot/static air data model test set, COM-1914, to the airplane so you can pressurize the two air data computers (TASK 34-11-00-790-802).
- (d) Use the pitot/static air data model test set, COM-1914, to make a barometric altitude of 40,000 feet.

NOTE: The 40,000 feet barometric altitude is chosen to minimize false TCAS alert to TCAS equipped airplanes nearby. Make sure to have altitude reporting function of the ATC off or put the ATC system on standby during this procedure.

- (e) Put the EFIS control panel to MAP mode and a range of 20 on the inboard displays.
- (f) Put the mode select switch on the control panel to the TA position.
- (g) Supply power to the T-49C ramp test set, COM-13601.

SUBTASK 34-45-00-860-027

- (4) Do the TCAS Bearing Accuracy Test as follows:
  - (a) Put the intruder type switch on the T-49C ramp test set, COM-13601, to the ATCRBS position.
  - (b) Put the scenario switch on the T-49C ramp test set, COM-13601, to the fixed intruder scenario position (+1000).
  - (c) Shield the bottom TCAS antenna.

NOTE: This is to test the top TCAS antenna. You may have to get up high to be able to interrogate the top TCAS antenna from the rear of the airplane.
  - (d) Push the interrogate switch on the T-49C ramp test set, COM-13601.
    - 1) Make sure the T-49C ramp test set, COM-13601, display shows the type of intruder selected.
  - (e) Use the T-49C ramp test set, COM-13601 to interrogate the four quadrants of the TCAS antenna at bearings of 0, 45, 90, 180, 225, and 270 degrees.
    - 1) Make sure the inboard displays show the intruders bearing within  $\pm 15$  degrees.
  - (f) Put the scenario switch on the T-49C ramp test set, COM-13601 to the fixed intruder scenario position (-1000).
  - (g) Put the power setting to low (LO) on the T-49C ramp test set, COM-13601.

NOTE: A HI power setting can increase the likelihood of multipath problem.
  - (h) Shield the top TCAS antenna or move the test set antenna to the bottom TCAS antenna (out of the line of sight from the top TCAS antenna).

NOTE: This is to test the bottom TCAS antenna. You may have to get up high to be able to interrogate the top TCAS antenna from the rear of the airplane.

**WARNING: MAKE SURE THE GROUND LOCKS ARE INSTALLED ON ALL THE LANDING GEAR BEFORE YOU MOVE THE CONTROL LEVER. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.**

- (i) Make sure the ground locks are installed on the nose and main landing gear. To install the ground locks, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.
- (j) Put the landing gear lever in the OFF position.
- (k) Use the test set to interrogate the four quadrants of the TCAS antenna at bearings of 0, 45, 90, 180, 225, and 270 degrees.

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- 1) Make sure the inboard displays show the intruders bearing within  $\pm 15$  degrees.

SUBTASK 34-45-00-860-028

(5) Do the TCAS Intruder Test:

- (a) Put the mode select switch on the control panel to the TA/RA position.
- (b) Put the T-49C ramp test set, COM-13601, directional antenna 45 degrees to the right of the center line of the airplane with a 50 feet separation from the airplane.  
NOTE: The directional antenna will send signals to the TCAS antenna.
- (c) Put the scenario switch on the T-49C ramp test set, COM-13601, to the straight approach 14 nMi position.
- (d) Put the intruder type switch on the T-49C ramp test set, COM-13601 to the MODE S position.
- (e) Push the interrogate switch.
  - 1) Make sure the T-49C ramp test set, COM-13601, display shows the correct intruder type.
- (f) Push the interrogate switch to start the scenario.
  - 1) Make sure the T-49C ramp test set, COM-13601, display shows the airplane's altitude  $\pm 100$  feet and the correct scenario (Range 14 nMi, Co-Altitude, Closure rate 720 kts).
- (g) Increase the airplane's altitude by 200 feet.
- (h) Make sure this sequence shows on the EFIS secondary display and the voice announcements are heard on the flight compartment speakers:
  - 1) The intruder ascends to the airplane symbol from the 45 degree bearing mark.
  - 2) The intruder begins as Non-threat Traffic (open white diamond).
  - 3) The intruder changes to Proximate Traffic (solid white diamond).
  - 4) The intruder changes to a Traffic Advisory (solid yellow circle).
  - 5) The TCAS gives a "TRAFFIC, TRAFFIC" voice announcement on the flight compartment speaker.
  - 6) The intruder changes to a Resolution Advisory (solid red square), and gives a "climb climb" or "climb, climb, climb" voice announcement on the flight compartment speaker.
  - 7) The outboard displays show a vertical resolution to pull up.
  - 8) Before the intruder gets to the closest point of approach, the TCAS possibly will give an "increase climb" voice announcement on the flight compartment speaker.
  - 9) Shortly after the intruder reaches the airplane symbol on the inboard displays, TCAS gives a "Clear of Conflict" voice announcement on the flight compartment speaker.  
NOTE: Some T-49C ramp test set, COM-13601, software will not allow the "Clear of Conflict" voice announcement to occur.
- (i) Put the intruder type switch on the T-49C ramp test set, COM-13601, to the TCAS position.
- (j) Push the interrogate switch.
  - 1) Make sure the T-49C ramp test set, COM-13601, display shows the correct intruder type.

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- (k) Push the interrogate switch to start the scenario.
  - 1) Make sure the T-49C ramp test set, COM-13601, display shows the airplane's altitude  $\pm 100$  feet and the correct scenario (Range 14 nMi, Co-Altitude, Closure rate 720 kts).
- (l) Decrease the airplane's altitude by 200 feet.
- (m) Make sure this sequence shows on the inboard displays display:
  - 1) The intruder descends to the airplane symbol from the 45 degree bearing mark.
  - 2) The intruder begins as Non-threat Traffic (open white diamond).
  - 3) The intruder changes to Proximate Traffic (solid white diamond).
  - 4) The intruder changes to a Traffic Advisory (solid yellow circle).
  - 5) The TCAS gives a "TRAFFIC, TRAFFIC" voice announcement on the flight compartment speaker.
  - 6) The intruder changes to a Resolution Advisory (solid red square), and gives a "descend, descend" or "descend, descend, descend" voice announcement on the flight compartment speaker.
  - 7) The outboard displays show a vertical resolution to push down.
  - 8) Before the intruder gets to the closest point of approach, the TCAS possibly will give an "increase descent" voice announcement on the flight compartment speaker.
  - 9) Shortly after the intruder reaches the airplane symbol on the inboard displays, TCAS gives a "Clear of Conflict" voice announcement on the flight compartment speaker.

**NOTE:** Some T-49C ramp test set, COM-13601, software will not allow the "Clear of Conflict" voice announcement to occur.

SUBTASK 34-45-00-860-029

- (6) Do the High Altitude Climb Inhibit Test:
  - (a) Put the transponder select switch on the control panel to the 2 position.
  - (b) Use the pitot/static air data model test set, COM-1914, to make a simulated altitude of 49,000 feet.
  - (c) Do the previous TCAS intruder scenario test again.
    - 1) Make sure TCAS does not give a CLIMB corrective action.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-45-00-860-030

- (1) Return the airplane back to field level altitude.

SUBTASK 34-45-00-860-031

- (2) Use the radio altimeter test set, COM-1922 to bring down the radio altitude to 0 feet.

**NOTE:** Decrease the radio altitude by 600 feet per minute (fpm) or less. RAs are inhibited below 900 feet during descent, so TA ONLY will show at low altitude.

- (a) Make sure the inboard displays show the TA ONLY indication when radio altitude is less than 900 feet.

SUBTASK 34-45-00-840-007

- (3) Make sure you return the ATC/TCAS mode switch on the ATC/TCAS panel to STBY position.

SUBTASK 34-45-00-840-008

- (4) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802

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SUBTASK 34-45-00-840-009

- (5) Put the landing gear lever in the DN position.

SUBTASK 34-45-00-080-003

- (6) Remove the installed test sets:

- (a) T-49C ramp test set, COM-13601.
- (b) radio altimeter test set, COM-1922.
- (c) air data model test set, COM-1914.

SUBTASK 34-45-00-080-005

- (7) Remove the TCAS antenna shield, if installed.

SUBTASK 34-45-00-080-004

- (8) If not necessary, remove the downlock lock pins installed in the nose and main landing gear.  
Do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801

———— END OF TASK ————

**TASK 34-45-00-730-803**

**6. TCAS - System Test (With the IFR-6000 Test Set)**

**A. General**

- (1) This test is a complete system test of the TCAS system. The system test first runs the TCAS/ATC Operational Test, and then does a test of TCAS with ground test equipment.
- (2) The IFR-6000 ramp test set, COM-10727 is used to examine the TCAS system.

**B. References**

<b>Reference</b>	<b>Title</b>
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
34-11-00-790-802	Static and Total Air Pressure System - Pressurization (P/B 201)
34-33-00-700-801	Radio Altitude Simulation Test (P/B 201)

**C. Tools/Equipment**

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



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Reference	Description
COM-1914	Test Set - Air Data Model FLMTS (Flight Line Maintenance) Part #: 18910920000 Supplier: 89944 Part #: ADTS405F Supplier: U0427 Part #: ADTS530 Supplier: U0427 Part #: ADTS552F Supplier: U0427 Part #: D60340MK Supplier: K1474 Part #: DPS1000 Supplier: 21844 Part #: DPS350 Supplier: 21844 Part #: DPS450 Supplier: 21844 Part #: MODEL 6300 Supplier: 0RDZ5 Part #: MPS34C Supplier: 48RQ2 Part #: MPS43 Supplier: A0197 Part #: MPS45 Supplier: 48RQ2 Part #: MPS49 Supplier: 48RQ2 Part #: TES9463 Supplier: 88277 Opt Part #: 01-0987-00 Supplier: 41364 Opt Part #: 18910480000 Supplier: 89944 Opt Part #: ADTS505 Supplier: U0427 Opt Part #: D60302 Supplier: K1474 Opt Part #: D60340 Supplier: K1474 Opt Part #: D60383 Supplier: K1474 Opt Part #: DPS500 Supplier: 21844 Opt Part #: MPS31C Supplier: 48RQ2
COM-1922	Test Set - Radio Altimeter Part #: 110-0430-100-02 Supplier: L04V3 Part #: 110-0460-105 Supplier: L04V3 Part #: 9599-607-15902 Supplier: F0052 Opt Part #: 110-0430-100 Supplier: L04V3
COM-10727	Test Set - Ramp, IFR-6000 Part #: IFR 6000 Supplier: 51190

#### D. Prepare for the System Test

SUBTASK 34-45-00-710-003

- (1) Do the TCAS Operational Test.
  - (a) Make sure the TCAS Operational Test passes.

SUBTASK 34-45-00-860-036

- (2) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

SUBTASK 34-45-00-700-001

- (3) Do the Self-Test inhibit test:

**WARNING:** PREPARE THE SAFETY-SENSITIVE SYSTEMS FOR THE AIR MODE BEFORE YOU OPEN THE AIR/GROUND CIRCUIT BREAKERS. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (a) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.
- (b) Turn and release the mode select switch on the control panel to the TEST position for one second.
  - 1) Make sure a TCAS self-test does not occur.

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SUBTASK 34-45-00-480-001

- (4) Do the following steps to setup the IFR-6000 ramp test set, COM-10727:

NOTE: Refer to the IFR-6000 Operation Manual for more detailed information on the setup.

**CAUTION:** DO NOT OPERATE THE TEST SET WHEN ITS ANTENNA IS LESS THAN 15 IN.  
(381 MM) FROM THE AIRPLANE ANTENNA. DAMAGE TO THE TEST SET CAN OCCUR.

- (a) Mount the Directional Antenna on the test set friction hinge and connect the Directional Antenna ANT Connector to the Test Set ANT Connector via the 12 in. coaxial cable.
- (b) Set the tester at a location forward of the airplane (50 feet or less) and 45 degrees from the center line of the airplane.
- (c) Face the test set antenna in the direction of the top TCAS antenna.
- (d) Make sure that there is no obstruction between the TCAS antenna and test set antenna.

NOTE: If ground equipment, walkways or other objects that could cause a signal obstruction or a multipath problem, choose a more suitable location for the test set and change the setup in the test set accordingly.

- (e) Push the POWER Key to energize the Test Set On.

NOTE: The IFR-6000 is equipped with a self-test for quick performance evaluation. An abbreviated self-test is run at Power-Up. The full self-test is initiated manually. Refer to the IFR-6000 Operation Manual for the full self-test procedure.

- (f) Push the SETUP Control Key to show the setup screens. Continue pushing the SETUP Control Key to cycle to the SETUP-TCAS Screen. Use the NEXT PARAM and PREV PARAM Soft Keys to select each parameter. Use the DATA keys to set the value of each parameter.

- 1) Select RF PORT: Set to ANTENNA.
- 2) Select ANT RANGE: Set to setup range from IFR-6000 antenna to the top TCAS Antenna.
- 3) Select ANT HEIGHT: Set to setup height from IFR-6000 antenna to the top TCAS Antenna.
- 4) Select UUT ADDRESS: Set to AUTO.

NOTE: When the UUT ADDRESS is set to AUTO, the Mode S address is obtained from the airplane's ATC Transponder. When set to MANUAL, you must enter the airplane's Mode S address in the MANUAL AA field.

- 5) Select ANT CABLE LOSS: Set to the cable loss found on the cable.
- 6) Select ANT GAIN (dBi), 1.03 GHz and 1.09 GHz: Set antenna gain to the figures marked on the supplied Directional Antenna.
- 7) Select SQUITTERS: Set to ON.
- 8) Select ALT REPORTING: Set to ON.
- 9) Select DISPLAYED ALT: Set to ABSOLUTE.
- 10) Select TEST SET AA: Set to A92493.

NOTE: TEST SET AA is a simulated Mode S address and must be different than the UUT ADDRESS.

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**E. Test the TCAS system**

SUBTASK 34-45-00-730-003

- (1) Do the TCAS Bearing Accuracy Test as follows:

- (a) Put the transponder select switch on the TCAS/ATC control panel (referred to as the control panel for the rest of this section) to the 1 position.
- (b) Put the mode select switch on the control panel to the TA or TA ONLY position.
- (c) On the test set, push the TCAS Mode Key to show the TCAS screen. Use the NEXT PARAM and PREV PARAM Soft Keys to select each parameter. Use the DATA keys to set the value of each parameter.
- (d) Setup the scenario as follows:
  - 1) Select SCENARIO: Set to 0 CUSTOM.
  - 2) Select TCAS TYPE: Set to TCAS II.
  - 3) Select % REPLY: Set to 100.
  - 4) Select INTRUDER TYPE: Set to ATCRBS.
  - 5) Select RANGE START: Set to 8 nm.
  - 6) Select RANGE RATE: Set to 0 kts.
  - 7) Select ALT START: Set to -100 ft.
  - 8) Select ALT STOP: Set to -100 ft.
  - 9) Select UUT ALT: Enter altitude shown on Captain's altimeter.
  - 10) Select ALT DETECT: Set to OFF.
- (e) Shield the bottom TCAS antenna with an antenna shield.
- (f) Make sure that you face the test set antenna towards the top TCAS antenna.
- (g) Push the RUN Soft Key to start the test.
  - 1) Make sure that the inboard displays shows the intruder's bearing  $\pm 15$  degrees.
- (h) Push the STOP Soft Key to stop the test.
- (i) Use the test set to interrogate the four quadrants of the TCAS antenna at the approximate bearings of 0, 90, 180, 270 degrees.

NOTE: The bearing accuracy test at some aircraft bearings may not be possible. Aircraft landing gear, fuselage, wing or engine nacelles may block the signal between the TCAS antenna and the test set.

NOTE: If you moved the test set, you must change the test set setup accordingly.

- (j) Remove the antenna shield from the bottom TCAS antenna.
- (k) Shield the top TCAS antenna or move the test set close to the bottom TCAS antenna (out of the line of sight from the top TCAS antenna).
- (l) Change the IFR-6000 ramp test set, COM-10727 setup parameters to test the bottom antenna.
  - 1) Enter the vertical and horizontal distances to the bottom TCAS antenna.

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**WARNING:** MAKE SURE THAT THE GROUND LOCKS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

- (m) Make sure that the downlock pins are installed on the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.
- (n) Put the landing gear lever in the OFF position.
- (o) Do the steps in the Bearing Accuracy Test again for the bottom antenna.

SUBTASK 34-45-00-860-037

- (2) Prepare to do the TCAS intruder Climb Resolution Advisory Test:
  - (a) Put the mode select switch on the control panel to the STBY position.
  - (b) Use the pitot/static air data model test set, COM-1914, to apply an altitude of 40,000 feet (Static and Total Air Pressure System - Pressurization, TASK 34-11-00-790-802).

NOTE: The 40,000 feet barometric altitude is chosen to minimize false TCAS alert to TCAS equipped airplanes nearby.
  - (c) Put the mode select switch on the control panel to the TA/RA position.
  - (d) Connect the radio altimeter radio altimeter test set, COM-1922, to the airplane (Radio Altitude Simulation Test, TASK 34-33-00-700-801).
  - (e) Use the radio altimeter radio altimeter test set, COM-1922, and set the radio altitude to 2400 feet.

NOTE: Increase the radio altitude by 600 feet per minute (fpm) or less. TCAS RAs are inhibited below 1100 feet during climb. So TA ONLY shows below 1100 feet.

    - 1) Make sure the inboard displays do not show the TA ONLY indication when radio altitude is greater than 1100 feet.
  - (f) Put the EFIS control panel to the MAP mode and a range of 20 on the inboard displays.
  - (g) Set the test set at a location forward of the airplane (50 feet or less) and 45 degrees from the center line of the airplane.
  - (h) Push the TCAS Mode Select Key to show the TCAS Test Screen. Use the NEXT PARAM and PREV PARAM Soft Keys to select each parameter. Use the DATA keys to set the value of each parameter.
  - (i) Setup the scenario as follows:
    - 1) Select SCENARIO: Set to 0 CUSTOM.
    - 2) Select TCAS TYPE: Set to TCAS II.
    - 3) Select % REPLY: Set to 100.
    - 4) Select INTRUDER TYPE: Set to ATCRBS.
    - 5) Select RANGE START: Set to 8 nm.
    - 6) Select RANGE STOP: Set to 0.35nm.
    - 7) Select RANGE RATE: Set to 500 kts.
    - 8) Select ALT START: Set to -100 ft

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- 9) Select ALT STOP: Set to -100 ft

NOTE: Make sure that the intruder's altitude is 100 feet below your airplane's barometric altitude. In all IFR-6000 TCAS scenarios, altitude START and STOP parameters are Relative to UUT altitude.

- 10) Select ALT RATE: Set to 0 fpm.

- 11) Select CONVERGE: Set to OFF.

- 12) Select ALT DETECT: Set to ON.

NOTE: When the ALT DETECT field is set to ON, the UUT ALT is automatically obtained from the airplane's ATC transponder.

SUBTASK 34-45-00-730-004

- (3) Do the TCAS Intruder Climb Resolution Advisory Test:

- (a) Push the RUN TEST soft key on the test set to start the test. Make sure that the following sequence occurs on the EFIS display and flight compartment speaker:

- 1) The intruder moves down the 45 degree bearing mark toward the airplane symbol
- 2) The intruder has the correct relative altitude

NOTE: The relative altitude shown can be -00 or -01 depending on your actual vertical separation. This is because TCAS can only display relative altitude by 100 foot increments.

- 3) The intruder begins as Non-threat Traffic (open white diamond)
- 4) The intruder changes to Proximate Traffic (solid white diamond)
- 5) The intruder changes to a Traffic Advisory (solid yellow circle)
- 6) The TCAS gives a "TRAFFIC, TRAFFIC" voice announcement on the flight compartment speaker
- 7) The intruder changes to a Resolution Advisory (solid red square), and gives a "climb climb" or "climb climb climb" voice announcement on the flight compartment speaker
- 8) The outboard displays show a RA resolution to pull up
- 9) Shortly before the intruder reaches the closest point of approach, the TCAS gives an "increase climb" voice announcement on the flight compartment speaker.

- 10) Shortly after the intruder reaches the airplane symbol on the inboard displays, TCAS gives a "Clear of Conflict" voice announcement on the flight compartment speaker.

NOTE: The "Clear of Conflict" voice announcement sometimes may not be given.

- (b) Push the STOP TEST soft key to stop the test.

SUBTASK 34-45-00-860-038

- (4) Prepare to do the TCAS Intruder Descend Resolution Advisory Test:

- (a) Put the transponder select switch on the control panel to the 2 position.

- (b) Push the TCAS Mode Select Key on the IFR-6000 ramp test set, COM-10727 to show the TCAS Test Screen.

- (c) Change the scenario setup as follows:

- 1) Select INTRUDER TYPE: Set to Mode S.

- 2) Select ALT START: Set to +100 ft

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- 3) Select ALT STOP: Set to +100 ft

NOTE: Make sure that the intruder's altitude is 100 feet above your airplane's barometric altitude. In all IFR-6000 TCAS scenarios, altitude START and STOP parameters are Relative to UUT altitude.

SUBTASK 34-45-00-730-005

- (5) Do the TCAS Intruder Descend Resolution Advisory Test:

- (a) Push the RUN TEST soft key on the IFR-6000 ramp test set, COM-10727 to start the test. Make sure that the following sequence occurs on the EFIS displays and flight compartment speaker:

- 1) The intruder moves down the 45 degree bearing mark toward the airplane symbol.
- 2) The intruder has the correct relative altitude.

NOTE: The relative altitude shown can be +00 or +01 depending on your actual vertical separation. This is because TCAS can only display relative altitude by 100 foot increments.

- 3) The intruder begins as Non-threat Traffic (open white diamond).
- 4) The intruder changes to Proximate Traffic (solid white diamond)
- 5) The intruder changes to a Traffic Advisory (solid yellow circle).
- 6) The TCAS gives a "TRAFFIC, TRAFFIC" voice announcement on the flight compartment speaker.
- 7) The intruder changes to a Resolution Advisory (solid red square), and gives a "descend, descend" or "descend, descend, descend" voice announcement on the flight compartment speaker.
- 8) The outboard displays show a RA resolution to push down.
- 9) Shortly before the intruder reaches the closest point of approach, the TCAS gives an "increase descent" voice announcement on the flight compartment speaker.
- 10) Shortly after the intruder reaches the airplane symbol on the inboard displays, TCAS gives a "Clear of Conflict" voice announcement on the flight compartment speaker.

NOTE: The "Clear of Conflict" voice announcement sometimes may not be given.

- (b) Push the STOP TEST soft key to stop the test.

SUBTASK 34-45-00-860-039

- (6) Prepare to do the High Altitude Climb Inhibit Test:

- (a) Use the air data model test set, COM-1914 to make a simulated altitude of 48,500 feet.

- (b) Push the TCAS Mode Select Key on the test set to show the TCAS Test Screen.

- (c) Change the scenario setup as follows:

- 1) Select INTRUDER TYPE: Set to ATCRBS.
- 2) Select ALT START: Set to -200 ft
- 3) Select ALT STOP: Set to -200 ft

NOTE: In all IFR-6000 TCAS scenarios, altitude START and STOP parameters are Relative to UUT altitude.

SUBTASK 34-45-00-730-006

- (7) Do the High Altitude Climb Inhibit Test:

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- (a) Push the RUN TEST soft key on the test set to start the test. Make sure that the following sequence occurs on the EFIS displays and flight compartment speaker:

- 1) The relative altitude of the intruder is -02.

NOTE: If the relative altitude of the intruder is not -02, change the intruder setup altitude accordingly.

- 2) The TCAS gives the "TRAFFIC, TRAFFIC" voice annunciation.

- 3) The TCAS gives the "Monitor Vertical Speed" voice annunciation.

NOTE: A crossing descend resolution advisory may be given instead of the Monitor Vertical Speed resolution advisory. Decrease the intruder's altitude or increase the airplane's altitude appropriately to correct this.

- (b) Push the STOP TEST soft key to stop the test.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-45-00-860-041

- (1) Return the airplane back to field level altitude.

SUBTASK 34-45-00-860-042

- (2) Use the radio altimeter test set, COM-1922 to bring down the radio altitude to 0 feet.

NOTE: Decrease the radio altitude by 600 feet per minute (fpm) or less. RAs are inhibited below 900 feet during descent, so TA ONLY will show at low altitude.

- (a) Make sure that the inboard displays shows the TA ONLY indication when the radio altitude is less than 900 feet.

SUBTASK 34-45-00-840-012

- (3) Make sure you return the ATC/TCAS mode switch on the ATC/TCAS panel to STBY position.

SUBTASK 34-45-00-840-002

- (4) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802

SUBTASK 34-45-00-840-003

- (5) Put the gear lever in the DN position.

SUBTASK 34-45-00-080-001

- (6) Remove the installed test sets:

- (a) IFR-6000 ramp test set, COM-10727.

- (b) air data model test set, COM-1914.

- (c) radio altimeter test set, COM-1922.

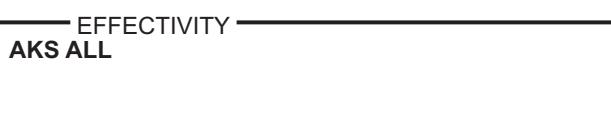
SUBTASK 34-45-00-080-002

- (7) Remove the TCAS antenna shield, if installed.

SUBTASK 34-45-00-840-004

- (8) if not necessary, remove the downlock pins installed in the nose and main landing gear. Do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

———— END OF TASK ————



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TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) COMPUTER - REMOVAL/  
INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the TCAS computer
  - (2) An installation of the TCAS computer.
- B. The TCAS computer, M1485, is installed on the E1 rack in the electronic compartment.

**TASK 34-45-01-000-801**

**2. TCAS Computer Removal**

(Figure 401)

**A. References**

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Computer	34-45-01-07-005	AKS ALL

**C. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**D. Procedure**

SUBTASK 34-45-01-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

SUBTASK 34-45-01-020-001

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

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

SUBTASK 34-45-01-020-002

- (3) Install dust caps on the electrical connectors.

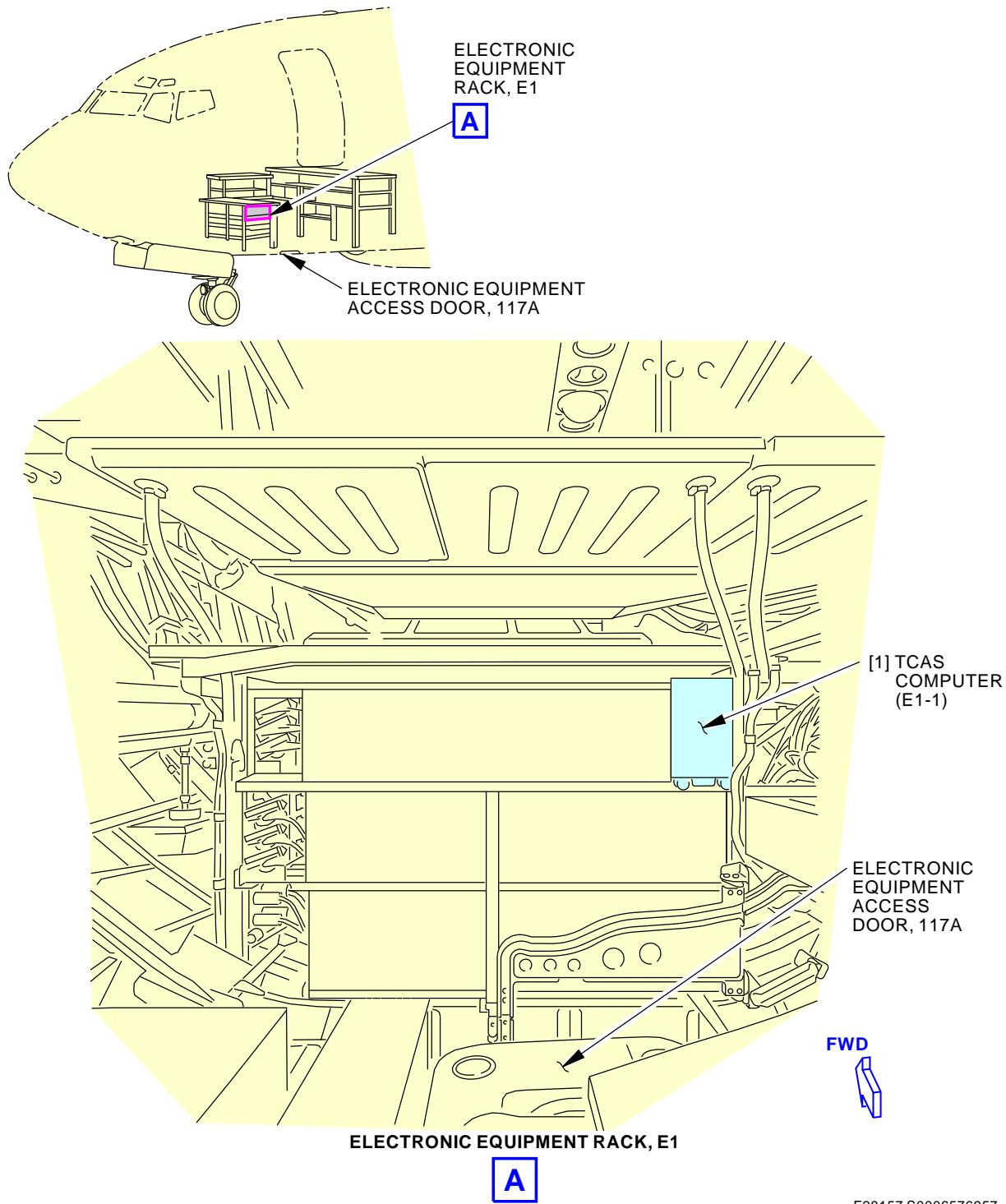
———— END OF TASK ————

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**TCAS Computer Installation**  
**Figure 401/34-45-01-990-801**

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**TASK 34-45-01-400-801**

**3. TCAS Computer Installation**

(Figure 401)

**A. References**

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Computer	34-45-01-07-005	AKS ALL

**C. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**D. Procedure**

SUBTASK 34-45-01-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

SUBTASK 34-45-01-420-001

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

- (2) Remove the dust caps from the electrical connectors.

SUBTASK 34-45-01-420-002

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

**E. Installation Test**

SUBTASK 34-45-01-860-004

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

SUBTASK 34-45-01-860-005

- (2) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-45-01-860-006

- (3) Wait until the align light on the MSU goes off.



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SUBTASK 34-45-01-740-001

- (4) On the ATC control panel, turn and release the mode select switch in the TEST position for one second.

SUBTASK 34-45-01-740-002

- (5) Make sure you hear "TCAS system test okay" on the flight compartment speakers.

———— END OF TASK ——

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**TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) ANTENNA - REMOVAL/INSTALLATION**

**1. General**

- A. This procedure has these tasks.
  - (1) A removal of the TCAS directional antenna.
  - (2) An installation of the TCAS directional antenna.
- B. There are two TCAS antennas installed on the airplane. One is installed on the top of the airplane, at station 385. The other is installed on the bottom of the airplane, at station 305.

**TASK 34-45-02-000-801**

**2. TCAS Antenna Removal**

(Figure 401)

**A. References**

Reference	Title
20-30-31-910-801	Cleaners and Polishes (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**C. Consumable Materials**

Reference	Description	Specification
B00184	Solvent - Presealing, Cleaning Solvent	BMS11-7



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D. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left

E. Procedure

SUBTASK 34-45-02-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS

SUBTASK 34-45-02-020-001

- (2) Do these steps to remove the TCAS antenna:

- (a) Remove the sealant from around the edge of the antenna [3] and the top of the screw heads [4] (TASK 20-30-31-910-801).
- (b) Remove the screws [4] from the antenna base.

**CAUTION:** BE CAREFUL WHEN YOU USE THE SEALANT REMOVAL TOOL TO BREAK THE SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRPLANE SKIN, AND OTHER COMPONENTS.

- (c) Use force around the antenna with the sealant removal tool, COM-2481 until the seal is fully broken.

**CAUTION:** MOVE THE ANTENNA THE SMALLEST DISTANCE NECESSARY TO DISCONNECT THE ANTENNA CONNECTORS. DAMAGE TO THE ANTENNA CABLES CAN OCCUR IF YOU PULL THE CABLES.

- (d) Move the antenna [3] until you can get access to the antenna cable connectors.
- (e) Disconnect the antenna cables [1].

**NOTE:** Do not let the antenna cables retract into the airplane.

- (f) Install dust caps on the connector at the end of the antenna cables.
- (g) Remove the TCAS antenna [3].

SUBTASK 34-45-02-140-001

- (3) Remove the sealant from the airplane skin around the antenna area (TASK 20-30-31-910-801).

SUBTASK 34-45-02-110-001

- (4) Use a clean rag and some solvent, B00184, to clean the airplane surface around the antenna area (TASK 20-30-31-910-801).

———— END OF TASK ————

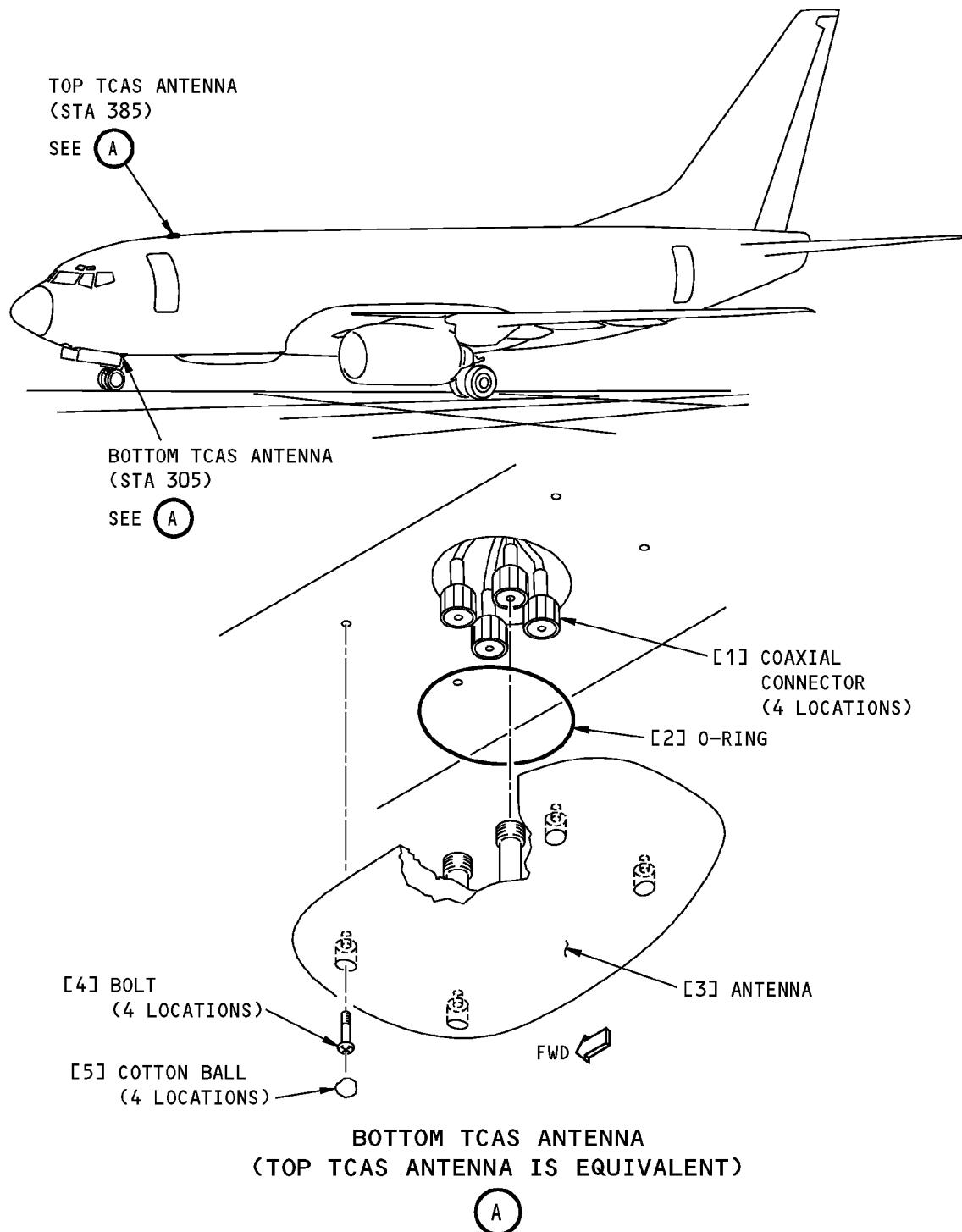
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TCAS Directional Antenna Installation  
Figure 401/34-45-02-990-801

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TASK 34-45-02-400-801

3. TCAS Antenna Installation

A. References

Reference	Title
20-30-11-910-801	Adhesives, Cements, and Sealants (P/B 201)
20-30-31-910-801	Cleaners and Polishes (P/B 201)
20-40-11-760-801	Electrical Bonding (P/B 201)
51-21-95-300-801	Alodine Treatment Application (P/B 701)
SL 20-043	Deferred Application of Aero-Sealant in Antenna Installations

B. Tools/Equipment

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17

C. Consumable Materials

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00083	Solvent - VM&P Naphthas	ASTM D-3735 Type III
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00015	Grease - Aircraft Bearing (Use BMS 3-24 until existing stocks are depleted, BMS 3-33 supersedes BMS 3-24)	BMS3-24 (Superseded by BMS3-33)

D. Location Zones

Zone	Area
221	Passenger Compartment - Aft of Control Compartment to Forward Entry Door - Left
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left

E. Procedure

SUBTASK 34-45-02-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	6	C01195	TCAS



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SUBTASK 34-45-02-210-001

- (2) Visually examine the contact surfaces of the antenna [3] and the airplane for corrosion and unwanted substances.

NOTE: If the surfaces are not clean, the electrical ground between the antenna and the surface will not be sufficient, and incorrect system operation will occur.

SUBTASK 34-45-02-110-002

- (3) Clean the contact surfaces with some solvent, B00083 (Cleaners and Polishes, TASK 20-30-31-910-801).

SUBTASK 34-45-02-620-001

- (4) Apply coating, C00064 to the contact surfaces of the antenna and the airplane (Alodine Treatment Application, TASK 51-21-95-300-801).

SUBTASK 34-45-02-620-002

- (5) Apply a layer of grease, D00015, on the O-ring and O-ring groove.

SUBTASK 34-45-02-420-001

- (6) Install the TCAS antenna:

- (a) Make sure that an O-ring is installed on the new antenna [3].
- (b) Remove the dust caps on the antenna cables.
- (c) Examine the connectors [1] for bent or broken pins, dirt, and damage.
- (d) Connect the antenna cable connectors [1] to the antenna [3] as follows:

**Table 401/34-45-02-993-801**

CABLE SLEEVE COLOR	TCAS ANTENNA CONNECTOR
Yellow	J1
Black	J2
Blue	J3
Red	J4
(e)	Tighten the TCAS Antenna connectors 4 to 6 in-lbs (0.45-0.68 newton-meters) (hand tight plus 1/8 turn).
(f)	Put the antenna [3] into position.
(g)	Install all of the screws.
(h)	Tighten the screws to 35 pound-inches (3.95 newton-meters) of torque.

SUBTASK 34-45-02-700-001

- (7) For electrical bonding check access to the upper TCAS antenna, remove the applicable ceiling panel(s) for access to the antenna. The upper TCAS antenna is located at approximately STA 385.00.

NOTE: The electrical bonding check must be performed from the inside of the airplane.

- (a) Remove the insulation blankets, if necessary, to access the upper TCAS antenna.

SUBTASK 34-45-02-700-002

- (8) For electrical bonding check access to the lower TCAS antenna, use the electrical equipment bay access door. The lower TCAS antenna is located at approximately STA 305.00.

NOTE: The electrical bonding check must be performed from the inside of the airplane.

- (a) Remove the insulation blankets, if necessary, to access the lower TCAS antenna base.



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SUBTASK 34-45-02-760-001

- (9) Use a intrinsically safe approved bonding meter, COM-1550, to make sure the resistance from the applicable antenna base to the inside airplane skin is not greater than 0.001 ohm (Electrical Bonding, TASK 20-40-11-760-801).
  - (a) Install the applicable insulation blankets, if you had removed them for the electrical bonding check.

SUBTASK 34-45-02-400-003

- (10) For the upper TCAS antenna, install the applicable ceiling panel(s) you had removed for the electrical bond check.

SUBTASK 34-45-02-390-001

- (11) Apply the sealant, A00247, to the antenna [3], (Adhesives, Cements, and Sealants, TASK 20-30-11-910-801).
  - (a) Apply the sealant, A00247, to the outer edge of the antenna [3] (TASK 20-30-11-910-801).

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-043).
  - (b) Fill the screw-holes with cotton until a gap of less than 1/8 inch is left.

NOTE: If foam plugs are supplied with the antenna, install the foam plugs instead of cotton in the screw-hole.
  - (c) Apply sealant, A00247, to fill in the screw-holes (Adhesives, Cements, and Sealants, TASK 20-30-11-910-801).

NOTE: Do not apply more than 1/8 inch of sealant into the screw-holes.

SUBTASK 34-45-02-140-002

- (12) Remove the unwanted sealant from around the antenna base (Adhesives, Cements, and Sealants, TASK 20-30-11-910-801).

SUBTASK 34-45-02-860-003

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	6	C01195	TCAS

**F. TCAS Antenna Test**

SUBTASK 34-45-02-740-001

- (1) Do a TCAS operational test:
  - (a) On the ATC control panel, put the mode switch to the test position:
    - 1) Make sure you hear "TCAS system test okay" on the flight compartment speakers.

———— END OF TASK ————



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GROUND PROXIMITY WARNING SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Ground Proximity Warning System Deactivation.
  - (2) Ground Proximity Warning System Activation.

**| AKS 002-999**

- (3) Load the Operational Program Configuration (OPC) software.

**| AKS ALL**

- (4) Load the Operational Program Configuration (OPC) software with an Enhanced Airborne Data Loader (eADL).
- (5) Verify the Operational Program Configuration (OPC) part number.
- (6) Verify the Operational Program Configuration (OPC) part number with an Enhanced Airborne Data Loader (eADL).

**AKS 001-004 PRE SB 737-34-2617**

- (7) Load the Terrain Database with PCMCIA Flash Card.
- (8) Verify the Terrain Database Pat Number for PCMCIA Flash Card Load.

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

- (9) Load the Terrain Database with USB Drive Load.
- (10) Load the terrain database with ARINC 615A Dataloader.

**| AKS ALL**

- (11) Verify the terrain database part number.

**AKS 001-004 PRE SB 737-34-2617**

- (12) Flight history data download from the ground proximity computer (GPWC).

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

- (13) Flight history data download from the ground proximity computer (GPWC).

**| AKS ALL**

- (14) Runway Awareness and Advisory System (RAAS) activation.

**TASK 34-46-00-040-801**

**2. Ground Proximity Warning System - Deactivation**

(Figure 34-46-01-990-802)

**A. General**

- (1) This procedure removes electrical power to the GPWS.

**B. References**

Reference	Title
34-46-01-990-802	Figure: Ground Proximity Warning Computer Installation (P/B 401)

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C. Location Zones

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

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Procedure

SUBTASK 34-46-00-860-321

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
B	10	C00335	PANEL & INSTR 28V PRI F/O
F	12	C00318	INDICATOR MASTER DIM SECT 6

F. Ground Proximity Warning System - Tryout

NOTE: This tryout is to make sure the GPWS system is in a zero energy state.

SUBTASK 34-46-00-860-322

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
B	10	C00335	PANEL & INSTR 28V PRI F/O
F	12	C00318	INDICATOR MASTER DIM SECT 6

SUBTASK 34-46-00-010-005

- (2) Open this access panel:

**Number Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

SUBTASK 34-46-00-700-021

- (3) Make sure the green STATUS/OK light (as applicable) on the front panel of the GPWC is not on.

———— END OF TASK ————

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**TASK 34-46-00-440-801**

**3. Ground Proximity Warning System - Activation**

(Figure 34-46-01-990-802)

**A. General**

- (1) This procedure adds electrical power to the GPWS.

**B. References**

Reference	Title
34-46-01-990-802	Figure: Ground Proximity Warning Computer Installation (P/B 401)

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Procedure**

SUBTASK 34-46-00-860-323

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

**F/O Electrical System Panel, P6-3**

Row	Col	Number	Name
B	10	C00335	PANEL & INSTR 28V PRI F/O
F	12	C00318	INDICATOR MASTER DIM SECT 6

SUBTASK 34-46-00-410-005

- (2) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

———— END OF TASK ————

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AKS 005-999; AKS 001-004 POST SB 737-34-2617

**TASK 34-46-00-470-804**

**4. Load the Operational Program (OPC) software with ARINC 615A Data Loader**

(Figure 201)

**A. General**

- (1) This task tells you how to install OPC software into the ground proximity warning computer (GPWC) with a portable data loader and the 20x3 data loader selector switches.
- NOTE: The OPC can also be loaded with a PMAT 2000 portable data loader connected to the GPWC data load (RJ45) port inside the units front panel.
- (2) A portable data loader (PDL) is not a Boeing supplied part. Refer to the PDL supplier manual for instructions for operation. Some PDLs have a disk drive for software installation from disks. If the PDL has an internal mass storage device, then disks are not necessary.

**B. References**

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

**C. Tools/Equipment**

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

Reference	Description
COM-1915	Data Loader - ARINC 615 Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 30100 Supplier: 0BAW0 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: P2K-615A-06 Supplier: 0BAW0 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 80000-03-01010203 Supplier: 0BAW0 Opt Part #: 80000-04-01020301 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 Opt Part #: 964-0400-020 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896

**D. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**E. Procedure**

SUBTASK 34-46-00-760-001

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



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AKS 005-999; AKS 001-004 POST SB 737-34-2617 (Continued)

SUBTASK 34-46-00-840-001

- (2) Use a portable ARINC 615 data loader, COM-1915 to install software in the GPWC.

SUBTASK 34-46-00-840-002

- (3) Do these steps to load software into the GPWC:

- (a) Make sure the data loader control panel (P61) 3-position switch is set to C SINGLE SYS and the system selector switch is set to NORMAL.

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE FOR THE PORTABLE DATA LOADER. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**CAUTION:** MAKE SURE THE POWER SWITCH FOR THE PORTABLE DATA LOADER IS SET TO OFF BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE POWER SWITCH IS NOT OFF, DAMAGE TO THE PORTABLE DATA LOADER CAN OCCUR.

- (c) Set the power switch on the PDL to the OFF position.  
(d) Connect the interface cable from the PDL to the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.  
(e) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

- (f) Do these steps to set the data loader control panel switches:  
1) Put the 3-position switch to L CAPT UPR.  
2) Put the system selector switch to EGPWS.  
(g) Set the power switch on the portable data loader to the ON position.  
**NOTE:** Refer to the data loader supplier instructions to load software from disks or the units mass storage device.  
(h) Follow the PDL supplier instructions to install the software.  
(i) When the OPC dataload is complete the GPWC will reboot automatically.  
(j) Do these steps at the GPWC front panel:  
1) Make sure the COMPUTER STATUS light is GREEN.  
2) Make sure the EXTERNAL FAULT light is off.  
(k) Set the power switch on the PDL to the OFF position.  
(l) Do these steps to set the data loader control panel switches:  
1) Put the 3-position switch to C SINGLE SYS.  
2) Put the system selector switch to NORMAL.

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AKS 005-999; AKS 001-004 POST SB 737-34-2617 (Continued)

SUBTASK 34-46-00-470-006

- (4) Do this task: Verify the Operational Program Configuration (OPC) Part Number,  
TASK 34-46-00-700-803

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-46-00-840-003

- (1) Do these steps to put the airplane back to its usual condition:

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN  
BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE FOR THE  
PORTABLE DATA LOADER. IF THE CIRCUIT BREAKER IS NOT OPEN,  
DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

- (b) Remove the ARINC 615 data loader, COM-1915, interface cable from the DATA  
TRANSFER UNIT RECEPTACLE on the P61 panel.  
(c) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

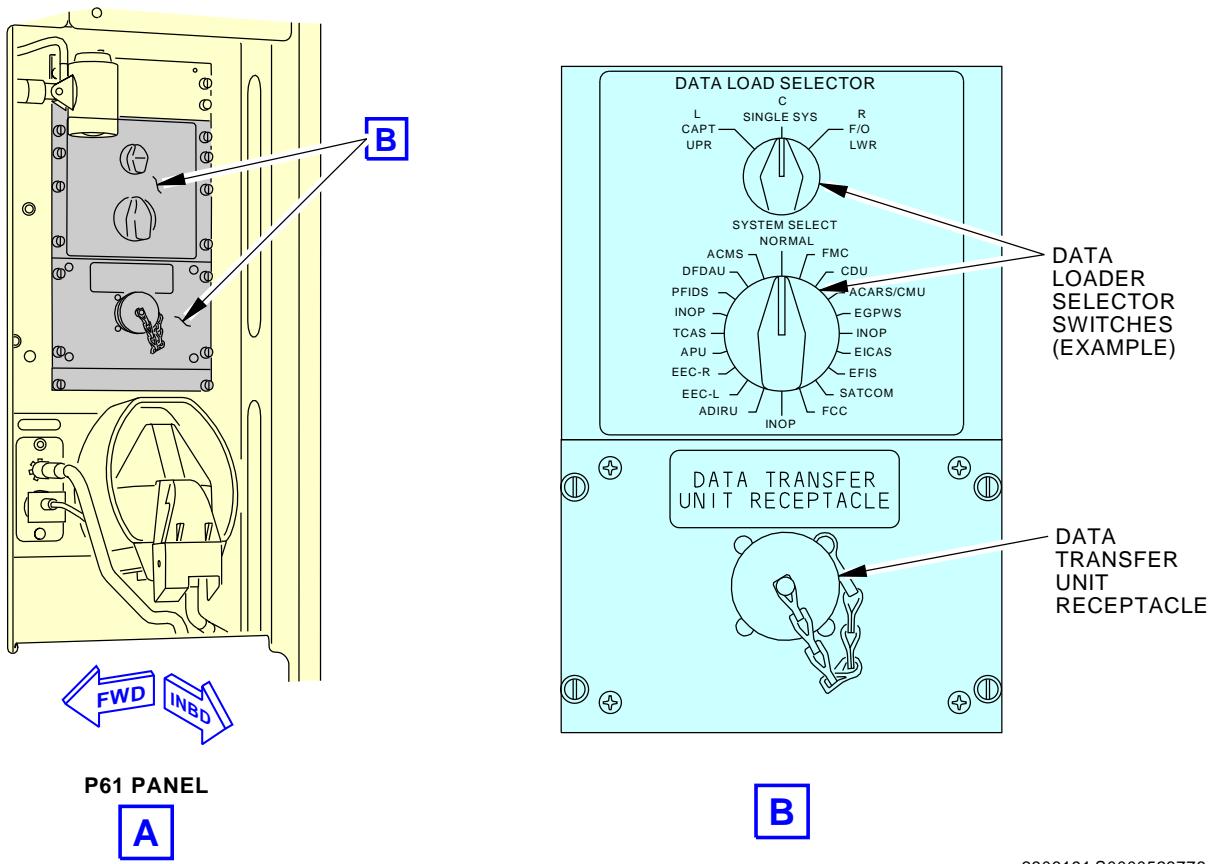
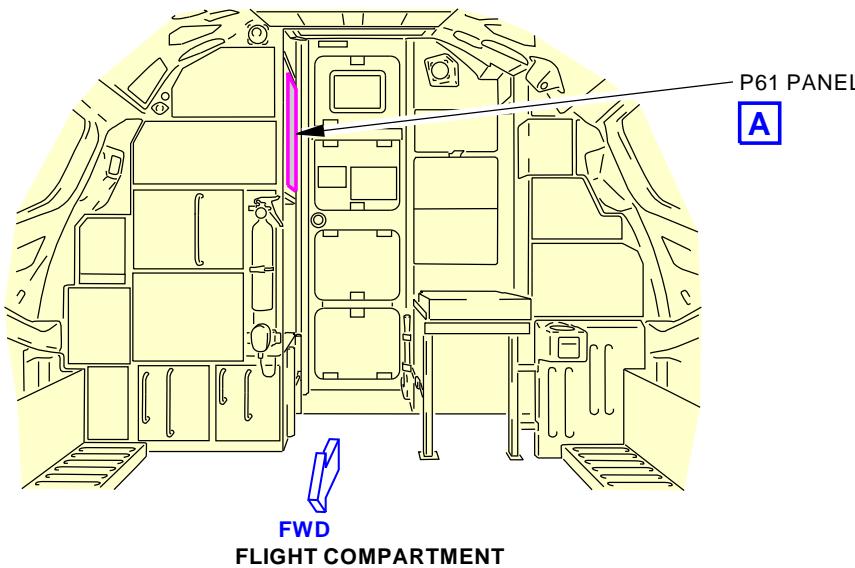
———— END OF TASK ————

EFFECTIVITY  
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EGPWS Software Installation  
Figure 201/34-46-00-990-804

EFFECTIVITY  
AKS 005-999; AKS 001-004 POST SB 737-34-2617

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AKS ALL

**TASK 34-46-00-470-808**

| 5. Load the Operational Program Configuration (OPC) software with an Enhanced Airborne Data Loader (eADL)

**A. General**

- (1) This task tells you how to install OPC software into the enhanced ground proximity warning computer (EGPWC) with an enhanced airborne data loader (eADL).
- (2) The indications and instructions are different by eADL. Refer to the supplier's component manual for more information on the data loader used.
- (3) For general information for software installation times, do this task: On-Airplane Software Installation, TASK 20-15-11-400-801.

**B. References**

Reference	Title
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

**C. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**D. Prepare for the Software Installation**

SUBTASK 34-46-00-760-004

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

NOTE: Make sure that power is not removed while you install software. A power interruption will cause a failure of the software installation.

SUBTASK 34-46-00-860-336

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	7	C00629	GND PROX WARN

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 34-46-00-860-337

- (3) Set the upper switch on the data loader control panel to L CAPT UPR, then set the SYSTEM SELECT switch on the data loader control panel (P61) to EGPWS.

NOTE: On some aircraft, the data loader control panel does not have an upper switch. On these aircraft, it is necessary to set only the SYSTEM SELECT switch to EGPWS.

SUBTASK 34-46-00-010-007

- (4) Open the eADL front cover by releasing the two screws and lifting up on the cover.



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**E. Software Installation Procedure**

SUBTASK 34-46-00-470-010

- (1) Do these steps to install software from a floppy disk:

- (a) Wait until the display shows the eADL Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

- (b) Select "Target Page."

- 1) The eADL will show the Selected Target System screen.

- (c) Select "Floppy Drive."

- 1) The eADL will show a Load Confirmation screen.

- (d) Carefully push the first disk (label up) into the disk drive.

- (e) Select "CONFIRM."

- 1) The eADL will show "LOADING" on the Transfer In Progress screen.

NOTE: It may take one to two minutes for the installation to start.

NOTE: If the disk set has more than one disk and the data of the current disk is completely transferred, the eADL will prompt you to insert the next diskette. Eject the current diskette, insert the next diskette and select "CONTINUE".

- (f) In the Transfer In Progress screen, wait for the eADL to show "LOAD COMPLETE."

- (g) Select "MAIN" to go back to the main menu.

- (h) Eject the disk from the disk drive when the software installation is completed.

SUBTASK 34-46-00-470-011

- (2) Do these steps to install software from a USB flash drive to the eADL MSD:

- (a) Put the USB flash drive into the eADL USB port.

NOTE: The USB flash drive must be configured correctly by the USB stick creator tool as specified in the eADL Operators Guide.

- (b) Make sure that the "eADL Main Menu" is shown.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

- (c) Select "Maintenance Page."

- 1) This will show the "Maintenance Menu" screen.

- (d) Select "Transfer Parts From USB"

NOTE: If the error message "USB Is Not Mounted Or Is Not A Valid USB" is shown, select "GO BACK" and do the steps again.

NOTE: Make sure the USB flash drive is configured correctly by the USB stick creator tool as specified in the eADL Operations Guide.

- 1) The eADL screen will show "CONFIRM TO BEGIN TRANSFERRING."



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- 2) Select "CONFIRM."

NOTE: The USB and MSD annunciators will turn yellow during the transfer procedure.

NOTE: If the software is already on the eADL MSD, this message will show: "Skipping, the software part number already exists."

- (e) When the software transfer is complete, the USB and MSD annunciators will turn green and this message will show:

"Part Transfer Complete"

NOTE: The annunciators will turn red if the transfer procedure is aborted or if there is a failure.

- (f) Select "GO BACK" two times to go back to the main menu.

SUBTASK 34-46-00-470-012

- (3) Do these steps to install the software from the eADL MSD to the LRU:

- (a) Make sure that the "eADL Main Menu" is shown.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

- (b) Select "Target Page."

- 1) This will show the "Select Target System" screen.

- (c) Select the LRU to receive the software.

- 1) This will show the "Select Software Part" screen.

- (d) Push the "SELECT" button for the desired software.

NOTE: The listed software will appear as it was originally configured in the USB stick creator tool.

- (e) Make sure that the "Load Confirmation" screen shows.

- (f) Select "CONFIRM."

- 1) This will show the "Transfer In Progress" screen.

- 2) The "TRANSFER" annunciator will change to "LOADING" and turn yellow during the installation procedure.

- 3) The "LOADING" annunciator will change to "COMPLETE" and turn green when the installation procedure is completed.

- (g) Select "MAIN" to go back to the main menu.

SUBTASK 34-46-00-700-024

- (4) Do this task: Verify the Operational Program Configuration (OPC) Part Number,  
TASK 34-46-00-700-803

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-46-00-410-006

- (1) Close the eADL cover and tighten screws.

SUBTASK 34-46-00-860-338

- (2) Set the system select switch on the data loader control panel (P61) to NORM or NORMAL.

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SUBTASK 34-46-00-860-339

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

———— END OF TASK ——

**TASK 34-46-00-700-803**

| **6. Verify the Operational Program Configuration (OPC) Part Number**

**A. General**

- (1) This task provides instructions to verify the operational program configuration (OPC) part number. The GPWC self-test can be activated from the flight compartment.

NOTE: You can verify the OPC part number in the flight compartment or electrical and electronics compartment. If you do the test from the electrical and electronics compartment, you must use the headphones and the SELF TEST switch on the front panel of the ground proximity warning computer. The GPWC level 3 self-test provides aural annunciations of the current configuration which includes the OPC part number.

- (2) The GPWC self-test can only be activated when the airplane is on the ground.

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-46-00-700-015

- (1) Make sure the green COMPUTER STATUS light on the front panel of the GPWC is on.

SUBTASK 34-46-00-700-016

- (2) Make sure the EXTERNAL FAULT light on the front panel of the GPWC is off.

SUBTASK 34-46-00-860-320

- (3) Make sure the TERR switches on the EFIS control panels, P7, are on.

SUBTASK 34-46-00-700-017

- (4) Push the SYS TEST switch on Ground Proximity Module (P3-7).

(a) Make sure the terrain display test pattern is shown on the navigation display (ND).

SUBTASK 34-46-00-700-018

- (5) Record the operational program configuration (OPC) part number.

NOTE: The test pattern shows magenta text for the operational program configuration part number, ie OSSBCGXXXXXXXXXX.

SUBTASK 34-46-00-700-019

- (6) If the OPC part number is not correct, then do this task: Load the Operational Program (OPC) software with ARINC 615A Data Loader, TASK 34-46-00-470-804.

———— END OF TASK ——



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**TASK 34-46-00-700-804**

**7. Verify the Operational Program Configuration (OPC) Part Number with an Enhanced Airborne Data Loader (eADL)**

**A. General**

- (1) This task provides instructions to verify the operational program configuration (OPC) part number with an Enhanced Airborne Data Loader (eADL).

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-46-00-010-008

- (1) Open the eADL front cover by releasing the two screws and lifting up on the cover.

SUBTASK 34-46-00-860-340

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	7	C00629	GND PROX WARN

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 34-46-00-700-025

- (3) Make sure that the “eADL Main Menu” is shown.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

SUBTASK 34-46-00-700-026

- (4) Select “Maintenance Page.”

NOTE: If accessing the Maintenance Page right after the eADL SW has been loaded, the “Flash Update” screen appears for a while, then the Maintenance screen will show.

- (a) This will show the “Maintenance Menu” screen.

SUBTASK 34-46-00-700-027

- (5) Select “Display System Status”.

- (a) This will show the “System Status Menu” page.

SUBTASK 34-46-00-700-028

- (6) Make sure that the OPC software part number under “S/W Build” matches the software part number listed in the Installation Plan (IP)'s BOM.

SUBTASK 34-46-00-700-029

- (7) If the OPC part number is correct, the software installation is not required.

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- (a) Select "MAIN" or "GO BACK" to go back to the main menu.

SUBTASK 34-46-00-700-030

- (8) If the OPC part number is not correct, then do this task: Load the Operational Program Configuration (OPC) software with an Enhanced Airborne Data Loader (eADL),  
TASK 34-46-00-470-808.

SUBTASK 34-46-00-410-007

- (9) Close the eADL cover and tighten screws.

————— END OF TASK ————

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### TASK 34-46-00-470-802

#### | 8. Load the Terrain Database with PCMCIA Flash Card (Figure 202)

##### A. General

- (1) This task provides instructions to load the terrain database into the ground proximity warning computer (GPWC).
- (2) The terrain database load is inhibited when the airplane is in the air. The database will automatically load into the GPWC after you install the database flash card into the card slot on the front panel of the GPWC.
- (3) You can ignore caution notes (shown on the PCMCIA card) about damage if you put in or remove the card when the power is on. The GPWC automatically applies or removes PCMCIA card power.

##### B. References

Reference	Title
34-46-01-000-801	Ground Proximity Warning Computer Removal (P/B 401)
34-46-01-400-801	Ground Proximity Warning Computer Installation (P/B 401)

##### C. Tools/Equipment

Reference	Description
STD-1391	Card - Flash, PCMCIA, Loaded with the Terrain Database

##### D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

##### E. Procedure

SUBTASK 34-46-00-860-309

- (1) Make sure the COMPUTER OK light on the front panel of the GPWC is on.

SUBTASK 34-46-00-860-310

- (2) Make sure the COMPUTER FAIL lights on the front panel of the GPWC is off.

SUBTASK 34-46-00-860-311

- (3) Open the door on the front panel of the GPWC.

SUBTASK 34-46-00-480-002

- (4) Make sure the IN PROG, CARD CHNG, XFER COMP, and XFER FAIL lights on the GPWC are off.

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SUBTASK 34-46-00-470-002

- (5) Do these steps to load the terrain database:

NOTE: If you install a version of the terrain database that is not compatible with the hardware memory, then the GPWC will not operate. Replacement of the GPWC will be necessary. More information about version compatibility can be found in the applicable Honeywell Service Bulletin.

NOTE: A power interruption during data transfer may cause the PCMCIA card to become corrupted.

- (a) Insert the PCMCIA, Flash Card, STD-1391 for the terrain database into the card slot on the GPWC.

NOTE: After the card is installed, the terrain database will automatically load into the GPWC. Depending on the terrain database version, it takes between 5 and 45 minutes to load the terrain database.

- (b) Make sure the IN PROG light on the GPWC comes on.

- (c) If the CARD CHNG light on the GPWC comes on, do these steps to change the card:

NOTE: When the CARD CHNG light comes on, it indicates that more than one card is necessary to load the terrain database.

- 1) Push the eject button on the GPWC and remove the card.

- 2) Insert the next card for the terrain database into the card slot on the GPWC.

- 3) Make sure the IN PROG light on the GPWC comes on.

- (d) If the XFER FAIL light on the GPWC comes on, it indicates that the terrain database load has failed. Do these steps to correct the fault:

- 1) Remove and apply power to the GPWC prior to the second attempt to reload the terrain database.

NOTE: Reapplying power may be beneficial in recovering the computer.

Open and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

- 2) Attempt to load the GPWC with a second PCMCIA terrain database card, if available, to eliminate a corrupt PCMCIA card as a cause of the transfer failure.

- 3) If the terrain database load fails, replace the Ground Proximity Warning Computer (GPWC), M652. Do these tasks: Ground Proximity Warning Computer Removal, TASK 34-46-01-000-801Ground Proximity Warning Computer Installation, TASK 34-46-01-400-801.

- 4) Load the terrain database into the new GPWC.

- (e) After the load of the terrain database is complete, make sure the IN PROG light on the GPWC goes off and the XFER COMP light comes on.

- (f) Push the eject button on the GPWC and remove the card.

- (g) Make sure the COMPUTER OK light on the GPWC is on and all the other lights are off.

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SUBTASK 34-46-00-700-004

- (6) Do this task: Verify the Terrain Database Part Number for PCMCIA Flash Card Load,  
TASK 34-46-00-700-801.

———— END OF TASK ————

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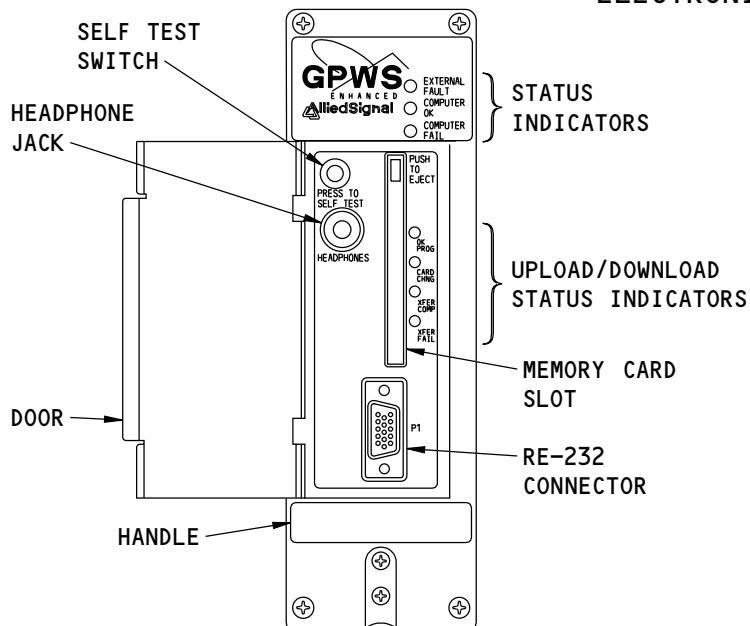
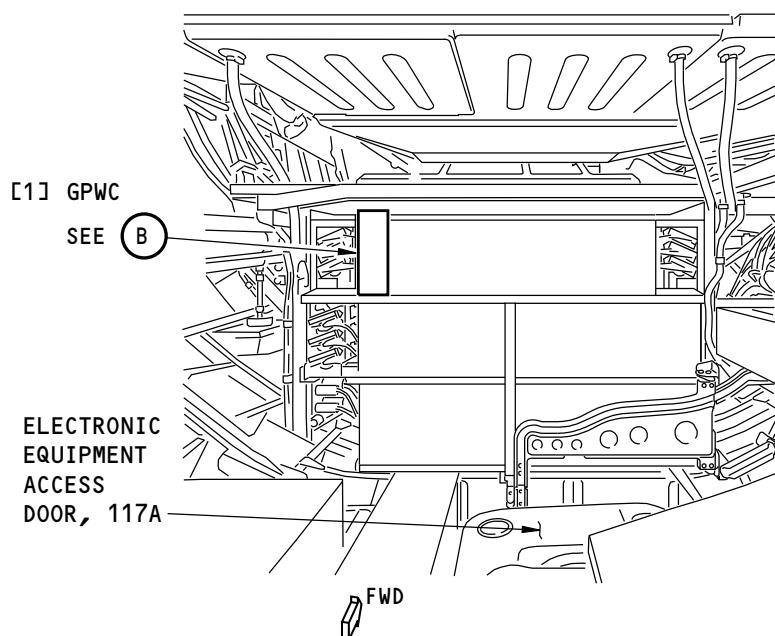
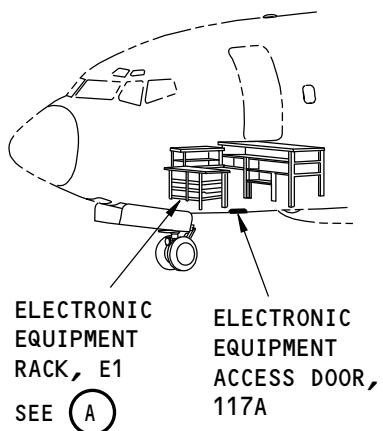
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**GROUND PROXIMITY WARNING COMPUTER (GPWC)**

(B)

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**Ground Proximity Warning Computer**  
**Figure 202/34-46-00-990-802**

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**TASK 34-46-00-700-801**

**| 9. Verify the Terrain Database Part Number for PCMCIA Flash Card Load**  
(Figure 202)

**A. General**

- (1) This task provides instructions to verify the terrain database part number. The GPWC level 3 self-test provides aural annunciations of the current configuration that include the terrain database part number.

**NOTE:** You can verify the terrain database part number in the electrical and electronics compartment or in the flight compartment. If you do the test from the flight compartment, you do not need headphones and you use the GPWS SYS TEST switch on the ground proximity warning module. If you do the test from the electrical and electronics compartment, you use the headphones and the SELF TEST switch on the front panel of the ground proximity warning computer.

- (2) The GPWC level 3 self-test can only be activated when the airplane is on the ground.

**B. Tools/Equipment**

Reference	Description
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono RCA Audio Plug

**C. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**D. Procedure**

SUBTASK 34-46-00-860-265

- (1) Make sure the ground proximity warning system (GPWS) is operational.

SUBTASK 34-46-00-860-266

- (2) Make sure the COMPUTER OK light on the front panel of the GPWC is on and the other lights are off.

SUBTASK 34-46-00-860-267

- (3) Make sure the TERR switches on the EFIS control panels, P7, are on.

SUBTASK 34-46-00-860-268

- (4) Open the door on the front panel of the GPWC.

SUBTASK 34-46-00-480-001

- (5) Plug the headphone, STD-1390 into the headphone jack of the GPWC.

SUBTASK 34-46-00-860-269

- (6) Make sure there is no card in the card slot of the GPWC.

SUBTASK 34-46-00-700-001

- (7) Do these steps to do the level 3 self-test of the GPWC:

**NOTE:** The GPWC self-test has six levels that operate in sequence. The level 3 self-test will occur after the level 2 self-test.

- (a) Push the self-test switch on the GPWC for one second.

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- (b) After the level 1 self-test starts, push the self-test switch for one second to go to the level 2 self-test.
- (c) After the level 2 self-test starts, wait until the PRESS TO CONTINUE annunciation occurs, then push the self-test switch for one second to go to the level 3 self-test.
- | (d) You will hear a sequence of the configuration annunciations for the GPWS over the headphone.
  - 1) Make sure you hear the terrain database part number after the TERRAIN DATABASE VERSION annunciation.

NOTE: There are several configuration annunciations in the level 3 self-test. To advance to the terrain database part number annunciation, you need to push the self-test switch after each annunciation.
- (e) Record the terrain database part number.
- (f) After you hear the terrain database part number, continue to push the self-test switch until you hear the PRESS TO CONTINUE annunciation.

NOTE: After the PRESS TO CONTINUE annunciates, the level 3 self-test is complete. If you do not push the self-test switch again, the self-test sequence will stop.

- (g) If your airline maintains a terrain database version requirement, make sure the terrain database version is correct.
  - 1) If the terrain database version is not correct, then, do this task: Load the Terrain Database with PCMCIA Flash Card, TASK 34-46-00-470-802

SUBTASK 34-46-00-860-270

- (8) Remove the headphone, STD-1390 from the headphone jack on the GPWC.

SUBTASK 34-46-00-860-271

- (9) Close the door on the front panel of the GPWC.

———— END OF TASK ————

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**TASK 34-46-00-470-803**

| 10. Load the Terrain Database with USB Drive Load

(Figure 203)

**A. General**

- (1) This task provides instructions to load the terrain database into the ground proximity warning computer (GPWC).
- (2) The terrain database load is inhibited when the airplane is in the air. The database will automatically load into the GPWC after you install the database USB 2.0 or 3.0 mass storage device into the USB port on the front panel. The GPWC is not compatible with USB hubs or encrypted drives.

**B. References**

Reference	Title
34-46-01-000-801	Ground Proximity Warning Computer Removal (P/B 401)
34-46-01-400-801	Ground Proximity Warning Computer Installation (P/B 401)

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C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

D. Procedure

SUBTASK 34-46-00-700-006

- (1) Make sure the COMPUTER STATUS light on the front panel of the GPWC is GREEN.

NOTE: If the EXTERNAL FAULT light on the front panel of the GPWC is yellow, a fault external to the GPWC exists.

SUBTASK 34-46-00-010-002

- (2) Open the door on the front panel of the GPWC.

NOTE: A placard inside the door contains instructions for data loading.

SUBTASK 34-46-00-700-008

- (3) Make sure the DATALOAD STATUS light is off.

SUBTASK 34-46-00-470-005

- (4) Do these steps to load the terrain database:

NOTE: If you install a version of the terrain database that is not compatible with the hardware memory, then the GPWC will not operate. Replacement of the GPWC will be necessary.

- (a) Insert the USB drive which contains the terrain database into the USB port on the GPWC.

NOTE: After the USB drive is inserted, the terrain database automatically starts to load into the GPWC.

- (b) Make sure the DATALOAD STATUS light changes to yellow.

- (c) When the terrain database transfer is complete, the DATALOAD STATUS light changes to green.

- (d) If the DATALOAD STATUS light changes to red, the terrain database load transfer failed. Do these steps to correct the fault:

- 1) Remove and apply power to the GPWC prior to the second attempt to load the terrain database.

NOTE: Reapplying power may be beneficial in recovering the computer.

Open and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

- 2) Attempt to load the GPWC with a second USB terrain database drive, if available, to eliminate a corrupt USB drive as a cause of the transfer failure.
- 3) If the terrain database load fails, replace the Ground Proximity Warning Computer (GPWC), M652. Do these tasks: Ground Proximity Warning Computer Removal, TASK 34-46-01-000-801Ground Proximity Warning Computer Installation, TASK 34-46-01-400-801.
- 4) Load the terrain database into the new GPWC.

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- (e) Remove the USB drive.  
NOTE: The GPWC will reboot automatically.
- (f) Make sure the DATALOAD STATUS light is off.
- (g) Make sure the COMPUTER STATUS light is GREEN.

SUBTASK 34-46-00-700-009

- (5) Do this task: Verify the Terrain Database Part Number, TASK 34-46-00-700-802.

———— END OF TASK ————

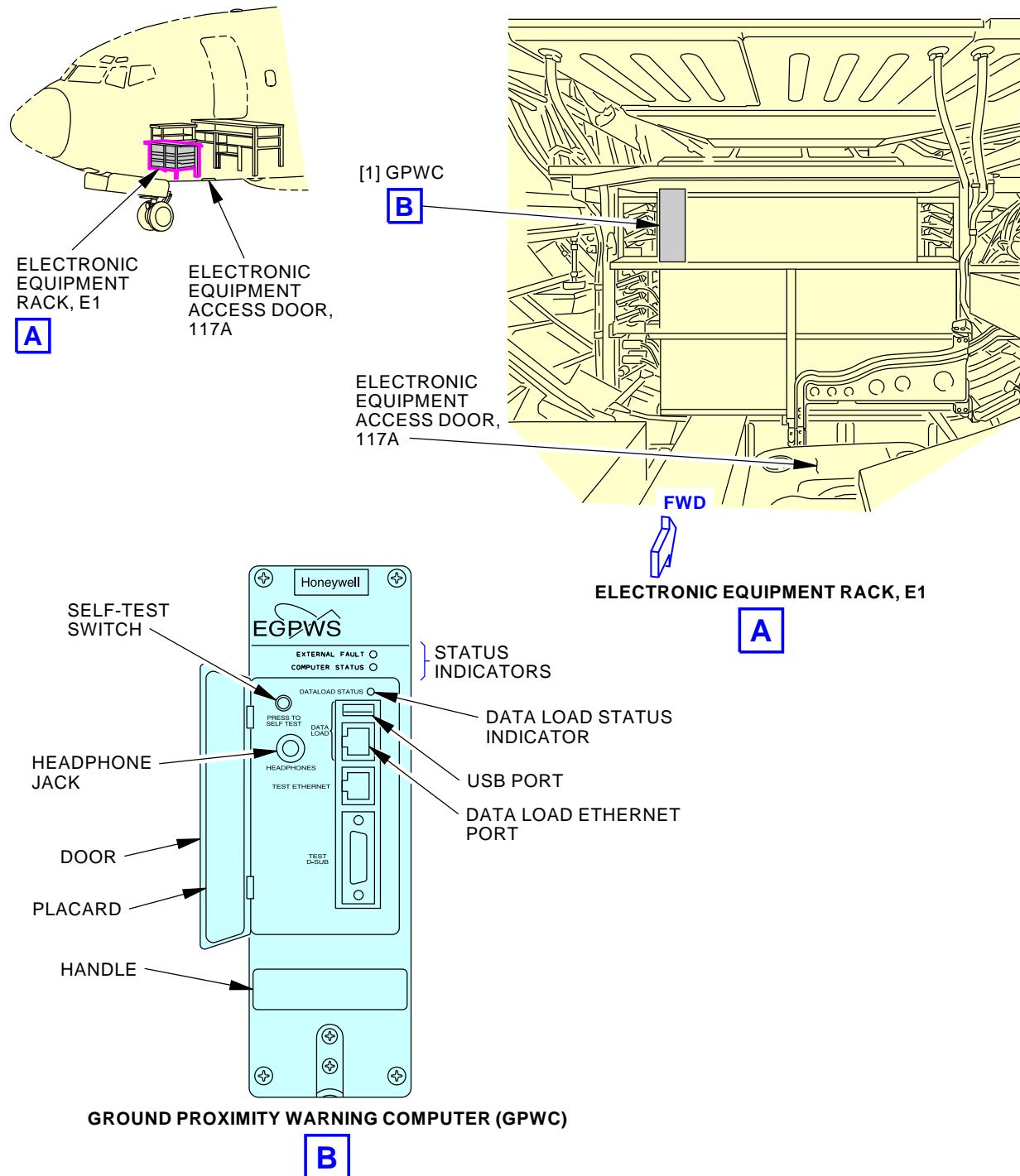
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**Ground Proximity Warning Computer**  
**Figure 203/34-46-00-990-803**

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**TASK 34-46-00-470-805**

**| 11. Load the Terrain Database with ARINC 615A Dataloader**

(Figure 204)

**A. General**

- (1) This task provides instructions to load the terrain database into the Ground Proximity Warning Computer (GPWC).
- (2) The terrain database load is inhibited when the airplane is in the air.

**B. References**

<b>Reference</b>	<b>Title</b>
34-46-00-710-804-002	Ground Proximity Warning System - Operational Test (P/B 501)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**D. Procedure**

SUBTASK 34-46-00-710-009

- (1) Make sure the ground proximity warning system (GPWS) is operational. (Ground Proximity Warning System - Operational Test, TASK 34-46-00-710-804-002)

SUBTASK 34-46-00-860-328

- (2) Make sure the COMPUTER STATUS light on the front panel of the GPWC shows GREEN in color.

SUBTASK 34-46-00-860-329

- (3) Make sure the EXTERNAL FAULT light on the front panel of the GPWC is off.

NOTE: The EXTERNAL FAULT light could be yellow if a required external signal is missing.

SUBTASK 34-46-00-010-004

- (4) Open the door on the front panel of the GPWC.

NOTE: A placard inside the door contains instructions for data loading.

SUBTASK 34-46-00-860-330

- (5) Make sure the DATALOAD STATUS light is off.

SUBTASK 34-46-00-470-008

- (6) Do these steps to load the terrain database:

NOTE: If you install a version of the terrain database that is not compatible with the hardware memory, then the GPWC will not operate. Replacement of the GPWC will be necessary.

- (a) Connect a Cat 5 Ethernet cable to the DLS and connect the other end of the Ethernet cable into the DATA LOAD Ethernet port at the front panel of the GPWC.

NOTE: You can follow the manufacturer's instructions to energize and boot-up the DLS.

- (b) Navigate to the folder where the GPWC terrain database files are located on the DLS, to start the download.

- (c) Make sure the DATALOAD STATUS light shows YELLOW in color.

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- (d) If the DATALOAD STATUS light shows BLUE, the inserted device is unserviceable.
- (e) When the terrain database data transfer is completed, the DATALOAD STATUS light shows GREEN.

Open and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

- 1) If the DATALOAD STATUS light shows RED, the terrain database data transfer failed.

NOTE: After the terrain database is finished loading, the GPWC will reboot.

- (f) Make sure the COMPUTER STATUS light shows GREEN, after 25 seconds maximum.
- (g) Disconnect the Ethernet cable from the DATA LOAD Ethernet port on the GPWC.

SUBTASK 34-46-00-410-004

- (7) Close the front panel door on the GPWC.

SUBTASK 34-46-00-710-010

- (8) Make sure the GPWC is serviceable.
  - (a) Make sure the COMPUTER STATUS light is GREEN.
  - (b) Make sure the EXTERNAL FAULT light is off.

NOTE: The EXTERNAL FAULT light could be yellow if a required external signal is missing.

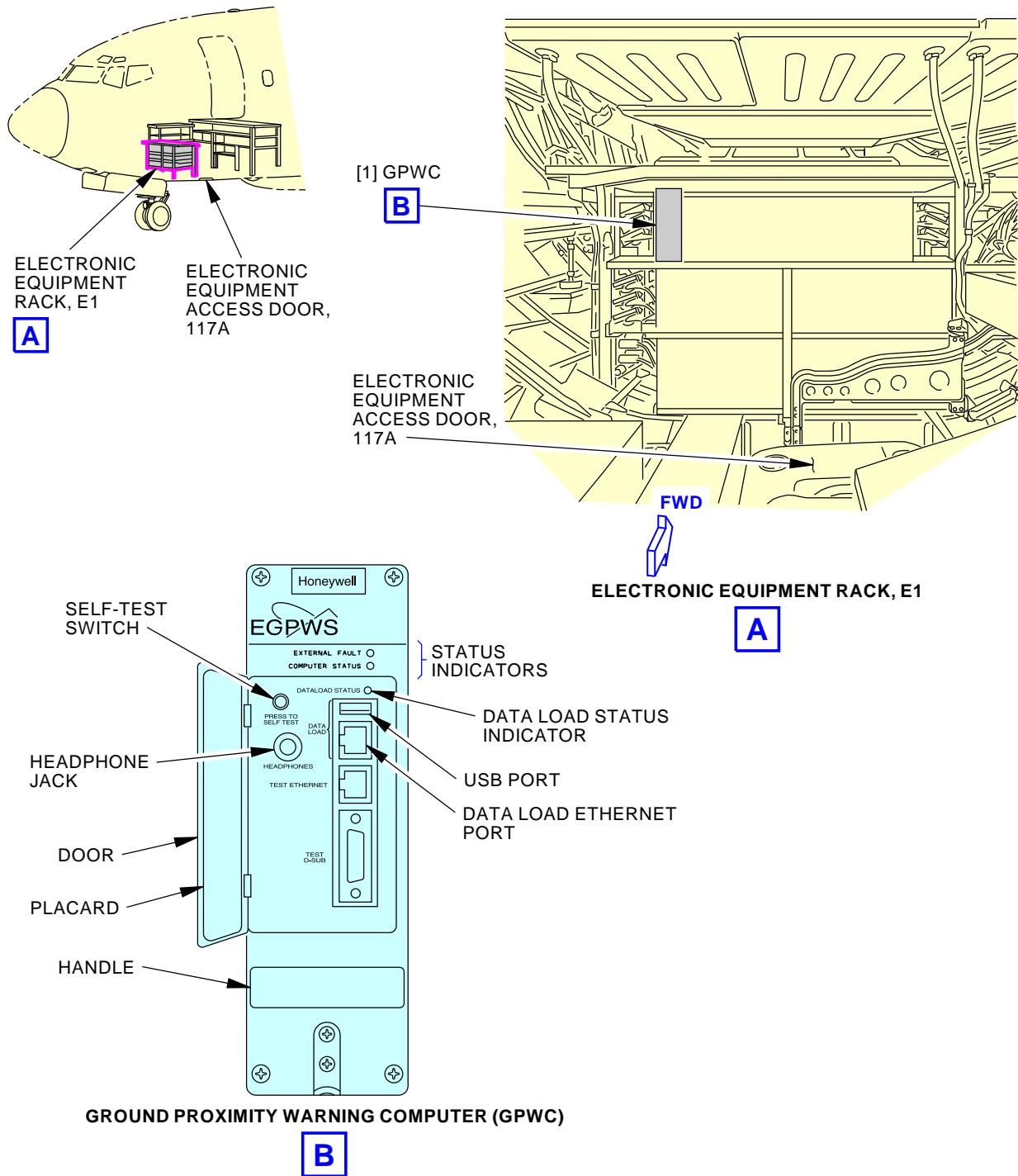
SUBTASK 34-46-00-700-020

- (9) Do this task: Verify the Terrain Database Part Number, TASK 34-46-00-700-802.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-46-00**



2305945 S0000523690\_V3

**Ground Proximity Warning Computer**  
**Figure 204/34-46-00-990-805**

EFFECTIVITY  
 AKS 005-999; AKS 001-004 POST SB 737-34-2617

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D633A101-AKS

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AKS ALL

**TASK 34-46-00-700-802**

| 12. **Verify the Terrain Database Part Number**

**A. General**

- (1) This task gives instructions to make sure the terrain database (TDB) part number is correct. You can use this task after all the different TDB installation dataload procedures and for all the different media types. The GPWC self-test can be activated from the flight compartment.

**NOTE:** You can verify the terrain database part number in the flight compartment on the navigation display (ND) or electrical and electronics compartment. If you do the test from the electrical and electronics compartment, you must use the headphones and the SELF TEST switch on the front panel of the ground proximity warning computer. The GPWC level 3 self-test provides aural annunciations of the current configuration which includes the terrain database part number.

- (2) The GPWC self-test can only be activated when the airplane is on the ground.

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-46-00-700-010

- (1) Make sure the green COMPUTER STATUS light on the front panel of the GPWC is on.

SUBTASK 34-46-00-700-011

- (2) Make sure the EXTERNAL FAULT light on the front panel of the GPWC is off.

SUBTASK 34-46-00-860-319

- (3) Make sure the TERR switches on the EFIS control panels, P7, are on.

SUBTASK 34-46-00-700-012

- (4) Push the SYS TEST switch on Ground Proximity Module (P3-7).

- (a) Make sure the terrain display test pattern is shown on the navigation display (ND).

SUBTASK 34-46-00-700-013

- (5) Record the terrain database part number.

**NOTE:** The test pattern shows magenta text for the terrain database part number, ie TDBXXXX.

SUBTASK 34-46-00-700-014

- (6) If your airline maintains a terrain database version requirement, make sure the terrain database version is correct.

- (a) If the terrain database version is not correct, then do this task: Load the Terrain Database with USB Drive Load, TASK 34-46-00-470-803.

———— END OF TASK ———



**34-46-00**



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**TASK 34-46-00-970-801**

| 13. **Flight History Data Download**

**A. General**

- (1) This procedure tells you how to download flight history data from the ground proximity warning computer (GPWC) through the PCMCIA interface.
- (2) A Honeywell programmed and formatted PCMCIA Card is required to start the download sequence and record the data. The part number for the PCMCIA Card is P/N 718-1592-001. Flight history download cards can only be used once.
- (3) You cannot use a database update card to download flight history data.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**C. Procedure**

SUBTASK 34-46-00-865-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00629	GND PROX WARN

SUBTASK 34-46-00-869-001

- (2) Make sure the COMPUTER OK light on the front panel of the GPWC is on.

SUBTASK 34-46-00-869-002

- (3) Make sure the EXTERNAL FAULT and COMPUTER FAIL lights on the front panel of the GPWC are off.

NOTE: If the COMPUTER FAILED light is on, you cannot be sure of the integrity of the downloaded data.

If the EXTERNAL FAULT light is on, there is no effect on the download process.

SUBTASK 34-46-00-010-001

- (4) Open the front panel door on the GPWC.

SUBTASK 34-46-00-869-003

- (5) Make sure these status indicator lights are off.

- (a) IN PROG
- (b) CARD CHNG
- (c) XFER COMP
- (d) XFER FAIL

SUBTASK 34-46-00-800-001

- (6) Make sure the PCMCIA Card has its write protect function selector in the off (in-board) position.

EFFECTIVITY

AKS ALL

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SUBTASK 34-46-00-800-002

- (7) Insert the PCMCIA Card into the memory card slot.

NOTE: The notch on the bottom of the PCMCIA Card should be in the down position.  
Carefully push the card in until the PUSH TO EJECT button on the front panel is fully extended.

SUBTASK 34-46-00-800-003

- (8) Make sure the flight history download automatically starts.

- (a) IN PROG light comes on.  
(b) COMPUTER OK light goes off.

SUBTASK 34-46-00-800-004

- (9) When the flight history download is completed:

NOTE: The maximum time required to complete the download is 10 minutes.

- (a) IN PROG light goes off.  
(b) XFER COMP light comes on.

NOTE: If the XFER FAIL light comes on, a new PCMCIA Card is required.

SUBTASK 34-46-00-800-005

- (10) Push the EJECT button to remove the PCMCIA Card.

SUBTASK 34-46-00-410-002

- (11) Close the front panel door on the GPWC.

SUBTASK 34-46-00-710-005

- (12) The GPWC should automatically return to normal operation.

- (a) Make sure the COMPUTER OK light comes on. It may take three minutes for the light to come on.

SUBTASK 34-46-00-510-001

- (13) Send the PCMCIA Card with the flight history data to the vendor.

———— END OF TASK ————

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

**TASK 34-46-00-970-802**

**| 14. Flight History Data Download**

**A. General**

- (1) This procedure gives the steps download flight history data from the Ground Proximity Warning Computer (GPWC) using the USB 2.0 Flash memory drive.  
(2) The Flash memory drive must be formatted before you can do the download.

**B. Tools/Equipment**

Reference	Description
STD-13649	Drive - Flash, USB (2GB Capacity Minimum)

**C. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left

EFFECTIVITY  
AKS ALL

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(Continued)

**Zone      Area**

118      Electrical and Electronics Compartment - Right

**D. Prepare Memory Stick**

SUBTASK 34-46-00-550-001

- (1) Obtain the USB Flash Drive, STD-13649

SUBTASK 34-46-00-550-002

- (2) Create a text file by copying the four lines below and save it to a file named "FH.lst".

HONEYWELL-EGPWS-MKVA-DOWN: Comments

{

DLNVM,fh.dat

}

SUBTASK 34-46-00-550-003

- (3) You can create a text file by download from the Honeywell website at:

<http://www51.honeywell.com/aero/common/documents/FH.zip>

When the "File Download" dialog box appear, click on "save" button to save the file to your PC.

A file named FH.lst will be created when using WinZip to Unzip the file.

SUBTASK 34-46-00-860-327

- (4) Make sure the memory stick is formatted to a standard Windows/DOS FAT32 format, and does not have other files on it.

SUBTASK 34-46-00-970-001

- (5) Copy the FH.lst file onto the memory stick.

**E. Procedure**

SUBTASK 34-46-00-860-324

- (1) Make sure the COMPUTER STATUS light on the front panel of the GPWC shows GREEN in color.

SUBTASK 34-46-00-860-325

- (2) Make sure the EXTERNAL FAULT light on the front panel of the GPWC is off.

SUBTASK 34-46-00-010-003

- (3) Open the front panel door on the GPWC.

NOTE: A placard inside the door contains instructions for data loading.

SUBTASK 34-46-00-860-326

- (4) Make sure the DATALOAD STATUS light is off.

SUBTASK 34-46-00-470-007

- (5) Do these steps to download the flight history data:

(a) Insert the USB drive, which contains the FH.1st file, into the USB port on the GPWC.

(b) Make sure the DATALOAD STATUS light shows YELLOW in color.

(c) If the DATALOAD STATUS light shows BLUE, the inserted device is unserviceable.

(d) When the flight history data transfer is completed, the DATALOAD STATUS light shows GREEN.

EFFECTIVITY

AKS ALL

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- 1) If the DATALOAD STATUS light shows RED, the flight history data transfer failed.
- (e) Remove the USB drive.

SUBTASK 34-46-00-410-003

- (6) Close the front panel door on the GPWC.

SUBTASK 34-46-00-710-008

- (7) Make sure the GPWC is serviceable.
  - (a) Make sure the COMPUTER STATUS light is GREEN.
  - (b) Make sure the EXTERNAL FAULT light is off.

SUBTASK 34-46-00-510-002

- (8) Send the USB memory stick with the flight history data to airline engineering.

————— END OF TASK ————

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### TASK 34-46-00-710-805

#### | 15. Runway Awareness and Advisory System (RAAS) Activation

NOTE: This task is only applicable for the aircraft with EGPWC MK-V installed.

##### A. General

- (1) This task provides instructions to load the Runway Awareness and Advisory System (RAAS) Configuration Database (RCD) activation software into the Ground Proximity Warning Computer (GPWC).
- (2) The RCD activation software load is inhibited when the airplane is in the air. The database will automatically load into the GPWC after you install the RCD Personal Computer Memory Card International Association (PCMCIA) card into the card slot on the front of the GPWC.

NOTE: For this procedure, you can ignore caution notes (shown on the PCMCIA card) about damage if you put in or remove the card when the GPWC power is on. The GPWC automatically applies and removes PCMCIA card power.

##### B. References

Reference	Title
34-46-00-710-804-002	Ground Proximity Warning System - Operational Test (P/B 501)

##### C. Tools/Equipment

Reference	Description
STD-8900	Card - Flash, RAAS RCD PCMCIA, RAAS Activation (Honeywell P/N 718-XXXX-XXX)

##### D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

##### E. Procedure

SUBTASK 34-46-00-710-006

- (1) Make sure that the ground proximity warning system (GPWS) is operational (Ground Proximity Warning System - Operational Test, TASK 34-46-00-710-804-002).

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SUBTASK 34-46-00-210-001

- (2) Make sure the COMPUTER OK light on the front of the GPWC is on.

SUBTASK 34-46-00-210-002

- (3) Make sure the EXTERNAL FAULT and the COMPUTER FAIL lights on the front panel of the GPWC are off.

SUBTASK 34-46-00-470-003

- (4) Open the door on the front panel of the GPWC.

SUBTASK 34-46-00-210-003

- (5) Make sure the IN PROG, CARD CHNG, XFER COMP, and XFER FAIL lights on the GPWC are off.
- (6) Make sure the application software version P/N -055 or later, and terrain database version P/N -435 or later, are loaded in the GPWC.

SUBTASK 34-46-00-470-004

- (7) Do these steps to load the RAAS RCD PCMCIA card:

- (a) Insert the RAAS RCD PCMCIA card, STD-8900 into the card slot on the GPWC.

NOTE: After the card is installed, the RAAS RCD activation software will automatically load into the GPWC. Load time for the RAAS RCD PCMCIA card is approximately 45 seconds. The part number of RCD is shown as 34XX-SGC-70X-XX on the CDS. The last three digits (XXX) show the version the RCD.

- (b) Make sure that the IN PROG light on the GPWC comes on.

- (c) When the XFER COMP light on the GPWC comes on, do this step to remove the RAAS RCD PCMCIA card, STD-8900:

- 1) Push the eject button on the GPWC and remove the RAAS RCD PCMCIA card, STD-8900.

- (d) After approximately 45 seconds, make sure that the COMPUTER OK light on the GPWC is on and all the other lights are off.

SUBTASK 34-46-00-700-005

- (8) Do the steps that follow to make sure that the activation of the RCD is correct:

- (a) Press the self test switch on the GPWC front panel for less than 2 seconds and release to initiate Level 1 self test.

- (b) After Level 1 self test message starts, press the self test switch for less than 2 seconds and release to cancel the Level 1 test and start the Level 2 self test.

- (c) After the Level 2 self test begins, press the self test switch to cancel the Level 2 test.

- (d) When you hear the aural annunciation "PRESS TO CONTINUE," press the self test switch for less than 2 seconds and release to start the Level 3 self test.

- (e) Make sure that the self test Level 3 starts with the aural annunciation, "SYSTEM CONFIGURATION."

- (f) Record the RCD software part number (announced at the end of the system configuration information) by listening with headphones to the following aural annunciations:

- 1) "PART NUMBER XXX-XXXX-XXX-XXX-XXX"

- 2) "MODE STATUS"

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- 3) "SERIAL NUMBER XXXXX"
  - 4) "APPLICATION SOFTWARE VERSION XXXXX"
  - 5) "CONFIGURATION SOFTWARE VERSION XXXXX"
  - 6) "TERRAIN DATABASE VERSION XXX"
  - 7) "ENVELOPE MODE DATABASE VERSION XXX"
  - 8) "RCD PART NUMBER XXX-XXXX-XX"
- (g) Make sure that the part number announced with the PCMCIA part number in the appropriate Bill of Material (BOM) list.
- (h) Make sure that the following message is announced:
- 1) "RUNWAY AWARENESS ENABLED."
- NOTE: This message will be announced at or near the end of the list of selected options.
- (i) When the test is finished, close the door on the front panel of the GPWC

———— END OF TASK ————

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

**TASK 34-46-00-710-806**

**| 16. Load the RAAS RCD Software with a USB Flash Drive**

**A. General**

- (1) This task gives instructions to load the Runway Awareness and Advisory System Configuration Database (RCD) activation software into the ground proximity warning computer (GPWC).
- (2) The RCD activation software load is inhibited when the airplane is in the air. The database will automatically load into the GPWC after you install the RCD USB 2.0 or 3.0 mass storage device into the USB port on the front panel of the GPWC.

NOTE: The GPWC is not compatible with USB hubs or encrypted drives.

**B. References**

<b>Reference</b>	<b>Title</b>
34-46-00-710-804-002	Ground Proximity Warning System - Operational Test (P/B 501)

**C. Tools/Equipment**

<b>Reference</b>	<b>Description</b>
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono RCA Audio Plug

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**E. procedure**

SUBTASK 34-46-00-710-011

- (1) Make sure the ground proximity warning system (GPWS) is operational, do this task Ground Proximity Warning System - Operational Test, TASK 34-46-00-710-804-002



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SUBTASK 34-46-00-860-344

- (2) Make sure that the COMPUTER STATUS light on the front panel of the GPWC is green.

SUBTASK 34-46-00-860-345

- (3) Make sure that the EXTERNAL FAULT light on the front panel of the GPWC is off.

NOTE: The EXTERNAL FAULT light could be yellow if a required external signal is missing.

SUBTASK 34-46-00-010-010

- (4) Open the door on the front panel of the GPWC.

NOTE: A placard inside the door contains instructions for data loading.

SUBTASK 34-46-00-860-346

- (5) Make sure that the DATALOAD STATUS light is off.

SUBTASK 34-46-00-470-023

- (6) Do these steps to load the RAAS RCD:

- (a) Insert the USB flash drive which contains the RAAS RCD software into the USB port on the GPWC.

NOTE: After the USB drive is inserted, the RAAS RCD software automatically starts to load into the GPWC.

- (b) Make sure that the DATALOAD STATUS light changes to yellow.

- (c) When the RAAS RCD transfer is complete, the DATALOAD STATUS light changes to green.

- (d) Remove the USB flash drive.

NOTE: The GPWC will reboot automatically after the transfer

- (e) After approximately 25 seconds, make sure that the COMPUTER STATUS light is green.

- (f) Make sure that the DATALOAD STATUS light is off.

- (g) Make sure that the EXTERNAL FAULT light is off.

NOTE: The EXTERNAL FAULT light could be yellow if a required external signal is missing.

SUBTASK 34-46-00-700-032

- (7) Do these steps to verify the RAAS RCD software part number:

- (a) Plug the headphone, STD-1390 into the HEADPHONES connector.

- (b) Push the self test switch on the GPWC front panel for less than 2 seconds and release to initiate the Level 1 self test.

NOTE: Pressing the switch for longer than 2 seconds will either cancel the self test or the "PRESS TO CONTINUE" message will be annunciated to allow continuation through the self test levels.

- (c) After the Level 1 self test message starts, push the self test switch for less than 2 seconds and release to cancel the Level 1 self test and start the Level 2 self test.

- (d) After the Level 2 self test starts, wait until the "PRESS TO CONTINUE" message is annunciated, push the self test switch for less than 2 seconds and release to start the Level 3 self test.

NOTE: The Level 3 self test begins with the "SYSTEM CONFIGURATION" aural annunciation.

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- (e) Record the RCD software part number when this message is annunciated:
  - 1) "RCD PART NUMBER XXXXXXXX-XXX".
    - a) If the RCD part number is not correct, then load the RAAS RCD software using the USB flash drive again.
- (f) Make sure that this message is annunciated.
  - 1) "RUNWAY AWARENESS ENABLED". The message will be heard at or near the end of the selected options.
- (g) When the test finishes, close the door on the front panel of the GPWC.

———— END OF TASK ————

**TASK 34-46-00-470-810**

**| 17. Load the RAAS RCD Software with an ARINC 615A Data Loader**

**A. General**

- (1) This task gives instructions to load the Runway Awareness and Advisory System Configuration Database (RCD) activation software into the ground proximity warning computer (GPWC).
- (2) Obtain a CD-ROM disc or a USB flash drive with the RAAS RCD software and install it into the ARINC 615A data loader. Refer to the supplier manual for instructions for the particular data loader that is used.
- (3) The RAAS RCD software load is inhibited when the airplane is in the air.

**B. References**

<b>Reference</b>	<b>Title</b>
34-46-00-710-804-002	Ground Proximity Warning System - Operational Test (P/B 501)

**C. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-11119	Dataloader - Portable, ARINC 615A Part #: 800-0632 Supplier: 1JSZ6 Part #: P2K-615A-06 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0
STD-1390	Headphone - 600 Ohm, with 1/4 Inch Mono RCA Audio Plug

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**E. Procedure**

**SUBTASK 34-46-00-710-012**

- (1) Make sure the ground proximity warning system (GPWS) is operational, do this task Ground Proximity Warning System - Operational Test, TASK 34-46-00-710-804-002

<b>EFFECTIVITY</b>
<b>AKS ALL</b>

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**AKS 005-999; AKS 001-004 POST SB 737-34-2617 (Continued)**

SUBTASK 34-46-00-860-347

- (2) Make sure that the COMPUTER STATUS light on the front panel of the GPWC is green.

SUBTASK 34-46-00-860-348

- (3) Make sure that the EXTERNAL FAULT light on the front panel of the GPWC is off.

NOTE: The EXTERNAL FAULT light could be yellow if a required external signal is missing.

SUBTASK 34-46-00-010-011

- (4) Open the door on the front panel of the GPWC.

NOTE: A placard inside the door contains instructions for data loading.

SUBTASK 34-46-00-860-349

- (5) Make sure the DATALOAD STATUS light is off.

SUBTASK 34-46-00-470-024

- (6) Do these steps to load the RAAS RCD:

- (a) Connect a Cat 5 Ethernet cable to the ARINC 615A loader, COM-11119 and connect the other end of the Ethernet cable into the DATA LOAD port at the front panel of the GPWC.
- (b) Follow the manufacturer's instructions to boot-up the data loader.
- (c) Navigate to the folder where the GPWC RAAS RCD software files are located on the data loader to start the download.
- (d) Make sure that the DATALOAD STATUS light changes to yellow during the software load.
- (e) When the RAAS RCD transfer is complete, the DATALOAD STATUS light changes to green.

NOTE: The GPWC will reboot automatically after the transfer.

- (f) After approximately 25 seconds, make sure that the COMPUTER STATUS light is green.
- (g) Make sure that the DATALOAD STATUS light is off.
- (h) Make sure that the EXTERNAL FAULT light is off.

NOTE: The EXTERNAL FAULT light could be yellow if a required external signal is missing.

SUBTASK 34-46-00-860-350

- (7) Follow the manufacturer's instructions to stop/close the data loader program.

SUBTASK 34-46-00-020-003

- (8) Disconnect the Ethernet cable from the DATA LOAD port on the GPWC.

SUBTASK 34-46-00-700-033

- (9) Do these steps to verify the RAAS RCD software part number:

- (a) Plug headphone, STD-1390 into the HEADPHONES connector.
- (b) Push the self test switch on the GPWC front panel for less than 2 seconds and release to initiate the Level 1 self test.

NOTE: Pressing the switch for longer than 2 seconds will either cancel the self test or the "PRESS TO CONTINUE" message will be annunciated to allow continuation through the self test levels.

- (c) After the Level 1 self test message starts, push the self test switch for less than 2 seconds and release to cancel the Level 1 self test and start the Level 2 self test.

EFFECTIVITY	
AKS ALL	

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- (d) After the Level 2 self test starts, wait until the "PRESS TO CONTINUE" message is annunciated, push the self test switch for less than 2 seconds and release to start the Level 3 self test.

NOTE: The Level 3 self test begins with the "SYSTEM CONFIGURATION" aural annunciation.

- (e) Record the RCD software part number when this message is annunciated:  
1) "RCD PART NUMBER XXXXXXXX-XXX".  
a) If the RCD part number is not correct, then load the RAAS RCD software using the ARINC 615A loader, COM-11119 again.
- (f) Make sure that this message is annunciated:  
1) "RUNWAY AWARENESS ENABLED". The message will be heard at or near the end of the selected options.
- (g) When the test finishes, close the door on the front panel of the GPWC.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-46-00**



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GROUND PROXIMITY WARNING SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) An operational test of the ground proximity warning system (GPWS)
  - (2) A system test of the GPWS.

**TASK 34-46-00-710-804-002**

**2. Ground Proximity Warning System - Operational Test**

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-32-00-710-801	Stall Warning System - Operational Test (P/B 501)
31-62-00-440-801	Common Display System - Activation (P/B 201)
34-21-00-440-801	Air Data Inertial Reference System - Activation (P/B 201)
34-31-00-440-801	Instrument Landing System - Activation (P/B 201)
34-33-00-440-801	Low Range Radio Altimeter System - Activation (P/B 201)
34-43-00-440-801	Weather Radar (WXR) System - Activation (P/B 201)
34-58-00-440-801	Global Positioning System - Activation (P/B 201)
34-61-00-440-801	FMC - Activation (P/B 201)

**B. Location Zones**

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

**C. Prepare for the Operational Test**

SUBTASK 34-46-00-860-185-002

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

SUBTASK 34-46-00-860-186-002

- (2) Make sure that this circuit breaker is closed:

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	7	C00629	GND PROX WARN

SUBTASK 34-46-00-860-187-002

- (3) Make sure these systems are on:

- (a) Common Display System - Activation, TASK 31-62-00-440-801.
- (b) Low Range Radio Altimeter System - Activation, TASK 34-33-00-440-801.
- (c) Air Data Inertial Reference System - Activation, TASK 34-21-00-440-801.
- (d) Weather Radar (WXR) System - Activation, TASK 34-43-00-440-801.
- (e) Stall Warning System (TASK 27-32-00-710-801).
- (f) Instrument Landing System - Activation, TASK 34-31-00-440-801.

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- (g) Global Positioning System - Activation, TASK 34-58-00-440-801.
- (h) FMC - Activation, TASK 34-61-00-440-801.

**D. Procedure**

SUBTASK 34-46-00-860-188-002

- (1) Set the DISPLAYS - SOURCE switch on the instrument switching module, P5-28, to the ALL ON 1 position.

SUBTASK 34-46-00-860-293-002

- (2) Set the mode switch on the WXR control panel to the TEST position.

SUBTASK 34-46-00-860-294-002

- (3) Do these steps on the two EFIS control panels:
  - (a) Set the mode switch to the MAP position
  - (b) Set the range switch to 40 nautical miles
  - (c) Set the WXR switch to the on position

SUBTASK 34-46-00-750-135-002

- (4) Make sure the weather radar data shows on the displays.

SUBTASK 34-46-00-750-136-002

- (5) Set the TERR switch on the two EFIS control panels to the on position.

SUBTASK 34-46-00-750-131-002

- (6) Make sure the terrain data and the blue TERR messages show on the displays.

NOTE: Horizontal position data must be available to obtain the blue TERR message. The amber TERR POS message shows when there is not enough accuracy in the horizontal position data, or if the horizontal position data is not available.

NOTE: GPS data can be confirmed by selecting the FMC-CDU to the POS REF page.

SUBTASK 34-46-00-750-097-002

- (7) Push and momentarily hold the INOP light on the ground proximity warning module to do a test of the light.

- (a) Make sure the INOP light comes on while you push the INOP light.

SUBTASK 34-46-00-740-055-002

- (8) Push and hold the GPWS SYS TEST switch on the ground proximity warning module for approximately six seconds.

- (a) Make sure the INOP light comes on within six seconds.

SUBTASK 34-46-00-750-099-002

- (9) Make sure the aural and visual indications occur as follows:

**Table 501/34-46-00-993-802-002**

GPWS INDICATIONS		
LIGHT/MESSAGE (ON)	LIGHT/MESSAGE (OFF)	AURAL SOUND FROM SPEAKERS
Amber GPWS INOP light; cyan TERR TEST on the displays		
	Amber GPWS INOP	
The two amber BELOW G/S lights		GLIDESLOPE

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**Table 501/34-46-00-993-802-002 (Continued)**

GPWS INDICATIONS		
LIGHT/MESSAGE (ON)	LIGHT/MESSAGE (OFF)	AURAL SOUND FROM SPEAKERS
	The two amber BELOW G/S lights	
Red PULL UP message on Capt's and F/O's displays; TERR FAIL on the displays	Cyan TERR TEST on the displays	PULL UP
	Red PULL UP message on Capt's and F/O's displays	
Red WINDSHEAR message on Capt's and F/O's displays		Two tone siren WINDSHEAR, WINDSHEAR, WINDSHEAR
	Red WINDSHEAR message on Capt's and F/O's displays; TERR FAIL on the displays	
Red PULL UP message on Capt's and F/O's displays; red TERRAIN message and test pattern on the displays		TERRAIN, TERRAIN- PULL UP
	Red PULL UP message on Capt's and F/O's displays; red TERRAIN message and test pattern on the displays	
Amber TERRAIN message on Capt's and F/O's displays; red PULL UP message on Capt's and F/O's displays; amber TERRAIN changes to red OBSTACLE; red OBSTACLE changes to amber		OBSTACLE, OBSTACLE- PULL UP
	Amber OBSTACLE on Captain's and F/O PFD (or EFIS) displays	
GPWS INOP light		
		RUNWAY AWARENESS OK, FEET (METERS)
		AIR SPEED LOW
		SINK RATE
		PULL UP
		TERRAIN
		PULL UP
		DON'T SINK, DON'T SINK
		TOO LOW TERRAIN
		TOO LOW GEAR
		TOO LOW FLAPS
		TOO LOW TERRAIN

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Table 501/34-46-00-993-802-002 (Continued)

GPWS INDICATIONS		
LIGHT/MESSAGE (ON)	LIGHT/MESSAGE (OFF)	AURAL SOUND FROM SPEAKERS
		GLIDESLOPE
		BANK ANGLE BANK ANGLE
		APPROACHING MINIMUMS
		MINIMUMS
		ONE THOUSAND
		FIVE HUNDRED
		ONE HUNDRED
		FIFTY
		THIRTY
		TWENTY
		TEN
		FIVE HUNDRED
		Two tone siren WINDSHEAR, WINDSHEAR, WINDSHEAR
		TOO LOW TERRAIN
		CAUTION TERRAIN CAUTION TERRAIN
		TERRAIN, TERRAIN-PULL UP
		CAUTION OBSTACLE CAUTION OBSTACLE
		OBSTACLE, OBSTACLE- PULL UP
	GPWS INOP light and test pattern on the displays. Cyan TERR TEST on the displays.	

SUBTASK 34-46-00-860-191-002

- (10) Set the DISPLAYS - SOURCE switch on the instrument switching module to the ALL ON 2 position.

SUBTASK 34-46-00-750-137-002

- (11) Make sure the terrain data and the TERR messages show on the displays.

SUBTASK 34-46-00-740-056-002

- (12) Push and hold the GPWS SYS TEST switch on the ground proximity warning module.

NOTE: Do not hold the GPWS SYS TEST switch longer than 2 seconds.

- (a) Make sure the red PULL UP message shows on the captain's and first officer's displays.

NOTE: All other aural and visual annunciations may be ignored.

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SUBTASK 34-46-00-860-192-002

- (13) Set the DISPLAYS SOURCE SELECT switch on the instrument switching module to the AUTO position.

### E. Put the Airplane Back to Its Usual Condition

SUBTASK 34-46-00-860-193-002

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

———— END OF TASK ————

## TASK 34-46-00-730-804-002

### 3. Ground Proximity Warning System - System Test

#### A. General

- (1) The system test does an internal GPWC check and a check of system interfaces.
- (2) This test uses GPS data. The airplane must be moved to a position where the GPS antennas have a clear view of the GPS satellites.
- (3) Various systems interface with the GPWC. Some systems send data. Some systems send a single discrete signal.
- (4) The systems that send data have verbal error messages. In this procedure, you do a check of these signals when you turn a system off and hear an aural message annunciated.
  - (a) Some systems supply two sources and are redundant. You turn one system off and hear an aural message. The GPWC will still function with data from the redundant system. Then, you turn the second system off and look for the INOP light on the ground proximity warning module to come on.

#### B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
27-61-00-800-802	Remove Pressure from the Spoiler Hydraulic Systems A and B (P/B 201)
32-09-00-840-802	Return the Airplane Systems Back to Their Normal On Ground Condition (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-31-00-730-802	System Test - Landing Gear Control System (P/B 501)

#### C. Location Zones

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

#### D. Access Panels

Number	Name/Location
112A	Forward Access Door

#### E. Prepare for the System Test

SUBTASK 34-46-00-860-194-002

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

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SUBTASK 34-46-00-860-315-002

- (2) Make sure that the airplane is in a location where it can receive GPS signals.

SUBTASK 34-46-00-860-196-002

- (3) Set the left and right ADIRS mode select switches to the NAV position.

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SUBTASK 34-46-00-750-134-002

- (4) Make sure the green COMPUTER OK light on the GPWC front panel is on.  
(a) Make sure the yellow EXTERNAL FAULT light on the GPWC front panel is not on.  
(b) Make sure the red COMPUTER FAIL light on the GPWC front panel is not on.

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SUBTASK 34-46-00-750-142

- (5) Make sure the yellow EXTERNAL FAULT light on the GPWC front panel is not on.

SUBTASK 34-46-00-750-143

- (6) Make sure the green COMPUTER STATUS light on the GPWC front panel is on.

**AKS ALL; AIRPLANES WITH DUAL FMC**

SUBTASK 34-46-00-860-197-002

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- (7) Set the FMC transfer switch to the NORMAL position.  
(a) Make sure the green COMPUTER OK light on the GPWC front panel is on.  
(b) Make sure the yellow EXTERNAL FAULT light on the GPWC front panel is not on.  
(c) Make sure the red COMPUTER FAIL light on the GPWC front panel is not on.

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

- (8) Set the FMC transfer switch to the NORMAL position.  
(a) Make sure the green COMPUTER STATUS light on the GPWC front panel is on.  
(b) Make sure the yellow EXTERNAL FAULT light on the GPWC front panel is not on.

**AKS ALL; AIRPLANES WITH DUAL FMC**

SUBTASK 34-46-00-860-295-002

**AKS 001-004 PRE SB 737-34-2617**

- (9) Set the FMC transfer switch to the BOTH ON R position.  
(a) Make sure the green COMPUTER OK light on the GPWC front panel is on.  
(b) Make sure the yellow EXTERNAL FAULT light on the GPWC front panel is not on.  
(c) Make sure the red COMPUTER FAIL light on the GPWC front panel is not on.

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

- (10) Set the FMC transfer switch to the BOTH ON R position.  
(a) Make sure the green COMPUTER STATUS light on the GPWC front panel is on.  
(b) Make sure the yellow EXTERNAL FAULT light on the GPWC front panel is not on.

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**AKS ALL; AIRPLANES WITH DUAL FMC**

SUBTASK 34-46-00-860-296-002

- (11) Set the FMC transfer switch to the NORMAL position.

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SUBTASK 34-46-00-750-100-002

- (12) Make sure the captain's and first officer's BELOW G/S switch-lights on the P1-1 and P3-1 panels are not on.

SUBTASK 34-46-00-750-101-002

- (13) Make sure these messages do not show on the captain's and first officer's displays:

- (a) PULL UP
- (b) WINDSHEAR

SUBTASK 34-46-00-750-102-002

- (14) Make sure the INOP light on the ground proximity warning module is not on.

SUBTASK 34-46-00-860-200-002

- (15) Make sure the FLAP INHIBIT, GEAR INHIBIT, and TERR INHIBIT switches on the ground proximity warning module are in the NORMAL position.

SUBTASK 34-46-00-860-202-002

- (16) Make sure the landing gear lever is in the DOWN position.

SUBTASK 34-46-00-860-203-002

- (17) Make sure the LIGHTS switch on the P1-3 panel is in the BRIGHT position.

**F. Program Pin Test**

SUBTASK 34-46-00-740-057-002

NOTE: You can do this test in the electrical and electronics compartment or in the flight compartment. If you do the test from the flight compartment, you do not need headphones and you use the GPWS SYS TEST switch on the ground proximity warning module. If you do the test from the electrical and electronics compartment, you use the headphones and the SELF TEST switch on the front panel of the ground proximity warning computer.

- (1) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-740-058-002

- (2) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

SUBTASK 34-46-00-740-059-002

- (3) After the level 2 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 3 self-test.

NOTE: The level 3 self-test starts with the voice annunciation "SYSTEM CONFIGURATION".

- (a) Make sure you hear these aural messages in the sequence that follows:

- 1) PART NUMBER XXX-XXXX-XXX-XXX-XXX
- 2) MOD STATUS X
- 3) SERIAL NUMBER XXX





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- 4) SOFTWARE VERSION XXX-XXX-XX

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- 5) TERRAIN DATABASE VERSION XXX
- 6) ENVELOPE MOD DATABASE VERSION XXX

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- 7) OSS CONFIGURATION FILE XXXX

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- 8) BOOT CODE VERSION XXXX

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- 9) AIRCRAFT TYPE TWO ONE TWO

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- 10) AIRCRAFT TYPE SEVEN ONE TWO

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- 11) AUDIO MENU ZERO
- 12) ALTITUDE CALLOUT MENU FOUR EIGHT
- 13) SMART CALLOUT SELECTED

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- 14) CONFIGURATION OPTION 3 SELECTED

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- 15) OPTIONAL INPUTS SELECTED
- 16) DUAL GPS SELECTED
- 17) DUAL ILS SELECTED
- 18) DUAL RADIO ALTIMETER SELECTED
- 19) WINDSHEAR CAUTION DISABLED
- 20) PWS OPTION 1 SELECTED
- 21) BANK ANGLE OPTION 2 SELECTED
- 22) PEAKS ENABLED
- 23) OBSTACLE AWARENESS ENABLED

SUBTASK 34-46-00-740-086-002

- (4) When you hear the "PRESS TO CONTINUE", wait approximately 30 seconds for the GPWC to stop the self-test mode.

**G. System Interface Test**

SUBTASK 34-46-00-860-204-002

- (1) Make sure the VHF NAV switch is in the NORMAL position.

SUBTASK 34-46-00-860-205-002

- (2) Set a frequency of 109.00 MHz on the captain's and first officer's VHF NAV control panels.

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SUBTASK 34-46-00-860-206-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

SUBTASK 34-46-00-750-103-002

- (4) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-740-060-002

- (5) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-207-002

- (6) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.  
(a) Make sure the aural message "RADIO ALTIMETER BUS 1 INACTIVE" is annunciated.

SUBTASK 34-46-00-860-208-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-46-00-750-104-002

- (8) Make sure the INOP light on the ground proximity warning module shows in 20 seconds or less.

SUBTASK 34-46-00-860-209-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1

SUBTASK 34-46-00-750-105-002

- (10) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-210-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

SUBTASK 34-46-00-750-106-002

- (12) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-211-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC





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SUBTASK 34-46-00-750-107-002

- (14) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-740-061-002

- (15) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-212-002

- (16) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

- (a) Make sure the aural messages "IRS BUS 1 INACTIVE" and "AIR DATA BUS 1 INACTIVE" are annunciated.

SUBTASK 34-46-00-860-213-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-46-00-750-108-002

- (18) Make sure the INOP light on the ground proximity warning module shows in 20 seconds or less.

SUBTASK 34-46-00-860-214-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01009	ADIRU LEFT DC
E	7	C01007	ADIRU LEFT AC

SUBTASK 34-46-00-750-109-002

- (20) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-740-062-002

- (21) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-215-002

- (22) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

- (a) Make sure the aural messages "IRS BUS 2 INACTIVE" and "AIR DATA BUS 2 INACTIVE" are annunciated.

SUBTASK 34-46-00-860-216-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
C	14	C01008	ADIRU RIGHT AC
C	17	C01010	ADIRU RIGHT DC

SUBTASK 34-46-00-750-110-002

- (24) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-710-004-002

- (25) Enter the IRS present position in the Inertial System Display Unit (ISDU).

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- (a) Set the SYS DSPL switch on the ISDU to the PPOS position.
- (b) Enter the latitude on the ISDU.
- (c) Push the ENT key on the ISDU to send the latitude data.
- (d) Enter the longitude on the ISDU.
- (e) Push the ENT key on the ISDU to send the longitude data.

SUBTASK 34-46-00-860-217-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

SUBTASK 34-46-00-740-063-002

- (27) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-218-002

- (28) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
- (a) Make sure the aural messages "ILS BUS 1 INACTIVE" and "GPS BUS 1 INACTIVE" are annunciated.  
  
NOTE: Ignore the INOP light on the ground proximity warning module if it shows, and ignore all other aural messages that you hear.

SUBTASK 34-46-00-860-219-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-46-00-860-220-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

SUBTASK 34-46-00-740-064-002

- (31) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-221-002

- (32) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
- (a) Make sure the aural message "ILS BUS 2 INACTIVE" and "GPS BUS 2 INACTIVE" is annunciated.

NOTE: Ignore the INOP light on the ground proximity warning module if it shows, and ignore all other aural messages that you hear.



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SUBTASK 34-46-00-860-222-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-46-00-750-111-002

- (34) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-223-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00629	GND PROX WARN

SUBTASK 34-46-00-750-112-002

- (36) Make sure the INOP light on the ground proximity warning module shows in 6 seconds or less.

SUBTASK 34-46-00-860-224-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00629	GND PROX WARN

SUBTASK 34-46-00-750-113-002

- (38) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-225-002

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01204	SMYD-1 CMPTR DC

SUBTASK 34-46-00-750-132-002

- (40) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-740-065-002

- (41) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-226-002

- (42) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

- (a) Make sure the aural message "SMYD BUS 1 INACTIVE" is annunciated.

SUBTASK 34-46-00-860-227-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C01206	SMYD-2 CMPTR DC

SUBTASK 34-46-00-750-114-002

- (44) Make sure the INOP light on the ground proximity warning module shows in 20 seconds or less.



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SUBTASK 34-46-00-860-228-002

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
E	5	C01204	SMYD-1 CMPTR DC

SUBTASK 34-46-00-750-115-002

- (46) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-229-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C01206	SMYD-2 CMPTR DC

SUBTASK 34-46-00-750-116-002

- (48) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-230-002

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C01359	DISPLAY DEU 1 PRI

SUBTASK 34-46-00-740-066-002

- (50) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-231-002

- (51) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

- (a) Make sure the aural message "EFIS BUS 1 INACTIVE" is annunciated.

SUBTASK 34-46-00-860-232-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C01360	DISPLAY DEU 2 PRI

SUBTASK 34-46-00-740-067-002

- (53) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-233-002

- (54) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

- (a) Make sure the aural messages "EFIS BUS 1 INACTIVE" and "EFIS BUS 2 INACTIVE" are annunciated.

NOTE: Ignore the INOP light on the ground proximity warning module if it shows, and ignore all other aural messages that you hear.



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SUBTASK 34-46-00-860-234-002

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	5	C01359	DISPLAY DEU 1 PRI

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	11	C01360	DISPLAY DEU 2 PRI

NOTE: The DEU may take several minutes to become operational.

SUBTASK 34-46-00-750-118-002

- (56) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-235-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-46-00-750-119-002

- (58) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-740-068-002

- (59) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.

SUBTASK 34-46-00-860-236-002

- (60) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.

- (a) Make sure the aural message "WEATHER RADAR HAZARD BUS 1 INACTIVE" is annunciated.

SUBTASK 34-46-00-860-237-002

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	13	C00120	WEATHER RADAR RT

SUBTASK 34-46-00-750-120-002

- (62) Make sure the INOP light on the ground proximity warning module does not show.

SUBTASK 34-46-00-860-238-002

- (63) If terrain data does not show on the displays, push the TERR switch on the EFIS control panel to the on position.

SUBTASK 34-46-00-750-141-002

- (64) Make sure the terrain data and the blue TERR messages show on the displays.

NOTE: Horizontal position data must be available to obtain the blue TERR message. The amber TERR POS message shows when there is not enough accuracy in the horizontal position data, or if the horizontal position data is not available.

NOTE: GPS data can be confirmed by selecting the FMC-CDU to the POS REF page.



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SUBTASK 34-46-00-860-239-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY

SUBTASK 34-46-00-730-003-002

- (66) Make sure the TERR FAIL message shows on the displays.

SUBTASK 34-46-00-860-241-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY

SUBTASK 34-46-00-730-004-002

- (68) Make sure the terrain data shows on the displays.

## H. Air/Ground Discrete Test

SUBTASK 34-46-00-740-069-002

- (1) Do these steps to do a level 6 self-test:

- Push the GPWS SYS TEST switch on the ground proximity warning module for one second.
- After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
- After the level 2 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 3 self-test.
- After the level 3 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 4 self-test.
- After the level 4 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 5 self-test.
- After the level 5 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 6 self-test.

SUBTASK 34-46-00-860-243-002

**WARNING:** DO THE DEACTIVATION PROCEDURE FOR THE SPOILERS OR MOVE ALL PERSONS AND EQUIPMENT AWAY FROM THE SPOILERS. THE SPOILERS CAN RETRACT QUICKLY AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Deactivate the spoilers or move all persons and equipment away from the control surfaces. To deactivate the spoilers, do this task: Remove Pressure from the Spoiler Hydraulic Systems A and B, TASK 27-61-00-800-802.

SUBTASK 34-46-00-740-087-002

- (3) Use the PSEU BITE to put the airplane in the air mode. To do this, do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 34-46-00-740-088-002

- (4) Make sure the display shows SYS 1 IS IN AIR for approximately 2 seconds and then shows SET SYS 1 ON GND?.

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SUBTASK 34-46-00-740-089-002

- (5) Make sure the aural message "NOT ON GROUND" is annunciated.

SUBTASK 34-46-00-860-244-002

- (6) Do these steps to put the PSEU in ground mode:

- (a) Push and release the YES switch on the PSEU BITE panel.
  - 1) Make sure the display shows ARE YOU SURE?.
- (b) Push and release the YES switch on the PSEU BITE panel.
  - 1) Make sure the display shows SYS 1 IS ON GND for approximately 2 seconds and then shows SET SYS 1 IN AIR?.
  - 2) Make sure the aural message "ON GROUND" is annunciated.
- (c) Push and release the ON/OFF switch on the PSEU BITE panel.
  - 1) Make sure the display shows TURN OFF DISPLAY?.
- (d) Push and release the YES switch on the PSEU BITE panel.

NOTE: The display should be blank after this step.

SUBTASK 34-46-00-860-316-002

- (7) Close this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-46-00-860-300-002

- (8) Put the airplane systems back to their usual on-ground condition. To do this, do this task:  
Return the Airplane Systems Back to Their Normal On Ground Condition,  
TASK 32-09-00-840-802.

SUBTASK 34-46-00-860-245-002

- (9) Push and release the GPWS SYS TEST switch on the ground proximity warning module.

NOTE: This step will end the level 6 self-test.

## I. Flap Discrete Test

SUBTASK 34-46-00-740-071-002

- (1) Do these steps to do a level 6 self-test:

- (a) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.
- (b) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
- (c) After the level 2 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 3 self-test.
- (d) After the level 3 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 4 self-test.
- (e) After the level 4 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 5 self-test.
- (f) After the level 5 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 6 self-test.

SUBTASK 34-46-00-750-121-002

- (2) Set the FLAP INHIBIT switch on the ground proximity warning module to the INHIBIT position.

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- (a) Make sure the aural message "LANDING FLAPS" is annunciated.

SUBTASK 34-46-00-860-246-002

- (3) Set the FLAP INHIBIT switch on the ground proximity warning module to the NORMAL position.

- (a) Make sure the aural message "NOT LANDING FLAPS" is annunciated.

SUBTASK 34-46-00-860-247-002

- (4) Push and release the GPWS SYS TEST switch on the ground proximity warning module.

NOTE: This step will end the level 6 self-test.

### J. Landing Gear Handle Discrete Test

SUBTASK 34-46-00-740-072-002

- (1) Do these steps to do a level 6 self-test:

- (a) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.
  - (b) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
  - (c) After the level 2 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 3 self-test.
  - (d) After the level 3 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 4 self-test.
  - (e) After the level 4 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 5 self-test.
  - (f) After the level 5 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 6 self-test.

SUBTASK 34-46-00-750-122-002

**WARNING:** MAKE SURE THAT THE GROUND LOCKS ARE INSTALLED IN ALL OF THE LANDING GEAR [BEFORE YOU MOVE THE CONTROL LEVER]. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Set the landing gear lever to the OFF position (TASK 32-31-00-730-802).

- (a) Make sure the aural message "LANDING GEAR UP" is annunciated.

SUBTASK 34-46-00-860-248-002

- (3) Set the GEAR INHIBIT switch on the ground proximity warning module to the INHIBIT position.

- (a) Make sure the aural message "LANDING GEAR DOWN" is annunciated.

SUBTASK 34-46-00-860-249-002

- (4) Set the GEAR INHIBIT switch on the ground proximity warning module to the NORMAL position.

- (a) Make sure the aural message "LANDING GEAR UP" is annunciated.

SUBTASK 34-46-00-860-250-002

- (5) Set the landing gear lever to the DOWN position.

- (a) Make sure the aural message "LANDING GEAR DOWN" is annunciated.

SUBTASK 34-46-00-860-251-002

- (6) Push and release the GPWS SYS TEST switch on the ground proximity warning module.

NOTE: This step will end the level 6 self-test.

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**K. Terrain Inhibit Discrete Test**

SUBTASK 34-46-00-740-073-002

- (1) Do these steps to do a level 6 self-test:
  - (a) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.
  - (b) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
  - (c) After the level 2 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 3 self-test.
  - (d) After the level 3 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 4 self-test.
  - (e) After the level 4 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 5 self-test.
  - (f) After the level 5 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 6 self-test.

SUBTASK 34-46-00-860-252-002

- (2) Set the TERR INHIBIT switch on the ground proximity warning module to the INHIBIT position.
  - (a) Make sure the aural message "TERRAIN OFF" is annunciated.

SUBTASK 34-46-00-860-253-002

- (3) Set the TERR INHIBIT switch on the ground proximity warning module to the NORMAL position.
  - (a) Make sure the aural message "TERRAIN ON" is annunciated.

SUBTASK 34-46-00-860-254-002

- (4) Push and release the GPWS SYS TEST switch on the ground proximity warning module.

NOTE: This step will end the level 6 self-test.

**L. Glideslope Cancel Test**

SUBTASK 34-46-00-740-074-002

- (1) Do these steps to do a level 6 self-test:
  - (a) Push the GPWS SYS TEST switch on the ground proximity warning module for one second.
  - (b) After the level 1 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 2 self-test.
  - (c) After the level 2 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 3 self-test.
  - (d) After the level 3 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 4 self-test.
  - (e) After the level 4 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 5 self-test.
  - (f) After the level 5 self-test starts, push the GPWS SYS TEST switch on the ground proximity warning module for one second to go to the level 6 self-test.

SUBTASK 34-46-00-750-123-002

- (2) Push and hold the captain's BELOW G/S switch-light on the P1-1 panel.
  - (a) Make sure the aural message "GLIDESLOPE CANCELED" is annunciated.

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SUBTASK 34-46-00-750-124-002

- (3) Release the captain's BELOW G/S switch-light on the P1-1 panel.
  - (a) Make sure the aural message "GLIDESLOPE ENABLED" is annunciated.

SUBTASK 34-46-00-750-125-002

- (4) Push and hold the first officer's BELOW G/S switch-light on the P3-1 panel.
  - (a) Make sure the aural message "GLIDESLOPE CANCELED" is annunciated.

SUBTASK 34-46-00-750-126-002

- (5) Release the first officer's BELOW G/S switch-light on the P3-1 panel.
  - (a) Make sure the aural message "GLIDESLOPE ENABLED" is annunciated.

SUBTASK 34-46-00-860-255-002

- (6) Push and release the GPWS SYS TEST switch on the ground proximity warning module.  
NOTE: This step will end the level 6 self-test.

### M. Master Dim and Test

SUBTASK 34-46-00-740-075-002

- (1) Push and release the GPWS SYS TEST switch the ground proximity warning module.
  - (a) Make sure the captain's and first officer's BELOW G/S switch-lights come on bright.  
NOTE: Ignore the other self-test aural warnings and indications. Wait 30 seconds for the GPWC to stop the self-test.

SUBTASK 34-46-00-860-256-002

- (2) Set the LIGHTS switch on the P1-3 panel to the DIM position.

SUBTASK 34-46-00-740-076-002

- (3) Push and release the GPWS SYS TEST switch on the ground proximity warning module.
  - (a) Make sure the captain's and first officer's BELOW G/S switch-lights come on dim.  
NOTE: Ignore the other self-test aurals and indications.

SUBTASK 34-46-00-860-257-002

- (4) Set the LIGHTS switch on the P1-3 panel to the BRIGHT position.

### N. Put the Airplane Back to Its Usual Condition

SUBTASK 34-46-00-860-258-002

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

———— END OF TASK ————



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GROUND PROXIMITY WARNING COMPUTER - REMOVAL/INSTALLATION

1. General

- A. This subject has these tasks:
  - (1) A removal of the ground proximity warning computer (GPWC)
  - (2) An installation of the GPWC.
- B. The GPWC is on the E1 electronic equipment rack, shelf No. 1, in the main equipment center.

**TASK 34-46-01-000-801**

2. Ground Proximity Warning Computer Removal

(Figure 401)

A. References

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-000-801	E/E Box Removal (P/B 201)

B. Location Zones

Zone	Area
118	Electrical and Electronics Compartment - Right

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Removal Procedure

SUBTASK 34-46-01-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

SUBTASK 34-46-01-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
(TASK 06-41-00-800-801).	

SUBTASK 34-46-01-020-001

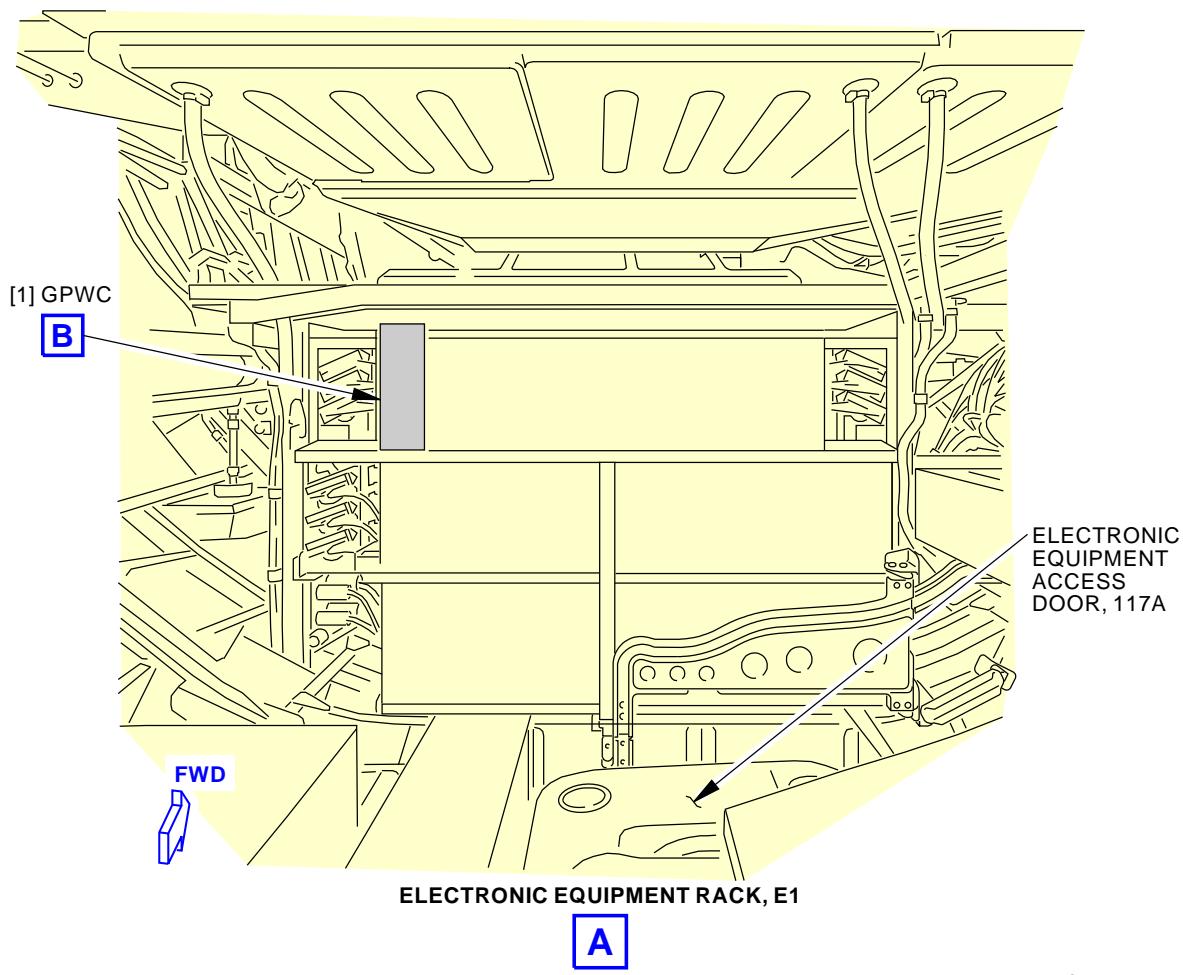
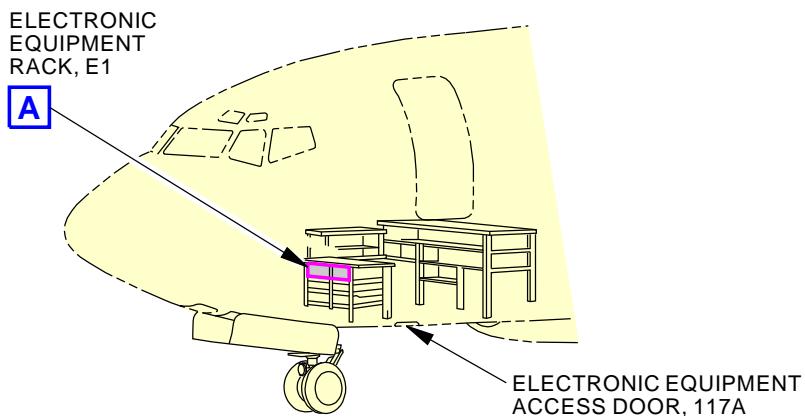
**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE GPWC. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE GPWC.

- (3) Remove the GPWC [1] (TASK 20-10-07-000-801).

———— END OF TASK ————

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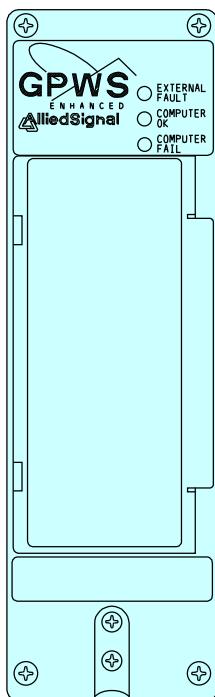
**Ground Proximity Warning Computer Installation**  
**Figure 401/34-46-01-990-802 (Sheet 1 of 3)**

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GROUND PROXIMITY  
WARNING COMPUTER

B

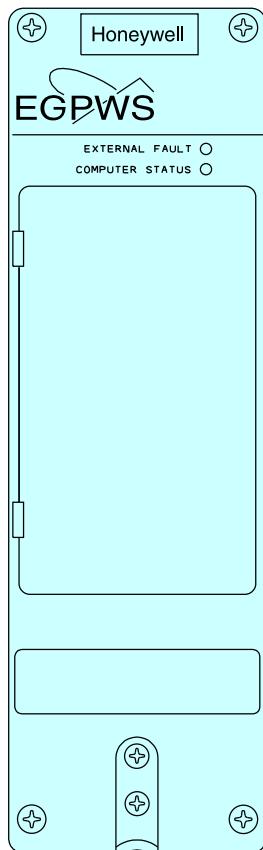
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Ground Proximity Warning Computer Installation  
Figure 401/34-46-01-990-802 (Sheet 2 of 3)

EFFECTIVITY  
AKS 001-004 PRE SB 737-34-2617

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GROUND PROXIMITY  
WARNING COMPUTER

**B**

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Ground Proximity Warning Computer Installation  
Figure 401/34-46-01-990-802 (Sheet 3 of 3)

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**TASK 34-46-01-400-801**

**3. Ground Proximity Warning Computer Installation**  
(Figure 401)

**A. References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-400-801	E/E Box Installation (P/B 201)
34-46-00-470-803	Load the Terrain Database with USB Drive Load (P/B 201)
34-46-00-470-804	Load the Operational Program (OPC) software with ARINC 615A Data Loader (P/B 201)
34-46-00-470-810	Load the RAAS RCD Software with an ARINC 615A Data Loader (P/B 201)
34-46-00-700-801	Verify the Terrain Database Part Number for PCMCIA Flash Card Load (P/B 201)
34-46-00-710-804-002	Ground Proximity Warning System - Operational Test (P/B 501)
34-46-00-710-805	Runway Awareness and Advisory System (RAAS) Activation (P/B 201)
34-46-00-710-806	Load the RAAS RCD Software with a USB Flash Drive (P/B 201)

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	GPWC	Not Specified	

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Installation Procedure**

SUBTASK 34-46-01-860-005

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

SUBTASK 34-46-01-420-001

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

- (2) Install the GPWC [1] (TASK 20-10-07-400-801).

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SUBTASK 34-46-01-860-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	7	C01519	TERRAIN DISPLAY
B	7	C00629	GND PROX WARN

**F. Installation Test**

**AKS 001-004 PRE SB 737-34-2617**

SUBTASK 34-46-01-740-003

- (1) Make sure the green COMPUTER OK light on the front panel of the GPWC is on.

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

SUBTASK 34-46-01-700-001

- (2) Make sure the green COMPUTER STATUS light on the front panel of the GPWC is on.

**AKS 001-004 PRE SB 737-34-2617**

SUBTASK 34-46-01-750-002

- (3) If your airline maintains a terrain database version requirement, then, do this task: Verify the Terrain Database Part Number for PCMCIA Flash Card Load, TASK 34-46-00-700-801.

**AKS 005-999; AKS 001-004 POST SB 737-34-2617**

SUBTASK 34-46-01-700-002

- (4) Do these steps to make sure the correct GPWC operational program configuration (OPC) and terrain database software is installed:
- Make sure the TERR switches on the EFIS control panels, P7, are on.
  - Push the SYS TEST switch on Ground Proximity Module (P3-7).
    - Make sure the terrain display test pattern is shown on the navigation display (ND).
  - Record the operational program configuration (OPC) part number and the terrain database part number.

NOTE: The test pattern shows magenta text for the operational program configuration part number, ie OSSBCGXXXXXXXXXX.

NOTE: The test pattern shows magenta text for the terrain database part number, ie TDBXXXX.

- If the OPC part number is not correct, then do this task: Load the Operational Program (OPC) software with ARINC 615A Data Loader, TASK 34-46-00-470-804.
- If the terrain database version is not correct, then do this task: Load the Terrain Database with USB Drive Load, TASK 34-46-00-470-803.

**AKS ALL**

SUBTASK 34-46-01-470-001

- (5) Do this task: Runway Awareness and Advisory System (RAAS) Activation, TASK 34-46-00-710-805 or Load the RAAS RCD Software with a USB Flash Drive, TASK 34-46-00-710-806 or Load the RAAS RCD Software with an ARINC 615A Data Loader, TASK 34-46-00-470-810



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SUBTASK 34-46-01-860-006

- (6) Do this task: Ground Proximity Warning System - Operational Test,  
TASK 34-46-00-710-804-002.

**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-46-01-410-002

- (1) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

(Finding an Access Door or Panel on the Lower Half of the Fuselage,  
TASK 06-41-00-800-801).

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-46-01**



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GROUND PROXIMITY WARNING MODULE - REMOVAL/INSTALLATION

**1. General**

- A. This subject has these tasks:
  - (1) A removal of the ground proximity warning module
  - (2) An installation of the ground proximity warning module.
- B. The ground proximity warning module is on the first officer's instrument panel, P3.

**TASK 34-46-02-000-801**

**2. Ground Proximity Warning Module Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-46-02-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00629	GND PROX WARN

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	10	C00335	PANEL & INSTR 28V PRI F/O
F	12	C00318	INDICATOR MASTER DIM SECT 6

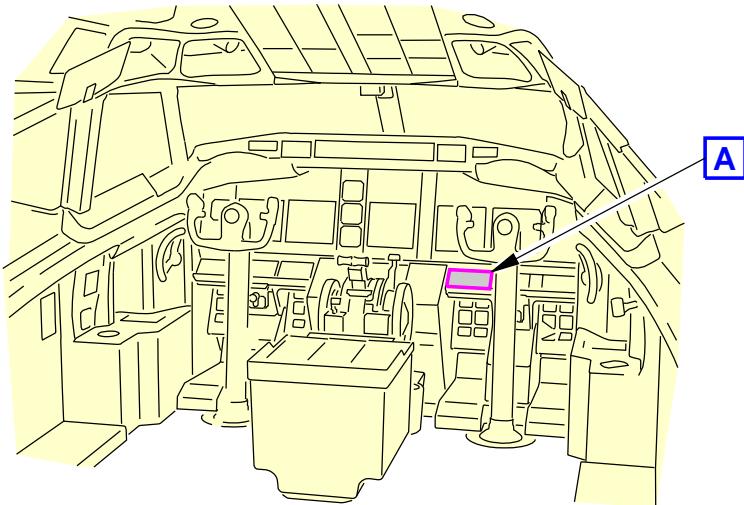
SUBTASK 34-46-02-020-001

- (2) Remove the ground proximity warning module [1]:
  - (a) Loosen the quarter turn fasteners [2] on the module [1].
  - (b) Pull the module [1] from the instrument panel until you can get to the electrical connector [3].
  - (c) Disconnect the electrical connector [3] from the module [1].
  - (d) Remove the ground proximity warning module [1].
  - (e) Put a protective cover on the electrical connector [3].

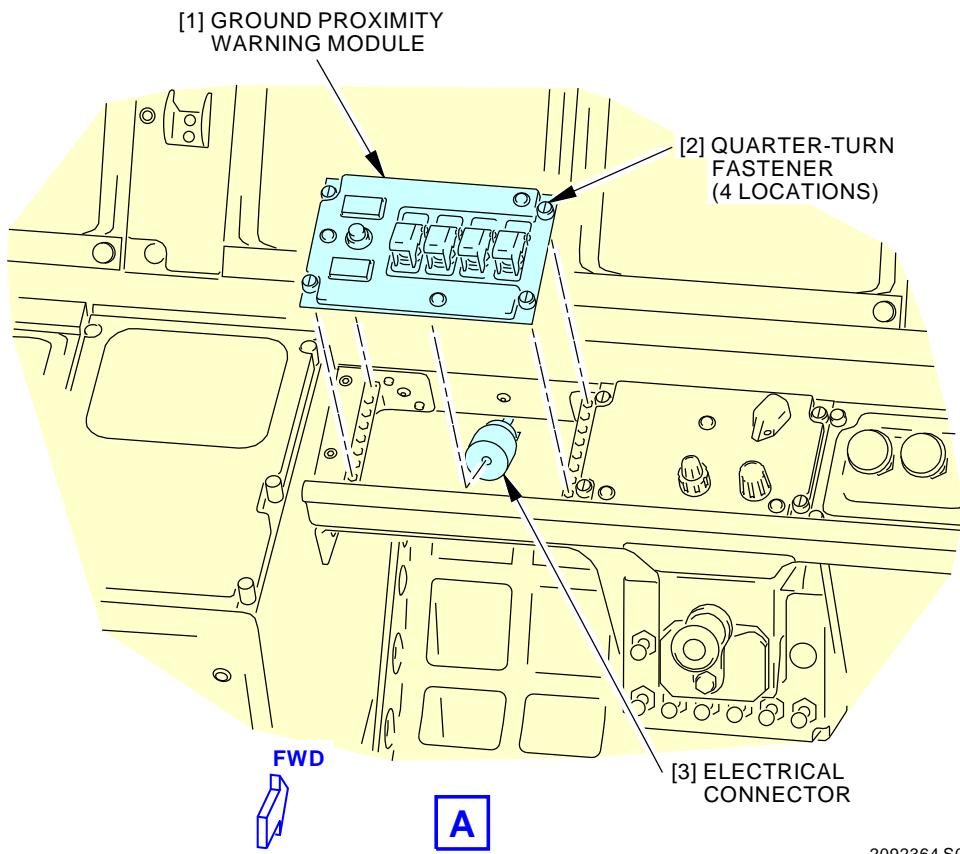
———— END OF TASK ————



**34-46-02**



FLIGHT COMPARTMENT



2092364 S0000442089\_V2

**Ground Proximity Warning Module Installation**  
**Figure 401/34-46-02-990-803**EFFECTIVITY  
AKS ALL**34-46-02**

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**TASK 34-46-02-400-801**

**3. Ground Proximity Warning Module Installation**

(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
34-46-00-710-804-002	Ground Proximity Warning System - Operational Test (P/B 501)

**B. Expendables/Parts**

<u>AMM Item</u>	<u>Description</u>	<u>AIPC Reference</u>	<u>AIPC Effectivity</u>
1	Module	31-11-51-07-425	AKS ALL

**C. Location Zones**

<u>Zone</u>	<u>Area</u>
212	Flight Compartment - Right

**D. Installation Procedure**

SUBTASK 34-46-02-860-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00629	GND PROX WARN

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	10	C00335	PANEL & INSTR 28V PRI F/O
F	12	C00318	INDICATOR MASTER DIM SECT 6

SUBTASK 34-46-02-420-001

- (2) Install the ground proximity warning module [1]:

- Remove the protective cover from the electrical connector [3].
- Connect the electrical connector [3] to the module [1].
- Lightly push the module [1] into the instrument panel.
- Tighten the quarter turn fasteners [2] that attach the module [1] to the instrument panel.

SUBTASK 34-46-02-860-003

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	7	C00629	GND PROX WARN

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	10	C00335	PANEL & INSTR 28V PRI F/O
F	12	C00318	INDICATOR MASTER DIM SECT 6

**E. Installation Test**

SUBTASK 34-46-02-760-002

- (1) Make Sure the lights on the P3-7 module [1] are on.

EFFECTIVITY	AKS ALL
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SUBTASK 34-46-02-710-001

- (2) Do this task: Ground Proximity Warning System - Operational Test,  
TASK 34-46-00-710-804-002

SUBTASK 34-46-02-710-002

- (3) Do the Runway Inhibit Discrete Test as follows:

- (a) Press and Release, as necessary, the GPWS SYS TEST button located on the P3-7 module [1] to place the GPWC in the level 6 self test.

**NOTE:** Pressing the Self Test switch for less than 2 seconds, while in any level of the self test will transition the test to the next step. Pressing the Self Test switch for longer than 2 seconds will either cancel the self test or "PRESS TO CONTINUE" is enunciated to allow continuation through the self test levels.

- (b) Position the RUNWAY INHIBIT switch on the P3-7 module [1] to INHIBIT.  
(c) Make sure the following message is annunciated: "RUNWAY AWARENESS INHIBIT".  
(d) Position the RUNWAY INHIBIT switch on the P3-7 module [1] to NORMAL.  
(e) Make sure the following message is annunciated: "RUNWAY AWARENESS NOT INHIBIT".

SUBTASK 34-46-02-760-001

- (4) Do the RUNWAY INOP light test as follows:

Open this circuit breaker:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

- (5) Make sure the RUNWAY INOP light is not illuminated.

- (6) Open this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

- (7) Make sure the RUNWAY INOP light is illuminated

**NOTE:** The GPWS INOP light may also be illuminated.

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

Remove the safety tag and close this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

- (9) Make sure the RUNWAY INOP light is off.

———— END OF TASK ————

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AKS ALL

**34-46-02**



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VOR SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) VOR Deactivation
  - (2) VOR Activation

**TASK 34-51-00-040-801**

**2. VOR - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power to the VOR system.

**B. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right
326	Vertical Fin - Fin Tip

**C. Procedure**

SUBTASK 34-51-00-860-074

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	12	C01375	RADIO NAVIGATION VOR 2

**D. VOR - Tryout**

NOTE: This tryout is to make sure the VOR system is in a zero energy state.

SUBTASK 34-51-00-860-075

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	12	C01375	RADIO NAVIGATION VOR 2

SUBTASK 34-51-00-710-011

- (2) Tune the captain's and first officer's navigation control panels to a local VOR station.

EFFECTIVITY
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- (a) On the P5 panel Instrument switch module, set the VHF NAV switch to "NORMAL" position.
- (b) Turn receiver volume control clockwise for NAV1 and/or NAV 2 on the Audio Control Panel.
  - 1) Make sure you can not hear the station identification code over the flight interphone system.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-51-00**

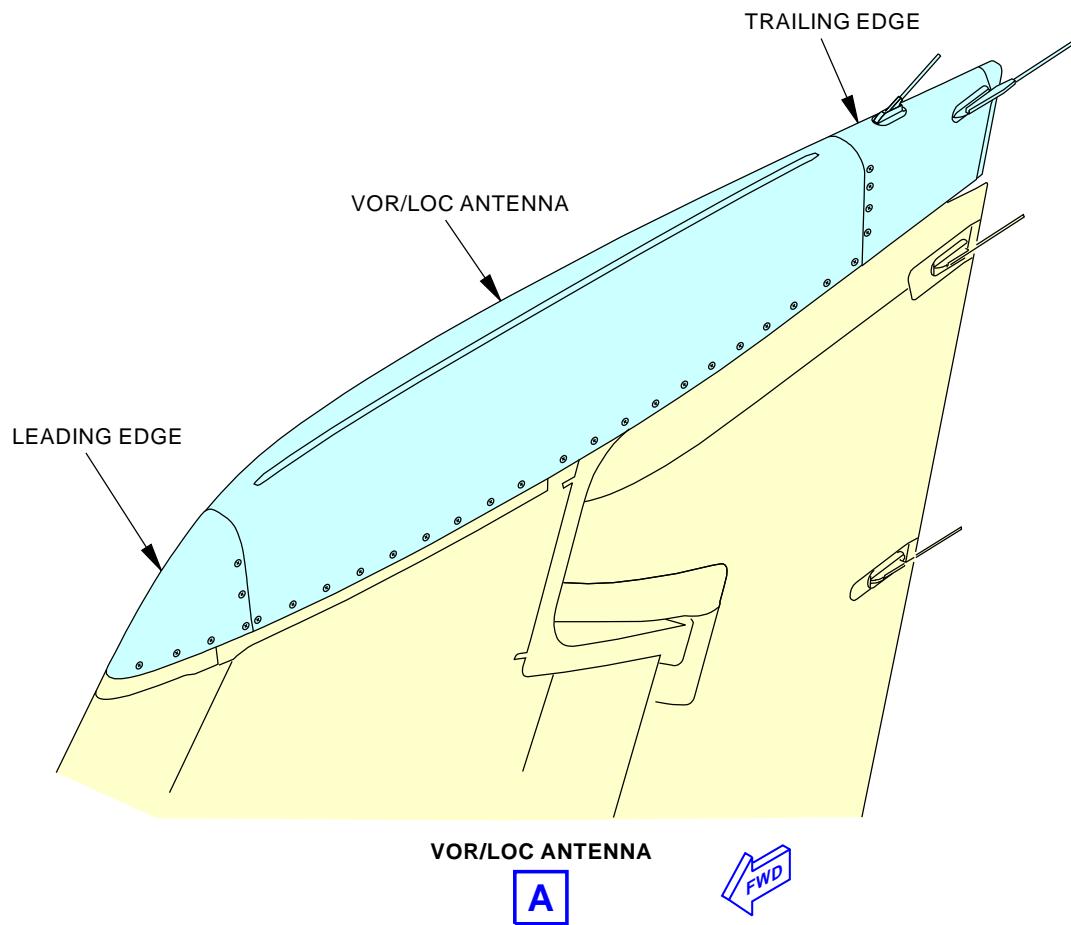
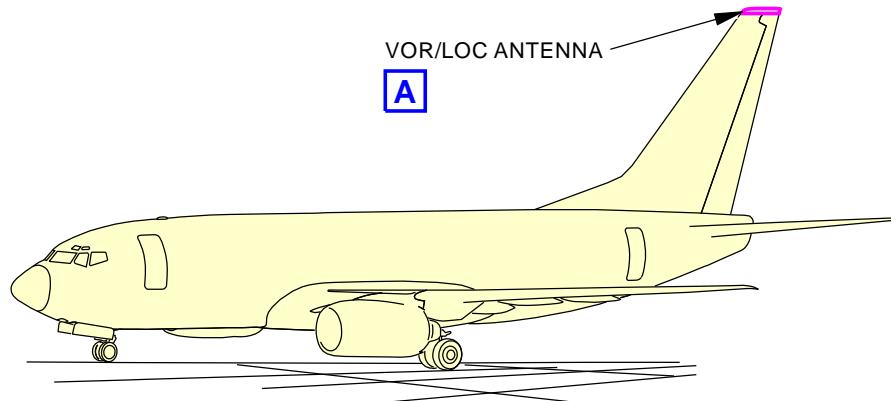
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VOR Antenna  
Figure 201/34-51-00-990-801

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**TASK 34-51-00-440-801**

**3. VOR - Activation**

(Figure 201)

**A. General**

- (1) This procedure adds electrical power to the VOR system.

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right
326	Vertical Fin - Fin Tip

**C. Procedure**

SUBTASK 34-51-00-860-076

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	12	C01375	RADIO NAVIGATION VOR 2

———— END OF TASK ————



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VOR SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
- (1) An operational test of the VOR system.
  - (2) A system test of the VOR system.

**TASK 34-51-00-710-801**

**2. VOR System - Operational Test**

**A. References**

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

**B. Location Zones**

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

**C. Prepare for the Operational Test**

SUBTASK 34-51-00-860-001

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

SUBTASK 34-51-00-710-001

- (2) Do these steps to prepare for the operational test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the IRS transfer switch on the instrument switching module to the NORMAL position.
  - (c) Set the mode selector on the captain's and the first officer's (F/O's) EFIS control panel to the VOR position.
  - (d) Set the captain's and F/O's EFIS control panel ADF/VOR 1 and ADF/VOR 2 switches to VOR 1 and VOR 2 position.

**| AKS 001-024**

- (e) Push the CTR button on the captain's and F/O's EFIS control panels until full VOR display is present on the captain's and F/O's navigation display (ND).

**| AKS ALL**

- (f) Set the SOURCE switch on the instrument switching module to the AUTO position.
- (g) Set the mode select switches on the IRS to the ATT position.
- (h) Push H and put 000 (heading 0°) on the IRS inertial system display unit (ISDU).
- (i) Push the ENT key on the IRS ISDU.

NOTE: A wait of 30 seconds can be necessary for a valid heading.

- (j) Turn the course select controls on the DFCS mode control panel until the course windows show 000 degrees.



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**AKS 001-024**

- 1) Make sure the heading flag on the captain's and first officer's ND does not show.

**AKS ALL**

**D. VOR Receiver Self Test**

**AKS 014, 019, 026-999**

SUBTASK 34-51-00-860-055

- (1) Set a VOR frequency of 108.00 MHz on the captain's navigation control panels by:
  - (a) Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.00" using the NCP keypad.
  - (c) Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-51-00-860-063

- (2) Set a frequency of 108.00 MHz on the captain's navigation control panel.

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY display window. Then push the TFR button. The frequency will show in the ACTIVE display window.

**AKS ALL**

SUBTASK 34-51-00-710-002

- (3) Push and release the TEST button on the captain's navigation control panel.
  - (a) Make sure that these indications agree with the data in (Table 501):

**Table 501/34-51-00-993-810**

TIME (Approx.)	DISPLAY VOR FLAG IN VIEW	DISPLAY FROM INDICATOR IN VIEW	DISPLAY DEVIATION BAR IN VIEW
3 ±1 second	YES	NO	NO
After 3 seconds	NO	YES	Centered
After 23 seconds	NO	NO	NO

**AKS 001-024**

- 1) The deviation bar is in view, the TO/FROM indication, and the VOR flag on the captain's NDs
- 2) The No. 1 VOR narrow bearing pointers on the captain's and the first officer's NDs

**AKS ALL**

SUBTASK 34-51-00-860-003

- (4) Set the VHF NAV switch on the instrument switching module to the BOTH ON 1 position.

SUBTASK 34-51-00-710-003

- (5) Push and release the TEST button on the captain's navigation control panel.
  - (a) Make sure that these indications agree with the data in (Table 501):



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**AKS 001-024**

- 1) The deviation bar is in view, the TO/FROM indication, and the VOR flag on the captain's and first officer's NDs
- 2) The No. 1 VOR narrow bearing pointers on the captain's and first officer's NDs

**AKS ALL**

SUBTASK 34-51-00-860-004

- (6) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

**AKS 014, 019, 026-999**

SUBTASK 34-51-00-860-056

- (7) Set a VOR frequency of 108.00 MHz on the first officer's navigation control panels by:
  - (a) Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.00" using the NCP keypad.
  - (c) Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.

**AKS ALL**

SUBTASK 34-51-00-860-064

- (8) Set a frequency of 108.00 MHz on the first officer's navigation control panel.

SUBTASK 34-51-00-710-004

- (9) Push and release the TEST button on the first officer's navigation control panel.
  - (a) Make sure that these indications agree with the data in (Table 501):

**AKS 001-024**

- 1) The deviation bar is in view, the TO/FROM indication, and the VOR flag on the first officer's ND
- 2) The No. 2 VOR wide bearing pointers on the captain's and the first officer's NDs

**AKS ALL**

SUBTASK 34-51-00-860-006

- (10) Set the VHF NAV switch on the instrument switching module to the BOTH ON 2 position.

SUBTASK 34-51-00-710-005

- (11) Push and release the TEST button on the first officer's navigation control panel.
  - (a) Make sure that these indications agree with the data in (Table 501):

**AKS 001-024**

- 1) The deviation bar is in view, the TO/FROM indication, and the VOR flag on the captain's and first officer's ND
- 2) The No. 2 VOR wide bearing pointers on the captain's and the first officer's NDs

**AKS ALL**

SUBTASK 34-51-00-860-007

- (12) Set the VHF NAV switch on the instrument switching module to the NORMAL position.



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**E. Display Source Annunciator Test**

SUBTASK 34-51-00-710-006

- (1) Set the VHF NAV switch and the navigation control panel (NCP) to each position that shows in (Table 502).

NOTE: APP must be selected on both the Captain's and F/O's EFIS control panels for the 108.10 MHz ILS annunciations.

**Table 502/34-51-00-993-808**

CAPT & F/O NCP FREQUENCY	VHF NAV SWITCH	CAPT DISPLAY ANNUNCIATOR	F/O DISPLAY ANNUNCIATOR	EFIS CTRL PANEL MODE SELECTOR
108.00 MHz	NORMAL	VOR 1	VOR 2	VOR
108.00 MHz	BOTH ON 1	VOR 1	VOR 1	VOR
108.00 MHz	BOTH ON 2	VOR 2	VOR 2	VOR
108.10 MHz	NORMAL	ILS 1	ILS 2	APP
108.10 MHz	BOTH ON 1	ILS 1	ILS 1	APP
108.10 MHz	BOTH ON 2	ILS 2	ILS 2	APP

**AKS 001-024**

- (a) Make sure the ND source annunciators agree with the data in (Table 502).

**AKS ALL**

SUBTASK 34-51-00-860-008

- (2) Set a frequency of 108.00 MHz on the captain's navigation control panel.

SUBTASK 34-51-00-860-009

- (3) Set a frequency of 108.00 MHz on the first officer's navigation control panel.

SUBTASK 34-51-00-860-054

- (4) Set the mode selector on the captain's and first officer's EFIS control panels to the VOR position.

SUBTASK 34-51-00-860-010

- (5) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

SUBTASK 34-51-00-860-011

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

SUBTASK 34-51-00-710-007

- (7) Make sure the indications that follow occur:

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**AKS 001-024**

- (a) The No. 1 bearing flag is in view on the captain's ND

**AKS ALL**

SUBTASK 34-51-00-860-012

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	12	C01375	RADIO NAVIGATION VOR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-51-00-710-008

- (9) Make sure the indications that follow occur:

**AKS 001-024**

- (a) The No. 2 bearing flag is in view on the first officer's ND

**AKS ALL**

SUBTASK 34-51-00-860-013

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	12	C01375	RADIO NAVIGATION VOR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-51-00-860-014

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

———— END OF TASK ————

**TASK 34-51-00-730-801**

**3. VOR System - System Test**

**A. References**

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

**B. Tools/Equipment**

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

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<b>Reference</b>	<b>Description</b>
COM-1913	Test Set - NAV/COMM Ramp Part #: IFR 4000 Supplier: 51190 Part #: T-30D Supplier: 92606 Part #: T-36C Supplier: 92606 Opt Part #: 402AP-110 Supplier: 51190 Opt Part #: 972Q-4 Supplier: 4V792 Opt Part #: NAV-402AP-2 Supplier: 51190 Opt Part #: T-30C Supplier: 92606

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Prepare for the System Test**

SUBTASK 34-51-00-860-015

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

SUBTASK 34-51-00-710-009

- (2) Do these steps to prepare for the system test:
  - (a) Set the VHF NAV switch on the instrument switching module to the NORMAL position.
  - (b) Set the IRS switch on the instrument switching module to the NORMAL position.
  - (c) Set the mode selector on the captain's and the first officer's EFIS control panel to the VOR position.
  - (d) Set the SOURCE switch on the instrument switching module to the AUTO position.
  - (e) Set the mode select switches on the mode select unit (MSU) to the ATT position.
  - (f) Push H on the inertial system display unit (ISDU).
  - (g) Push 000 on the ISDU for a heading of 0°.
  - (h) Push the ENT key on the ISDU.  
NOTE: A wait of 30 seconds can be necessary for a valid heading.
  - (i) Turn the course select controls on the DFCS mode control panel until the course windows show 000 degrees.

**AKS 001-024**

- 1) Make sure the heading flag on the two NDs does not show.

**AKS ALL**

**E. VOR System Test**

SUBTASK 34-51-00-710-010

- (1) Do this task: VOR System - Operational Test, TASK 34-51-00-710-801.

**AKS 014, 019, 026-999**

SUBTASK 34-51-00-860-057

- (2) Set a VOR frequency of 108.00 MHz on the captain's navigation control panels by:
  - (a) Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.00" using the NCP keypad.



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**AKS 014, 019, 026-999 (Continued)**

- (c) Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.

**AKS 001-013, 015-018, 020-025**

SUBTASK 34-51-00-860-065

- (3) Set a frequency of 108.00 MHz on the captain's navigation control panel.

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY display window. Then push the TFR button. The frequency will show in the ACTIVE display window.

**AKS ALL**

SUBTASK 34-51-00-730-001

- (4) Set up the NAV/COMM ramp test set, COM-1913, to supply a 0° omni radial at a frequency of 108.00 MHz.

NOTE: Omni radial is a signal that is along a line in the magnetic direction (from the station) shown by the number of the radial. For example, 0° omni radial is north of the station.

**AKS 001-024**

- (a) Make sure the deviation bar shows on the captain's ND.  
(b) Make sure the VOR flag does not show on the captain's ND.  
(c) Make sure the No. 1 bearing pointers on the captain's and the first officer's ND show 180 ±4°.

**AKS ALL**

SUBTASK 34-51-00-730-002

- (5) Turn the captain's course select control on the DFCS mode control panel until the deviation bar is in the center.

- (a) Make sure the course window on the DFCS mode control panel shows 000 ±002°.

NOTE: The deviation bar can also be in the center when the course counter shows 180°. Do not use this radial.

**AKS 001-024**

- (b) Make sure a FROM indication shows on the captain's ND.

SUBTASK 34-51-00-730-019

- (6) Turn the captain's course select control on the DFCS mode control panel until the deviation bar on the captain's ND is on the second left dot.

- (a) Make sure the course window on the DFCS mode control panel shows 350 ±004°.

SUBTASK 34-51-00-730-020

- (7) Turn the captain's course select control on the DFCS mode control panel until the deviation bar on the captain's ND is on the second right dot.

- (a) Make sure the course window on the DFCS mode control panel shows 010 ±004°.

**AKS ALL**

SUBTASK 34-51-00-860-017

- (8) Turn the captain's course select control on the DFCS mode control panel until the course window shows 000.

EFFECTIVITY  
AKS ALL

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SUBTASK 34-51-00-730-005

- (9) Set the VOR bearing selector on the NAV/COMM ramp test set, COM-1913, to the omni radials shown in (Table 503).
- (a) Make sure that these indications agree with the data in (Table 503):

**Table 503/34-51-00-993-809**

BEARING SELECTOR SETTING (OMNI RADIAL)	BEARING POINTER INDICATION	TO - FROM FLAG INDICATION	DEVIATION BAR INDICATION
000°	180 ± 4°	FROM	Centered
315°	135 ± 4°	FROM	Moved full scale to the right
270°	90 ± 4°	----	Moved full scale to the right
225°	45 ± 4°	TO	Moved full scale to the right
180°	000 ± 4°	TO	Centered
135°	315 ± 4°	TO	Moved full scale to the left
90°	270 ± 4°	----	Moved full scale to the left
45°	225 ± 4°	FROM	Moved full scale to the left
000°	180 ± 4°	FROM	Centered
45°	225 ± 4°	FROM	Moved full scale to the left
90°	270 ± 4°	----	Moved full scale to the left
135°	315 ± 4°	TO	Moved full scale to the left
180°	000 ± 4°	TO	Centered
225°	45 ± 4°	TO	Moved full scale to the right
270°	90 ± 4°	----	Moved full scale to the right
315°	135 ± 4°	FROM	Moved full scale to the right
000°	180 ± 4°	FROM	Centered

**AKS 001-024**

- 1) The No. 1 bearing pointers on the captain's and the first officer's ND
- 2) The TO-FROM indication and the deviation bar in the captain's ND.

**AKS 014, 019, 026-999**

SUBTASK 34-51-00-860-058

- (10) Set a VOR frequency of 108.00 MHz on the first officer's navigation control panels by:
- (a) Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.00" using the NCP keypad.
  - (c) Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.
- 1) Make sure the No. 2 bearing pointers on the captain's and the first officer's ND show 180 ±4°.

EFFECTIVITY  
AKS ALL

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**AKS 001-013, 015-018, 020-025**

SUBTASK 34-51-00-860-066

- (11) Make sure the No. 2 bearing pointers on the captain's and the first officer's ND show  $180 \pm 4^\circ$ .

**AKS 001-024**

SUBTASK 34-51-00-730-021

- (12) Turn the first officer's course select control on the DFCS mode control panel until the deviation bar on the first officer's ND is in the center.

- (a) Make sure the course window on the DFCS mode control panel shows  $000 \pm 002^\circ$ .

NOTE: The deviation bar can also be in the center when the course counter shows  $180^\circ$ .  
Do not use this radial.

- (b) Make sure a FROM indication shows on the first officer's ND.

SUBTASK 34-51-00-730-022

- (13) Turn the first officer's course select control on the DFCS mode control panel until the deviation bar on the first officer's ND is on the second left dot.

- (a) Make sure the course window on the DFCS mode control panel shows  $350 \pm 004^\circ$ .

SUBTASK 34-51-00-730-023

- (14) Turn the first officer's course select control on the DFCS mode control panel until the deviation bar on the first officer's ND is on the second right dot.

- (a) Make sure the course window on the DFCS mode control panel shows  $010 \pm 004^\circ$ .

**AKS ALL**

SUBTASK 34-51-00-860-018

- (15) Turn the first officer's course select control on the DFCS mode control panel until the course window shows 000.

SUBTASK 34-51-00-730-010

- (16) Set the VOR bearing selector on the NAV/COMM ramp test set, COM-1913, to the omni radials shown in (Table 503).

- (a) Make sure that these indications agree with the data in (Table 503):

**AKS 001-024**

- 1) The No. 2 bearing pointers on the captain's and the first officer's ND
- 2) The TO-FROM indication and the deviation bar in the first officer's ND.

**AKS ALL**

SUBTASK 34-51-00-860-019

- (17) Set the VHF NAV switch on the instrument switching module to the BOTH ON 1 position.

**AKS 014, 019, 026-999**

SUBTASK 34-51-00-860-059

- (18) Set a ILS frequency of 108.10 MHz on the first officer's navigation control panels by:

- (a) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
- (b) Pushing the number "108.10" using the NCP keypad.
- (c) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.

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**AKS ALL**

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**AKS 001-013, 015-018, 020-025**

SUBTASK 34-51-00-860-067

- (19) Set a frequency of 108.10 MHz on the first officer's navigation control panel.

**AKS ALL**

SUBTASK 34-51-00-860-021

- (20) Turn the captain's course selector control on the DFCS mode control panel until the course window shows 000.

SUBTASK 34-51-00-730-011

- (21) Set the VOR bearing selector on the NAV/COMM ramp test set, COM-1913, to a 135° omni radial.

**AKS 001-024**

- (a) Make sure the No. 1 bearing pointers on the captain's and the first officer's ND show 315 ±4°.
- (b) Make sure the deviation bars on the two NDs are full scale in the left direction.
- (c) Make sure a TO indication shows on the two NDs.

**AKS ALL**

SUBTASK 34-51-00-860-022

- (22) Set the VHF NAV switch on the instrument switching module to the BOTH ON 2 position.

SUBTASK 34-51-00-860-023

- (23) Set a frequency of 108.00 MHz on the first officer's navigation control panel.

SUBTASK 34-51-00-860-024

- (24) Set a frequency of 108.10 MHz on the captain's navigation control panel.

SUBTASK 34-51-00-860-025

- (25) Turn the first officer's course selector control on the DFCS mode control panel until the course window shows 000.

SUBTASK 34-51-00-730-012

- (26) Set the VOR bearing selector on the NAV/COMM ramp test set, COM-1913, to a 315° omni radial.

**AKS 001-024**

- (a) Make sure the No. 2 bearing pointers on the captain's and the first officer's ND show 135 ±4°.
- (b) Make sure the deviation bars on the two NDs are full scale in the right direction.
- (c) Make sure a FROM indication shows on the two NDs.

**AKS ALL**

SUBTASK 34-51-00-860-026

- (27) Set a frequency of 108.00 MHz on the captain's navigation control panel.

**F. System Frequency Control and Aural Outputs Test**

NOTE: No adjustment of the receiver gain squelch is necessary. The tone should be detected regardless of the noise level.

**AKS 014, 019, 026-999**

SUBTASK 34-51-00-860-060

- (1) Set a ILS frequency of 108.10 MHz on the first officer's navigation control panels by:

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AKS ALL

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**AKS 014, 019, 026-999 (Continued)**

- (a) Pushing the MODE key (V or reverse V) until "ILS" is displayed in the STBY (lower) window of the NCP.
- (b) Pushing the number "108.10" using the NCP keypad.
- (c) Pushing the ACT/STBY transfer key until "ILS 108.10" is displayed in the ACT (upper) window on the NCP.

**| AKS 001-013, 015-018, 020-025**

SUBTASK 34-51-00-860-068

- (2) Set a ILS frequency of 108.10 MHz on the first officer's navigation control panels by:

**AKS ALL**

SUBTASK 34-51-00-860-028

- (3) Use the switches on the NAV/COMM ramp test set, COM-1913, to supply a signal of 1020 Hz.

SUBTASK 34-51-00-860-029

- (4) Push the receiver volume controls for NAV-2 on each audio selector panel to set the volume to off.

SUBTASK 34-51-00-860-030

- (5) Push the receiver volume controls for NAV-1 on each audio selector panel to set the volume to on.

SUBTASK 34-51-00-730-013

- (6) Turn the receiver volume controls clockwise for NAV-1 on each audio selector panel.
  - (a) Make sure you can hear a tone through the interphone system.
  - (b) Make sure you can hear a tone at each audio selector panel with a headset.
  - (c) Make sure you cannot hear the tone when you change the frequency on the NAV/COMM ramp test set, COM-1913, to a different frequency.

SUBTASK 34-51-00-860-031

- (7) Push the receiver volume controls for NAV-1 on each audio selector panel to set the volume to off.

SUBTASK 34-51-00-860-032

- (8) Set a frequency of 108.00 MHz on the first officer's navigation control panel.

SUBTASK 34-51-00-860-033

- (9) Set a frequency of 108.10 MHz on the captain's navigation control panel.

SUBTASK 34-51-00-860-034

- (10) Push the receiver volume controls for NAV-2 on each audio selector panel to set the volume to on.

SUBTASK 34-51-00-730-014

- (11) Turn the receiver volume controls clockwise for NAV-2 on each audio selector panel.
  - (a) Make sure you can hear a tone through the interphone system.
  - (b) Make sure you can hear a tone at each audio selector panels with a headset.
  - (c) Make sure you cannot hear the tone when you change the frequency on the NAV/COMM ramp test set, COM-1913, to a different frequency.

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SUBTASK 34-51-00-860-035

- (12) Push the receiver volume controls for NAV-2 on each audio selector panel to set the volume to off.

SUBTASK 34-51-00-860-036

- (13) Set a frequency of 108.00 MHz on the captain's navigation control panel.

## G. Heading Input Test

### AKS 014, 019, 026-999

SUBTASK 34-51-00-860-061

- (1) Set a VOR frequency of 108.00 MHz on the captain's navigation control panels by:
  - (a) Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.00" using the NCP keypad.
  - (c) Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.

### AKS 001-013, 015-018, 020-025

SUBTASK 34-51-00-860-069

- (2) Make sure the captain's navigation control panel is set to a frequency of 108.00 MHz.

### AKS 014, 019, 026-999

SUBTASK 34-51-00-860-062

- (3) Set a VOR frequency of 108.00 MHz on the first officer's navigation control panels by:
  - (a) Pushing the MODE key (V or reverse V) until "VOR" is displayed in the STBY (lower) window of the NCP.
  - (b) Pushing the number "108.00" using the NCP keypad.
  - (c) Pushing the ACT/STBY transfer key until "VOR 108.00" is displayed in the ACT (upper) window on the NCP.

### AKS 001-013, 015-018, 020-025

SUBTASK 34-51-00-860-070

- (4) Make sure the first officer's navigation control panel is set to a frequency of 108.00 MHz.

### AKS ALL

SUBTASK 34-51-00-860-039

- (5) Use the NAV/COMM ramp test set, COM-1913, to supply a 315° omni radial at a frequency of 108.00 MHz.

### AKS 001-024

- (a) Make sure the deviation bar shows on the captain's ND.
- (b) Make sure the VOR flag does not show on the captain's ND.

### AKS ALL

SUBTASK 34-51-00-860-040

- (6) Make sure the VHF NAV switch on the instrument switching module is in the NORMAL position.

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AKS ALL

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SUBTASK 34-51-00-860-041

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	12	C01375	RADIO NAVIGATION VOR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-51-00-750-001

- (8) Set the Right IRS Mode Control Switch to OFF and wait at least 30 seconds.

SUBTASK 34-51-00-730-015

- (9) Put headings of 45°, 120°, 240°, and 000° into the ISDU for the air data inertial reference system (ADIRS).

**| AKS 001-024**

- (a) Make sure the compass card and the No. 1 bearing pointer in the captain's ND move counterclockwise at the same time.

**| AKS ALL**

- (b) Make sure the No. 1 bearing pointer follows the compass card's movement at a slower speed.  
(c) Make sure the compass card and the No 1 bearing pointer in the First Officer's ND do not move

SUBTASK 34-51-00-860-042

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	12	C01375	RADIO NAVIGATION VOR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-51-00-860-043

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

SUBTASK 34-51-00-750-002

- (12) Set the Right IRS Mode Control Switch to ATT.

SUBTASK 34-51-00-750-003

- (13) Set the Left IRS Mode Control Switch to OFF and wait at least 30 seconds.

SUBTASK 34-51-00-730-016

- (14) Put headings of 45°, 120°, 240°, and 000° into the ISDU for the air data inertial reference system (ADIRS).



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**AKS 001-024**

- (a) Make sure the compass card and the No. 2 bearing pointer in the first officer's ND move counterclockwise at the same time.
- (b) Make sure the No. 2 bearing pointer follows the compass card's movement at a slower speed.

**AKS ALL**

- (c) Make sure the compass card and the No. 2 bearing pointer on the captain's ND do not move.

SUBTASK 34-51-00-860-044

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

SUBTASK 34-51-00-860-045

- (16) Set the IRS switch on the instrument switching module to the BOTH ON Left position.

SUBTASK 34-51-00-860-046

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

SUBTASK 34-51-00-750-004

- (18) Set the Right IRS Mode Control Switch to OFF.

SUBTASK 34-51-00-750-005

- (19) Set the Left IRS Mode Control Switch to ATT and wait at least 30 seconds.

SUBTASK 34-51-00-730-017

- (20) Put headings of 45°, 120°, 240°, and 000° into the ISDU for the air data inertial reference system (ADIRS).

**AKS 001-024**

- (a) Make sure the compass card and the No. 2 bearing pointer on both NDs move counterclockwise at the same time.

**AKS ALL**

- (b) Make sure the No. 2 bearing pointer follows the compass card's movement at slower speed.

SUBTASK 34-51-00-860-047

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1



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**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

SUBTASK 34-51-00-860-048

- (22) Set the IRS switch on the instrument switching module to the BOTH ON RIGHT position.

SUBTASK 34-51-00-860-049

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	12	C01375	RADIO NAVIGATION VOR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-51-00-750-006

- (24) Select the Left IRS Mode Control Switch to OFF.

SUBTASK 34-51-00-750-007

- (25) Set the Right IRS Mode Control Switch to ATT and wait at least 30 seconds.

SUBTASK 34-51-00-730-018

- (26) Put headings of 45°, 120°, 240°, and 000° into the ISDU for the air data inertial reference system (ADIRS).

**AKS 001-024**

- (a) Make sure the compass card and the No. 1 bearing pointer in both NDs move counterclockwise at the same time.

**AKS ALL**

- (b) Make sure the No. 1 bearing pointer follows the compass card's movement at a slower speed.

SUBTASK 34-51-00-860-050

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	12	C01375	RADIO NAVIGATION VOR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-51-00-860-051

- (28) Set the IRS switch on the instrument switching module to the NORMAL position.

SUBTASK 34-51-00-860-052

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

———— END OF TASK ————



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VOR/MKR RECEIVER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the VOR/MKR receiver.
  - (2) An installation of the VOR/MKR receiver.
- B. The two VOR/MKR receivers are in the main equipment center. The No. 1 VOR/MKR receiver is on the E1 electronics equipment rack, shelf No. 2. The No. 2 VOR/MKR receiver is on E1 electronics equipment rack, shelf No. 4.

**TASK 34-51-01-000-801**

**2. VOR/MKR Receiver Removal**

(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Access Panels**

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

**D. Removal Procedure**

SUBTASK 34-51-01-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	12	C01375	RADIO NAVIGATION VOR 2

SUBTASK 34-51-01-010-001

- (2) To get access to the VOR/MKR receiver, open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------



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SUBTASK 34-51-01-020-001

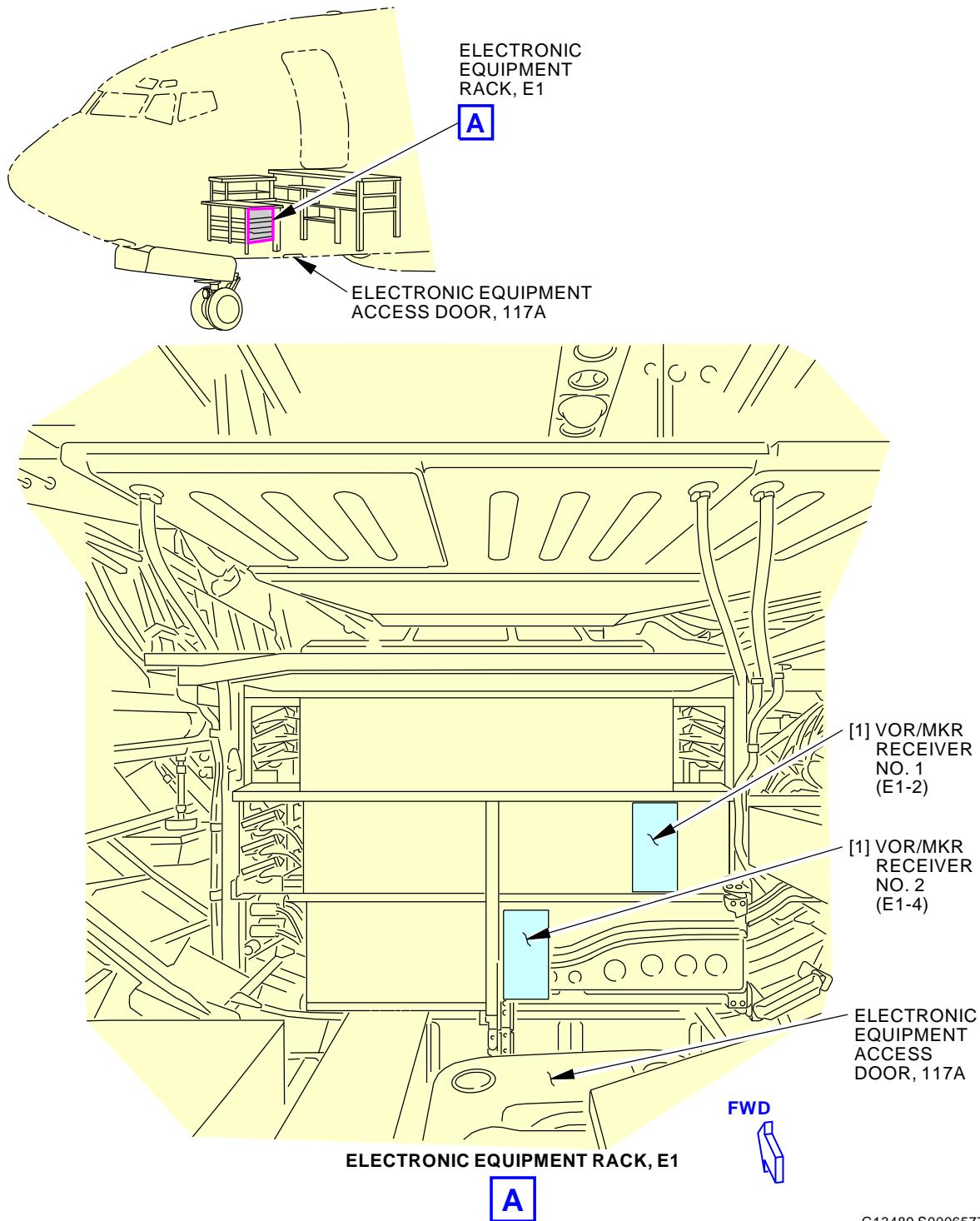
**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VOR/MKR RECEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VOR/MKR RECEIVER.

- (3) To remove the No. 1 or No. 2 VOR/MKR receiver [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-51-01**



G13489 S0006577018\_V2

**VOR/MKR Receiver Installation**  
**Figure 401/34-51-01-990-801**

 EFFECTIVITY  
 AKS ALL

**34-51-01**



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TASK 34-51-01-400-801

3. VOR/MKR Receiver Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-32-00-710-801	Marker Beacon System - Operational Test (P/B 501)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Receiver	34-51-01-02-005	AKS ALL

C. Location Zones

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

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

E. Installation Procedure

SUBTASK 34-51-01-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	12	C01375	RADIO NAVIGATION VOR 2

SUBTASK 34-51-01-420-001

**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE VOR/MKR RECEIVER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE VOR/MKR RECEIVER.

- (2) To install the VOR/MKR receiver [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 34-51-01-860-003

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1



**34-51-01**



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**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	12	C01375	RADIO NAVIGATION VOR 2

SUBTASK 34-51-01-410-001

- (4) Close this access panel:

<u>Number</u>	<u>Name/Location</u>
---------------	----------------------

117A	Electronic Equipment Access Door
------	----------------------------------

**F. Installation Test**

SUBTASK 34-51-01-860-004

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

SUBTASK 34-51-01-710-001

- (2) Tune the captain's and first officer's navigation control panels to a local VOR station.  
(3) On the P5 panel Instrument switch module, set the VHF NAV switch to "NORMAL" position.  
(4) Push the receiver volume control clockwise for NAV1 and/or NAV 2 on the Audio Control Panel.

(a) Make sure you can hear the station identification code over the flight interphone system.

SUBTASK 34-51-01-710-002

- (5) Do this task: Marker Beacon System - Operational Test, TASK 34-32-00-710-801.

SUBTASK 34-51-01-860-005

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

———— END OF TASK ————



**34-51-01**



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VOR/LOC ANTENNA - REMOVAL/INSTALLATION

1. **General**

- A. This procedure has these tasks:
  - (1) A removal of the VOR/LOC antenna
  - (2) An installation of the VOR/LOC antenna.
- B. The VOR/LOC antenna (M41) is installed at the top of the vertical stabilizer (fin).

**TASK 34-51-02-000-801**

2. **VOR/LOC Antenna Removal**

(Figure 401)

A. **Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right
326	Vertical Fin - Fin Tip

B. **Removal Procedure**

SUBTASK 34-51-02-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	12	C01375	RADIO NAVIGATION VOR 2

SUBTASK 34-51-02-020-001

- (2) Remove the VOR/LOC antenna [2]:
  - (a) Remove the screws [6] that attach the leading edge [1] to the VOR/LOC antenna [2] and the vertical stabilizer.
  - (b) Remove the leading edge [1] of the fin tip from the VOR/LOC antenna [2].
  - (c) Disconnect the electrical connectors [7].
  - (d) Put protective covers on the electrical connectors [7].
  - (e) Remove the screws [5] that attach the VOR/LOC antenna [2] to the vertical stabilizer.  
*NOTE:* Do not remove the screws that attach the trailing edge to the VOR/LOC antenna [2]. The trailing edge can be removed with the VOR/LOC antenna [2].
  - (f) Remove the VOR/LOC antenna [2] and the attached trailing edge from the vertical stabilizer.

SUBTASK 34-51-02-020-002

- (3) Remove the static discharger [3].
  - (a) Remove the screws [4] from the static discharger [3].

EFFECTIVITY  
AKS ALL

**34-51-02**



**737-600/700/800/900**  
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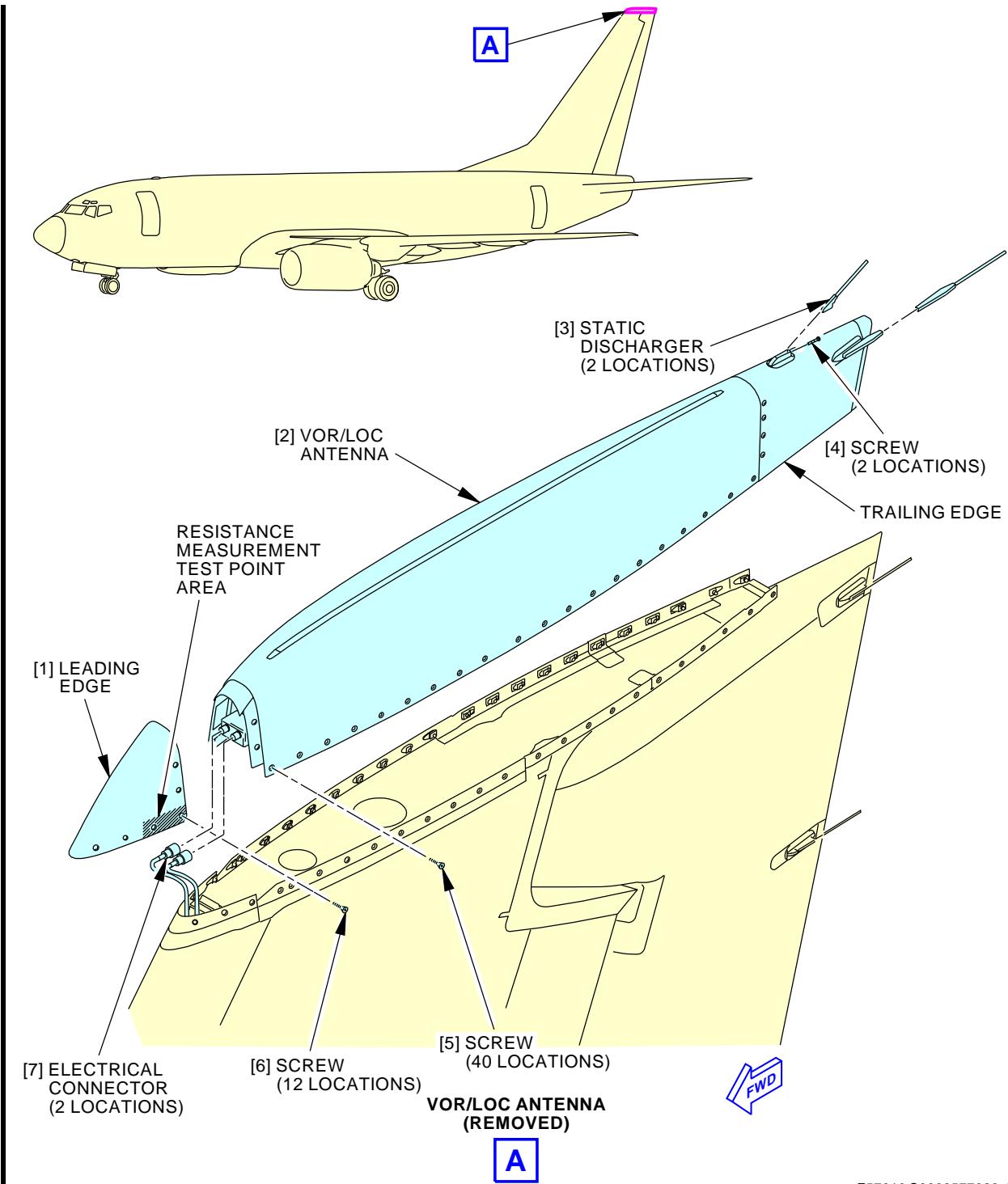
- (b) Remove the static discharger [3] from the trailing edge.

NOTE: Keep the static discharger [3] for installation on new VOR/LOC antenna [2] assembly.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-51-02**



F57010 S0006577023\_V2

**VOR/LOC Antenna Installation  
Figure 401/34-51-02-990-801**

 EFFECTIVITY  
AKS ALL

**34-51-02**

D633A101-AKS



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**TASK 34-51-02-400-801**

**3. VOR/LOC Antenna Installation**

(Figure 401)

**A. General**

- (1) The installation task has an installation test.
- (2) The installation test makes sure that the VOR/LOC antenna operates correctly.

**B. References**

<b>Reference</b>	<b>Title</b>
23-61-00-400-801	Static Discharger Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-31-00-710-801	Instrument Landing System - Operational Test (P/B 501)
34-51-00-710-801	VOR System - Operational Test (P/B 501)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-21-91-620-802	Application of Corrosion Inhibiting Compound (P/B 701)

**C. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
C00308	Compound - Corrosion Preventive, Petrolatum Hot Application	MIL-C-11796

**D. Expendables/Parts**

<b>AMM Item</b>	<b>Description</b>	<b>AIPC Reference</b>	<b>AIPC Effectivity</b>
2	VOR/LOC antenna	34-51-02-01-005	AKS ALL

**E. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right
326	Vertical Fin - Fin Tip

**F. Installation Procedure**

SUBTASK 34-51-02-860-002

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	1	C01374	RADIO NAVIGATION VOR/MKR BCN 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	12	C01375	RADIO NAVIGATION VOR 2

SUBTASK 34-51-02-100-001

- (2) Clean the mating surfaces of the VOR/LOC antenna [2] and the airplane structure. To clean the surfaces, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.

SUBTASK 34-51-02-420-001

- (3) If the trailing edge is not installed, attach the trailing edge to the VOR/LOC antenna [2].



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SUBTASK 34-51-02-420-002

- (4) Install the static discharger [3]. Do this task: Static Discharger Installation, TASK 23-61-00-400-801.

SUBTASK 34-51-02-420-003

- (5) Install the VOR/LOC antenna [2]:

- (a) Align the VOR/LOC antenna [2] to the screw holes that hold the to the vertical stabilizer.
- (b) Remove the protective covers from the electrical connectors [7].
- (c) Examine the electrical connectors [7] for bent or broken pins, dirt, and damage.
- (d) Connect the electrical connectors [7].
- (e) Align the leading edge [1] with the screw holes on the top of the vertical stabilizer.
- (f) Apply corrosion preventive compound, C00308 to the screw [6] threads. To apply it, do this task: Application of Corrosion Inhibiting Compound, TASK 51-21-91-620-802.
- (g) Apply corrosion preventive compound, C00308 to the screw [5] threads. To apply it, do this task: Application of Corrosion Inhibiting Compound, TASK 51-21-91-620-802.
- (h) Install the screws [6] that attach the leading edge [1] to the VOR/LOC antenna [2] and the vertical stabilizer.
- (i) Install the screws [5] that attach the VOR/LOC antenna [2] to the vertical stabilizer.

SUBTASK 34-51-02-760-001

- (6) Do a check of the resistance between the VOR/LOC antenna [2] and the airplane skin.

NOTE: Refer to (Figure 401) for resistance test point locations.

- (a) Make sure the resistance is not more than 0.001 ohm.

## G. Installation Test

SUBTASK 34-51-02-860-004

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

SUBTASK 34-51-02-710-001

- (2) Do this task: Instrument Landing System - Operational Test, TASK 34-31-00-710-801.

SUBTASK 34-51-02-710-002

- (3) Do this task: VOR System - Operational Test, TASK 34-51-00-710-801.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-51-02**



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AIR TRAFFIC CONTROL (ATC) SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Air Traffic Control (ATC) System Deactivation.
  - (2) Air Traffic Control (ATC) System Activation.

**TASK 34-53-00-040-801**

**2. Air Traffic Control System - Deactivation**

(Figure 34-53-02-990-801

Figure 201)

**A. General**

- (1) This procedure removes power to the ATC system.

**B. References**

<b>Reference</b>	<b>Title</b>
34-53-02-990-801	Figure: ATC Transponder Installation (P/B 401)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
100	Lower Half of Fuselage
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Access Panels**

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

**E. Procedure**

SUBTASK 34-53-00-860-066

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

**F. Air Traffic Control System - Tryout**

NOTE: This tryout is to make sure the ATC system is in a zero energy state.

SUBTASK 34-53-00-860-067

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	5	C00186	ATC 1

EFFECTIVITY	AKS ALL
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**34-53-00**



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**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-00-010-002

- (2) Open this access panel:

Number      Name/Location

117A            Electronic Equipment Access Door

SUBTASK 34-53-00-860-069

- (3) Make sure the lights on the front panel of both ATC transponders are not illuminated.

SUBTASK 34-53-00-860-070

- (4) Push and release the TEST switch on the front panel of both ATC Transponders and make sure none of the lights come on.

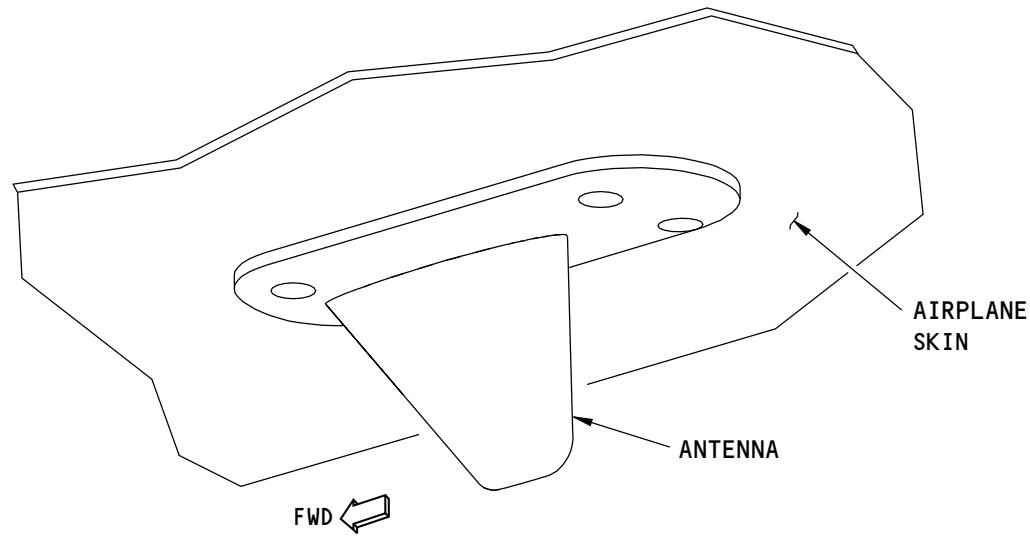
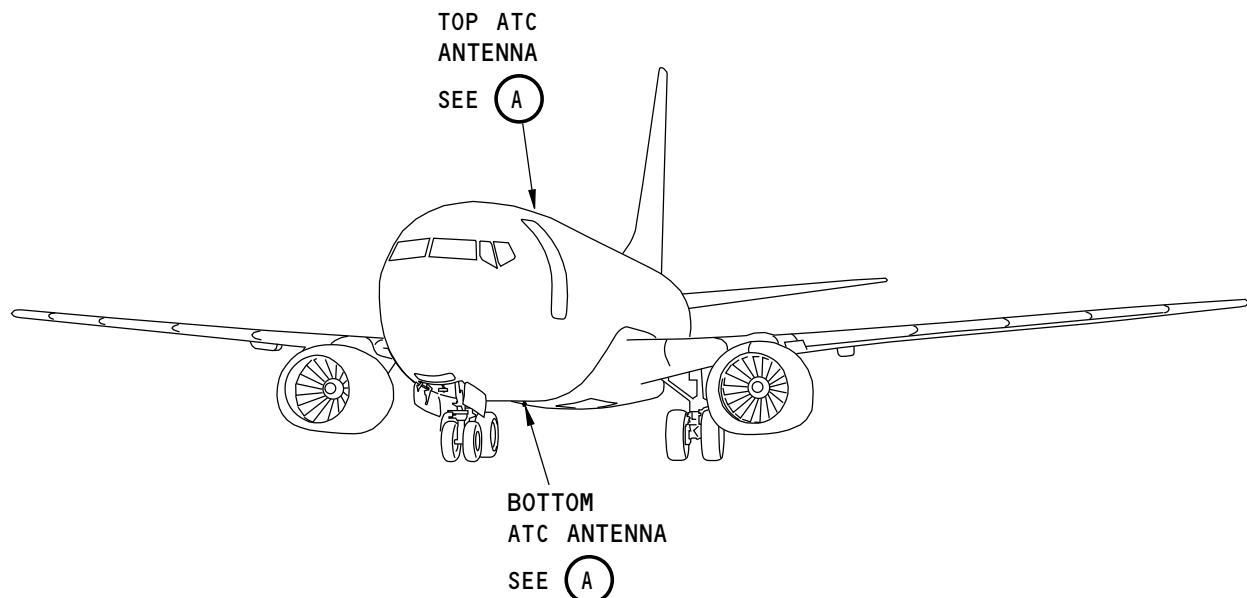
———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-53-00**



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BOTTOM ATC ANTENNA  
(TOP ATC ANTENNA IS EQUIVALENT)

A

2365264 S0000541297\_V1

ATC Location  
Figure 201/34-53-00-990-802

EFFECTIVITY  
AKS ALL

**34-53-00**

D633A101-AKS

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**TASK 34-53-00-440-801**

**3. Air Traffic Control System - Activation**

(Figure 34-53-02-990-801 ,Figure 201)

**A. General**

- (1) This Procedure adds electrical to the ATC System.

**B. References**

Reference	Title
34-53-02-990-801	Figure: ATC Transponder Installation (P/B 401)

**C. Location Zones**

Zone	Area
100	Lower Half of Fuselage
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Procedure**

SUBTASK 34-53-00-860-068

**WARNING:** KEEP ALL PERSONNEL AT A SAFE DISTANCE FROM THE ANTENNA. RF ENERGY CAN CAUSE INJURIES TO PERSONNEL.

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-00-410-002

- (2) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

— END OF TASK —



**34-53-00**



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AIR TRAFFIC CONTROL (ATC) SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks for the ATC system:
  - (1) Air Traffic Control System - Operational Test
  - (2) Air Traffic Control System - System Test (With the IFR ATC-601 Series Test Set)
  - (3) Air Traffic Control System - System Test (With the TIC 48 or T-49 Series Test Set)
  - (4) Air Traffic Control System - System Test (With the TR-220 Test Set)
  - (5) Air Traffic Control System - System Test (With the IFR 6000 Test Set)
- C. The operational test is a fast check of the ATC system that uses the ATC system BITE function. No test equipment is needed.
- D. The system test is a complete test of the ATC system. It does an operational test first then it uses test equipment to examine the ATC code reception, altitude reporting, transponder sensitivity, side lobe suppression, transmitter frequency and diversity.
- E. Because the ATC transponder responds to signals from the antenna with the strongest signal strength, it is necessary to put the test set antenna close to the airplanes antenna.

**TASK 34-53-00-710-801**

**2. Air Traffic Control System - Operational Test**

**A. General**

- (1) The operational test is a fast check of the ATC system. It uses only the system's BITE function. No special test or ground equipment is necessary.
- (2) The ATC transponder BITE circuitry does a self-test on all internal circuitry. This includes the injection of Mode S signals into the receiver unit to examine if the signals are processed properly. If the Mode S function fails, the red fail LED indicator comes on.

**B. References**

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

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Procedure**

SUBTASK 34-53-00-860-001

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

SUBTASK 34-53-00-860-002

- (2) On the ATC control panel do these steps:

EFFECTIVITY
AKS ALL

**34-53-00**



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- (a) Put the ATC transponder select switch to the No. 1 position.
- (b) Put the ATC mode select switch to the ALT ON position.

SUBTASK 34-53-00-010-001

- (3) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

### AKS 001-023

SUBTASK 34-53-00-860-003

- (4) Do the left ATC transponder (No. 1) BITE test:

- (a) Push and hold the TEST switch on the front panel of the left ATC transponder (No. 1) at the E1-2 shelf.

- 1) Make sure the sequence that follows occurs:

- a) All the LEDs come on for approximately three seconds

- b) All the LEDs go off

- c) After approximately two seconds, the green TPR LED comes on again.

NOTE: The red LEDs will stay off.

- (b) Release the TEST switch.

- 1) Make sure the green TPR LED goes off.

### AKS 024-999

SUBTASK 34-53-00-860-064

- (5) Do the left ATC transponder (No. 1) BITE test:

- (a) Push and release the TEST switch on the front panel of the left ATC transponder (No. 1) at the E1-2 shelf.

NOTE: The TEST switch must be depressed for 1.5 seconds.

- 1) Make sure the sequence that follows occurs:

- a) All the LEDs come on for approximately one second and then go off

- b) The pass lamp annunciates PASS.

- c) All the LEDs go off.

### AKS ALL

SUBTASK 34-53-00-860-004

- (6) Put the ATC transponder select switch to the No. 2 position.

### AKS 001-023

SUBTASK 34-53-00-860-005

- (7) Do the right ATC transponder (No. 2) BITE test:

- (a) Push and hold the TEST switch on the front panel of the right ATC transponder (No. 2) at the E1-5 shelf.

- 1) Make sure the sequence that follows occurs:

- a) All the LEDs come on for about three seconds

- b) All the LEDs go off

EFFECTIVITY  
AKS ALL

**34-53-00**



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AIRCRAFT MAINTENANCE MANUAL

AKS 001-023 (Continued)

- c) After approximately two seconds, the green TPR LED comes on again.

NOTE: The red LEDs will stay off.

- (b) Release the TEST switch.

- 1) Make sure the green TPR LED goes off.

AKS 024-999

SUBTASK 34-53-00-860-065

- (8) Do the left ATC transponder (No. 2) BITE test:

- (a) Push and release the TEST switch on the front panel of the right ATC transponder (No. 2) at the E1-5 shelf.

NOTE: The TEST switch must be depressed for 1.5 seconds.

- 1) Make sure the sequence that follows occurs:

- a) All the LEDs come on for approximately one second and then go off

- b) The pass lamp annunciates PASS.

- c) All the LEDs go off.

AKS ALL

SUBTASK 34-53-00-410-001

- (9) Close this access panel:

Number      Name/Location

117A            Electronic Equipment Access Door

SUBTASK 34-53-00-860-061

- (10) Put the ATC STBY/AUTO switch to the STBY position.

———— END OF TASK ————

**TASK 34-53-00-730-803**

**3. ATC System Test (With the ATC-601 Test Set)**

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) This system test is a more complete check of the ATC system. The system test first does the ATC - Operational Test, then it uses ground test equipment to examine the left and right ATC systems.
- (2) The ATC system can be tested with the ATC-601 Series ramp test set, COM-4113 by one of these two methods: Flat Antenna or Direct Connect.
- (3) The ATC-601 can test ATCRBS Mode A, Mode C and Mode S transponders. ATC-601 test sets with software version 3.0 or higher can also test Mode S Transponders with Enhanced Surveillance (ELS, EHS, ES and ADS-B) capabilities.

**AKS 001-023**

- (4) The ATC-601 can test the ADS-B functions to the EASA AMC 20-24 requirements for DO-260 compliant transponders. But it can not do tests of DO-260A compliant transponders to the EASA AMC 20-24 requirements.

**AKS ALL**

EFFECTIVITY

AKS ALL

**34-53-00**



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- (5) The ATC-601 Series ramp test set, COM-4113 uses thirty-nine (39) different tests to check the functionality of the ATC transponder. All thirty-nine (39) tests can be run automatically in the AUTO mode, or individually in the single test mode.
- NOTE: The AUTO Test is the preferred test.
- (6) In the AUTO mode, the test set will determine the correct set of tests, either Mode A/C or Mode S upon receiving the transponder RF signal, and will automatically run the tests.
- NOTE: A passed AUTO test on the ATC-601-series test set meets the requirements in FAR Part 43, Appendix F for all classes of ATCRBS transponders and for classes 1B, 2B, and 3B Mode S transponders. The ATC-601-series test set only verifies a reply frequency range of 1090 +/- 3 MHz.
- (7) The details of individual tests conducted during the AUTO TEST are stored in memory and may be reviewed by using the SELECT keys. The PASSED/FAILED indication is shown on top of the page.
- (8) If a test section fails or more data is necessary, use the Single Test Sequence. This lets the user do each test individually or see the individual test results.
- (9) To do a single test, use the SELECT keys to get to the desired test and push the RUN/STOP key. The test will continue until the RUN/STOP key is pushed again.
- (10) Results from the last test done, Auto Test or Single Test, show on the display.

**B. References**

Reference	Title
22-11-00	DIGITAL FLIGHT CONTROL SYSTEM
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
34-21-00	AIR DATA INERTIAL REFERENCE SYSTEM
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
34-31-00	INSTRUMENT LANDING SYSTEM
34-58-00	GLOBAL POSITIONING SYSTEM
34-58-00-710-802	Global Positioning System - Operational Test (P/B 501)
34-61-00	FLIGHT MANAGEMENT COMPUTER SYSTEM
WDM 34-53-11	Wiring Diagram Manual
WDM 34-53-21	Wiring Diagram Manual
WDM 34-53-31	Wiring Diagram Manual

**C. Tools/Equipment**

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

Reference	Description
COM-4113	Test Set - Ramp, ATC-601 Series Opt Part #: ATC-601 Supplier: 51190 Opt Part #: ATC-601-2 Supplier: 51190



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D. Location Zones

Zone	Area
100	Lower Half of Fuselage
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Prepare for the System Test

**AKS 001-023**

SUBTASK 34-53-00-580-001

- (1) If the ADS-B tests will be run as part of the ATC System test the airplane location must let the GPS antennas have a clear view of the GPS satellites.

**AKS ALL**

SUBTASK 34-53-00-710-008

- (2) Do this task: Air Traffic Control System - Operational Test, TASK 34-53-00-710-801.

SUBTASK 34-53-00-480-001

- (3) For the Direct Connect method, do these steps to connect the test set antenna cable to the ATC antenna switch:

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

- (b) Open this access panel:

**Number Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

- (c) For ATC antenna (coax) switch S942, disconnect connector D2703 (ATC Top Antenna) (WDM 34-53-31).
- (d) For ATC antenna (coax) switch S943, disconnect connector D2707 (ATC Bottom Antenna) (WDM 34-53-31).
- (e) Connect the ATC-601 Series ramp test set, COM-4113 antenna cable to ATC antenna (coax) switch S942 or ATC antenna (coax) switch S943.



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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-00-860-056

- (4) Make sure that these systems are operational:

- DIGITAL FLIGHT CONTROL SYSTEM, SUBJECT 22-11-00
- AIR DATA INERTIAL REFERENCE SYSTEM, SUBJECT 34-21-00
- INSTRUMENT LANDING SYSTEM, SUBJECT 34-31-00
- GLOBAL POSITIONING SYSTEM, SUBJECT 34-58-00
- FLIGHT MANAGEMENT COMPUTER SYSTEM, SUBJECT 34-61-00

SUBTASK 34-53-00-860-059

- (5) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

SUBTASK 34-53-00-860-027

- (6) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

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SUBTASK 34-53-00-860-053

- (7) Set a selected altitude.

- Set a desired altitude in the DFCS MCP Selected Altitude window.

SUBTASK 34-53-00-860-054

- (8) Select a Flight ID.

- Select the RTE mode key on the FMCS CDU.

- Make sure page 1 is shown.

NOTE: If needed, push the next page function key on the CDU until page 1 is shown.

- Enter the first 8 characters of the company name in the FLT NO field. This should be the name of the company that conducts the test.

- Select LSK 2R on the CDU.

**AKS ALL**

SUBTASK 34-53-00-860-028

- (9) Do these steps at the ATC control panel:

- Set the code switches to a desired ATC ID code.

NOTE: Use the ATC ID code 7776 or the Mode A code specified by the local ATC authority.

Do not use codes 7500, 7600-7677, 7700-7775 and 7777. These are emergency codes.

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- (b) Set the transponder select switch to the No. 1 position.
- (c) Set the Mode Select switch to the STBY position.
- (d) Set the ALT source switch to the No. 1 (or No. 2) air data source position.

SUBTASK 34-53-00-840-007

- (10) For the Direct Connect method, do these steps to prepare the ATC-601 Series ramp test set, COM-4113 to test the ATC transponder:

NOTE: The ramp test set operating instructions provides charts, distance limitations and required airplane antenna configurations for satisfactory ramp test set results. It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set and be familiar with its operation when determining the acceptability of transponder results.

NOTE: Refer to the ATC-601 Operating Manual for detailed information on setup, test screens, and interpreting results of the tests.

NOTE: It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set and be familiar with its operation when determining the acceptability of transponder results.

- (a) Connect the test set antenna cable to the ATC-601 Series ramp test set, COM-4113 RF I/O connector.

- (b) Make sure the antenna connector cover is installed.

NOTE: The connector cover provides the 50 ohm load required when connecting the test set antenna cable to the RF I/O connector.

- (c) Push the POWER button on the ATC-601 Series ramp test set, COM-4113.

NOTE: This is a source of interference for radio and L-band radar equipment operating on the airplane and located near the test set. Turn the test set off as soon as the test is completed or when you must perform other radio checks on the airplane.

- 1) The Start-Up screen will show.

- 2) Make sure the software version shown on the screen is 3.0 or higher if you are to do Enhanced Surveillance Tests.

- (d) Push the SELF TEST key on the test set.

- (e) Push the RUN/STOP key to start the self-test.

- 1) Make sure the test set display shows PASSED.

- (f) Push the SETUP key to enter the data in the SETUP #1 MENU. If the SETUP #1 MENU does not show, continue to push the SETUP key until the SETUP #1 MENU shows.

NOTE: The ATC-601 has four Setup Menus. Refer to the ATC-601 Operation Manual for detailed information on the Setup Menus.

- 1) Use the SLEW key to change the values.

- 2) Use the SELECT keys to change the items.

- 3) Use the SELECT keys to select the antenna under test.

- (g) In the RANGE field for the TOP and BOTTOM antennas, enter 0 feet.

- (h) In the HEIGHT field for the TOP antenna, enter 17 feet.

- (i) In the HEIGHT field for the BOTTOM antenna, enter 3 feet.

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- (j) Set the SELECTED field, enter the UUT antenna, TOP or BOTTOM.  
NOTE: To meet FAR requirements both the left and right systems must be tested on both upper and lower antennas.
- (k) Enter the cable loss listed on the cable in the LOSS field.  
NOTE: The cable loss can be found on the direct connect cable for the test set.
- (l) Press any key to exit SETUP #1 MENU

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- (m) Enter the required setup data for the ADS-B tests into the Setup #3 MENU.  
NOTE: Refer to the ATC-601 Operation Manual for detailed Setup information.
  - 1) Push the SETUP key until the SETUP #3 MENU shows.
  - 2) Select POS: Set to LOCAL.
  - 3) Select LLAT: Set the local latitude position.  
NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.
  - 4) Select LLONG: Set the local longitude position.  
NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.
  - 5) Select SPEC SERV: Set to DF17.

**AKS ALL**

SUBTASK 34-53-00-840-013

- (11) For the Flat Antenna method, do these steps to prepare the ATC-601 Series ramp test set, COM-4113 to test the ATC transponder:  
NOTE: The ramp test set operating instructions provides charts, distance limitations and required airplane antenna configurations for satisfactory ramp test set results. It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set and be familiar with its operation when determining the acceptability of transponder results.  
NOTE: Refer to the ATC-601 Operating Manual for detailed information on setup, test screens, and interpreting results of the tests.  
NOTE: It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set and be familiar with its operation when determining the acceptability of transponder results.

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**CAUTION:** KEEP THE REMOTE TEST SET ANTENNA MORE THAN 15 INCHES (0.40 METERS) FROM THE AIRCRAFT ANTENNA WITH THE TEST SET ON. IF THE REMOTE TEST SET ANTENNA IS TOO NEAR THE AIRCRAFT ANTENNA, YOU CAN CAUSE DAMAGE TO THE TEST SET.

- (a) Put the test set flat antenna approximately 30 feet from and in the line of sight of the ATC antenna.

**NOTE:** The flat antenna must be in the line of sight of the ATC antenna and positioned towards the antenna.

**NOTE:** For the DIVERSITY test, the test set must be at a distance of less than 50 feet (15.2 meters) from the airplane ATC antenna.

- (b) Insert the Antenna Shield over the ATC antenna not under test.

**NOTE:** Refer to the ATC-601 Operation Manual for the Antenna Shield mounting procedure.

**NOTE:** When testing the bottom antenna and shielding the top antenna is not possible or practical, move the Test Set so that it is not in the line of sight of the top ATC antenna.

- (c) Connect the test set antenna cable to the ATC-601 Series ramp test set, COM-4113 ANTENNA connector.

- (d) Push the POWER button on the ATC-601 Series ramp test set, COM-4113.

**NOTE:** This is a source of interference for radio and L-band radar equipment operating on the airplane and located near the test set. Turn the test set off as soon as the test is completed or when you must perform other radio checks on the airplane.

- 1) The Start-Up screen will show.

- 2) Make sure the software version shown on the screen is 3.0 or higher if you are to do Enhanced Surveillance Tests.

- (e) Push the SELF TEST key on the test set.

- (f) Push the RUN/STOP key to start the self test.

- 1) Make sure the test set display shows PASSED.

- (g) Push the SETUP key to enter the data in the SETUP #1 MENU. If the SETUP #1 MENU does not show, continue to push the SETUP key until the SETUP #1 MENU shows.

**NOTE:** The ATC-601 has four Setup Menus. Refer to the ATC-601 Operation Manual for detailed information on the Setup Menus.

- 1) Use the SLEW keys to change the values.

- 2) Use the SELECT keys to change the items.

- 3) Use the SLEW keys to select the necessary antenna.

- (h) In the RANGE field for the TOP and BOTTOM antennas, enter the distance between the tester antenna and the ATC antennas.

- (i) In the HEIGHT field for the TOP antenna, enter 17 feet.

- (j) In the HEIGHT field for the BOTTOM antenna, enter 3 feet.

- (k) In the SELECTED field, enter the UUT antenna, TOP or BOTTOM.

**NOTE:** To meet FAR requirements both the left and right systems must be tested on both upper and lower antennas.

- (l) Enter the gain listed on the ATC-601 Series ramp test set, COM-4113, antenna into the GAIN\_1030 and GAIN\_1090 field.

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- (m) Enter the cable loss listed on the cable in the LOSS field.
- (n) Press any key to exit SETUP #1 MENU

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- (o) Enter the required setup data for the ADS-B tests into the Setup #3 MENU.

NOTE: Refer to the ATC-601 Operation Manual for detailed Setup information.

- 1) Push the SETUP key until the SETUP #3 MENU shows.
- 2) Select POS: Set to LOCAL.
- 3) Select LLAT: Set the local latitude position.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.

- 4) Select LLONG: Set the local longitude position.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.

- 5) Select SPEC SERV: Set to DF17.

**AKS ALL**

SUBTASK 34-53-00-862-001

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-860-029

**WARNING:** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (13) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 34-53-00-860-062

- (14) Set the Mode Select switch to the ALT ON position.

**G. ATC System Test - Mode A/C and Mode S Transponders**

SUBTASK 34-53-00-730-031

- (1) You can select to do the transponder tests in either the Auto Test or Single Test sequence.

NOTE: The AUTO TEST sequence is the preferred method.



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SUBTASK 34-53-00-730-032

- (2) Do these steps to do the Auto Test sequence:

NOTE: The ATC-601 Series ramp test set, COM-4113 will automatically determine the capabilities of the transponder and select the tests to run. The results of tests done during the AUTO TEST are stored in memory. The SELECT keys are used to show the test results.

NOTE: Refer to the ATC-601 Operation Manual for detailed information.

- (a) Push the AUTO TEST key on the ATC-601 Series ramp test set, COM-4113.
- (b) Use the RUN/STOP key to start the Auto Test.

NOTE: During the Auto Test, TEST RUNNING, will show at the bottom of the display.

- 1) The Auto Test will run until it is finished. The results are stored in the tester memory for review.
- 2) Make sure that an AUTO TEST - PASSED indication shows at the top of the display after the Auto Test.

NOTE: For ATC transponders with enhanced surveillance capabilities, the ATC-601 ramp test set includes the Tests for Enhanced Surveillance in the AUTO TEST sequence. If the Flight ID is not directly entered into the ATC transponder or supplied by the FMC, a failure will occur.

NOTE: The Frequency, Power measurements and Diversity Isolation are also shown on the Auto Test screen.

NOTE: No reply to the UF16, UF20 or UF21 test is not a failure of the ATC system.

NOTE: "NOT AVAIL" is not a failure of the ATC system. Currently, Boeing aircraft are not using Uplink Extended Length Message (UELM) or Downlink Extended Length Message (DELM) and do not require Airborne Data Link Process (ADLP). An ADLP is necessary for the UELM or DELM function and results in a NOT AVAIL test result when not present.

- 3) Do a check of the FREQUENCY TEST (for ATCRBS transponders and 1B, 2B and 3B Mode S transponders).
  - a) Do a visual check of the ATC-601 Series ramp test set, COM-4113 display to make sure that the reply frequency of the transponder is  $1090 \pm 3$  MHz.
- 4) Do a check of the FREQUENCY TEST (for 1A, 2A and 3A and 4 Mode S transponders).
  - a) Do a visual check of the ATC-601 Series ramp test set, COM-4113 display to make sure that the reply frequency of the transponder is  $1090 \pm 1$  MHz.
- NOTE: Due to limitation of the ATC-601-series test set, the auto test function can cause a false PASS indication. The ATC-601-series test set only verifies a reply frequency range of  $1090 \pm 3$  MHz.

NOTE: This check also applies to classes 1B, 2B and 3B Mode S transponders which incorporate the optional reply frequency of  $1090 \pm 1$  MHz.
- 5) Make sure the AA (aircraft address) field shows the correct Mode S Address. Refer to WDM 34-53-11 or WDM 34-53-21 for the Mode S Address code.
- 6) If a test section fails or more data is necessary, do the Single Test procedure to view or to do individual tests.



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SUBTASK 34-53-00-730-030

- (3) If necessary, do these steps to do the Single Test sequence:
  - (a) Use the SELECT key to select each test on the ATC-601 Series ramp test set, COM-4113.
  - (b) Use the RUN/STOP key to start or stop the individual tests.  
NOTE: Each Single Test continues until stopped. Use the RUN/STOP key to stop the test.
  - (c) Make sure that the display shows PASSED for each test.
  - (d) Review the test results.  
NOTE: Refer to the ATC-601 Operation Manual for detailed information on test screens and interpreting results of the tests

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### H. ATC System Test - Tests for Enhanced Surveillance

SUBTASK 34-53-00-730-033

- (1) For airplanes with Enhanced Surveillance capabilities, the ATC-601 Series ramp test set, COM-4113 will include the Enhanced Surveillance tests in the AUTO TEST sequence. Use the SELECT keys to see the test results after the AUTO TEST is completed.  
NOTE: ATC-601 test sets with software version 3.0 or higher must be used to do the Enhanced Surveillance tests.
- (2) The SINGLE TEST sequence can also be used to do the Enhanced Surveillance tests. Use the SELECT keys to select the test to do and view the test results.  
Make sure that the display shows PASSED for each test.  
NOTE: Results from the last test run, Auto Test or Single Test, are shown on the display.  
NOTE: Refer to the ATC-601 Operation Manual for detailed setup and test information.
- (3) The tests that follow are for Elementary Surveillance:
  - Flight ID BDS 2,0
  - Data Link Capability Report BDS 1,0 Part 1
  - Data Link Capability Report BDS 1,0 Part 2
  - Common Usage GICB Cap Report BDS 1,7
  - ACAS Resolution Advisory BDS 3,0
- (4) The tests that follow are for Enhanced Surveillance:
  - Selected Vert Intent Report BDS 4,0 Part 1
  - Selected Vert Intent Report BDS 4,0 Part 2
  - Track & Turn Report BDS 5,0
  - Heading & Speed Report BDS 6,0

### I. ATC System Test - Tests for ADS-B

SUBTASK 34-53-00-730-034

- (1) For airplanes with ADS-B capabilities, the ATC-601 Series ramp test set, COM-4113 will include the ADS-B tests in the AUTO TEST sequence. Use the SELECT keys to see the test results after the AUTO TEST is completed.  
NOTE: Refer to the ATC-601 Operation Manual for detailed setup and test information.

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- (2) The SINGLE TEST sequence can also be used to do the ADS-B tests. Use the SELECT keys to select the test to do and view the test results.

NOTE: Results from the last test run, Auto Test or Single Test, are shown on the DISPLAY.

- (3) The tests that follow are for ADS-B:

- Ext Squitter Airborne Position BDS 0,5
- Ext Squitter Ident & Category BDS 0,8

- (4) Do a check of the ADS-B test results.

NOTE: The test results that follow satisfy the EASA AMC 20-24 requirements for ADS-B.

- (a) Do a check of the Airborne Position

- 1) Use the SELECT keys to select the Ext Squitter Airborne Position test.
- 2) Make sure that the LAT and LONG fields show the present position of the airplane.

- (b) Do a check of the Pressure Altitude.

- 1) Use the SELECT keys to select the Ext Squitter Airborne Position test.
- 2) Make sure that the BARO PR ALT field shows the airplane Barometric Pressure Altitude +/-125 ft.

- (c) Do a check of the Surveillance Status.

- 1) Notify local ATC facilities that transponder testing of the Surveillance Status will be performed.
- 2) Use the SELECT keys to select the Ext Squitter Airborne Position test.
- 3) On the ATC control panel, change the code switches to a different ATC ID code.
- 4) Make sure that the SURVL STAT field changes to TEMP ALERT.

NOTE: Current Boeing aircraft do not have an Airborne Data Link Processor (ADLP) installed and the transponders do not have an embedded ADLP. The SURVL STAT should show NO INFO.

- 5) Set code switches on the ATC control panel back to the original code.
- 6) Push the IDENT switch on the ATC Control Panel.
- 7) Make sure that the SURVL STAT field shows SPI.

NOTE: Current Boeing aircraft do not have an Airborne Data Link Processor (ADLP) installed and the transponders do not have an embedded ADLP. The SURVL STAT should show NO INFO.

- (d) Do a check of the Position Quality Indicator.

- 1) Use the SELECT keys to select the Ext Squitter Airborne Position test.
- 2) Make sure that the TYPE field does not show 0 or 18.

NOTE: If TYPE shows 0 the transponder does not receive position data from the IRS or MMR. A TYPE of 18 indicates the transponder receives position data but not from the MMR.

- (e) Do a check of the Aircraft Identity.

- 1) Use the SELECT keys to select the Ext Squitter Ident & Category test.
- 2) Make sure that the correct data is shown in the following fields:

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- a) The AA (aircraft address) field shows the Mode S Address. Refer to (WDM 34-53-11 and WDM 34-53-21) for the Mode S Address code.
- b) The FLIGHT ID field shows the same Flight ID entered into the FMC.

| AKS ALL

J. Repeat ATC System Tests

SUBTASK 34-53-00-730-025

- (1) Repeat the System Test for the other antenna.
  - (a) For the Direct Connect method.
    - 1) Change the ATC-601 Series ramp test set, COM-4113 antenna cable to connect to the other ATC antenna switch.
    - 2) Change the ATC-601 Series ramp test set, COM-4113 SELECTED field in the SETUP #1 MENU to test the other antenna.
  - (b) For the Flat Antenna method.
    - 1) Change the ATC-601 Series ramp test set, COM-4113 SELECTED field in the SETUP #1 MENU to test the other antenna.
- (2) Do the ATC System Tests again for the right or No. 2 system.

NOTE: To meet FAR requirements both the left and right systems must be tested on both upper and lower antennas.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

- (c) To test the right or No. 2 system, put the ATC select switch to the No. 2 position and use the No. 2 (or No. 1) air data source.

K. Put the Airplane Back to Its Usual Condition

SUBTASK 34-53-00-860-063

- (1) Set the mode selector on the ATC control panel to the STBY position.

SUBTASK 34-53-00-080-006

- (2) For the Flat Antenna method, remove the antenna shield cover, if installed.

SUBTASK 34-53-00-080-007

- (3) For the Direct Connect method, do these steps to disconnect the antenna cable from the ATC antenna switch:
  - (a) Open these circuit breakers and install safety tags:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

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**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

- (b) Disconnect and remove the ATC-601 Series ramp test set, COM-4113 antenna cable.
- (c) For ATC antenna (coax) switch S942, connect connector D2703 (ATC Top Antenna) (WDM 34-53-31).
- (d) For ATC antenna (coax) switch S943, connect connector D2707 (ATC Bottom Antenna) (WDM 34-53-31).
- (e) Remove the safety tags and close these circuit breakers:

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-00-840-008

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-902-001

- (5) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 34-53-00-700-002

- (6) Do this task: Air Traffic Control System - Operational Test, TASK 34-53-00-710-801

SUBTASK 34-53-00-860-060

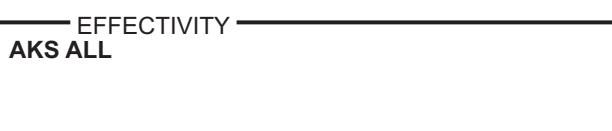
- (7) Set the ADIRU switches to the OFF position, if the ADIRUs are not necessary.

SUBTASK 34-53-00-840-014

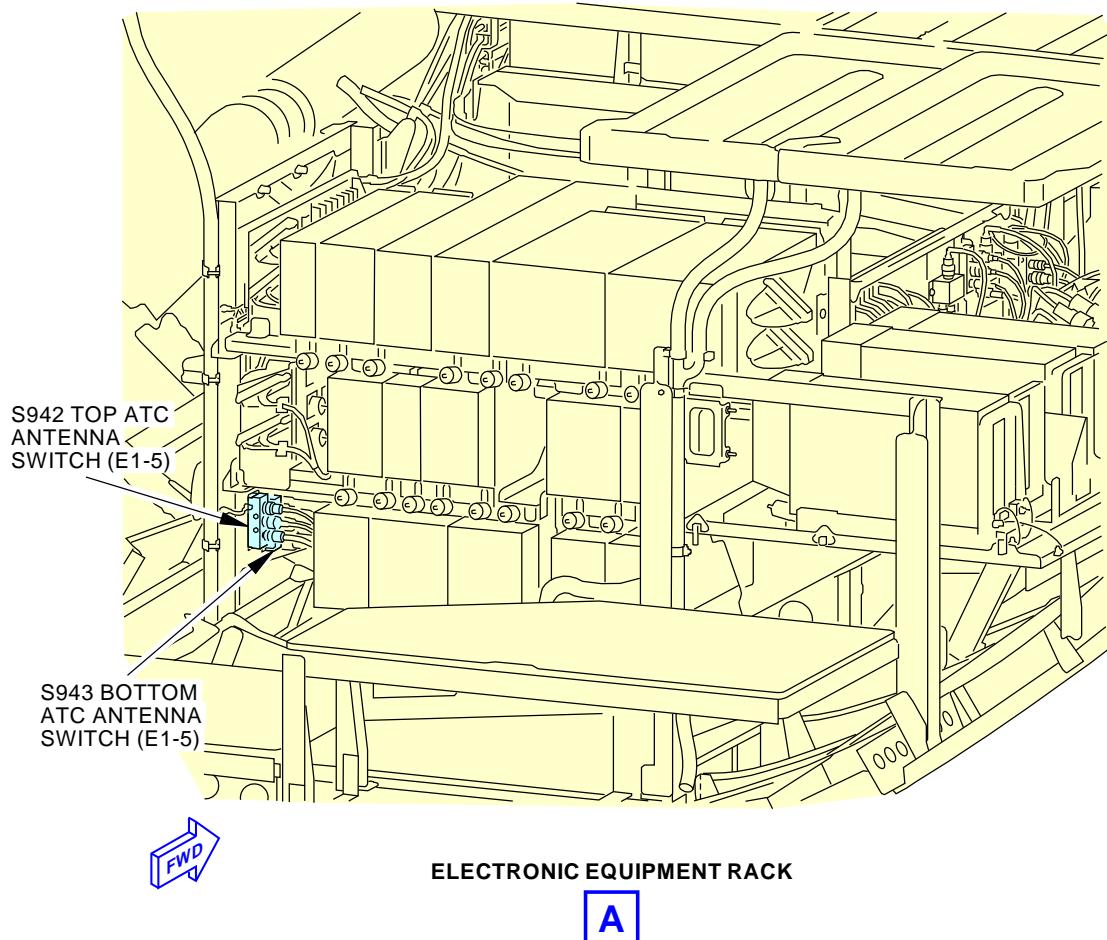
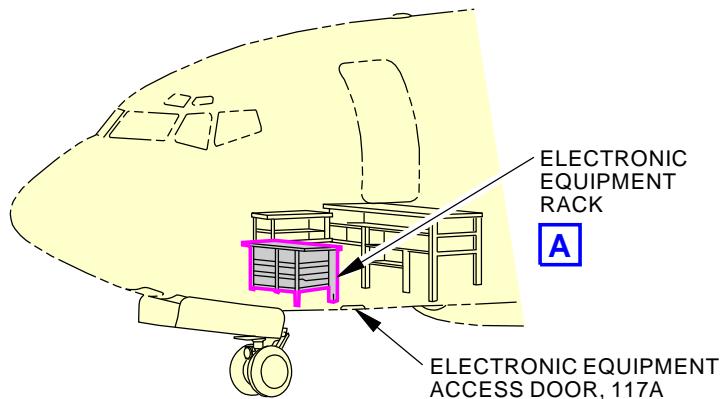
- (8) Close this access panel:

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

———— END OF TASK ————



**34-53-00**



2106556 S0000449842\_V3

**ATC Antenna Switch Location  
Figure 501/34-53-00-990-801**

 EFFECTIVITY  
**AKS ALL**
**34-53-00**

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**TASK 34-53-00-730-802**

**4. System Test - ATC System (With the TIC T-48 or T-49 Series Test Set)**

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) This system test is a full check of the ATC system. The system test first does the ATC - Operational Test and then uses the T-48/-49 ramp test set, COM-10730, to examine the left and right ATC systems.
- (2) The test set can do all of the tests automatically except the DIVERSITY CHECK, the MAX TRUE AIRSPEED TEST and the IDENT BUTTON CHECK. You must do these tests manually with the TEST button on the test set. If a test has failed, the automatic test sequence will stop and a failed message will show. At the end of the automatic test all data will show.
- (3) You can manually do each test individually. Push the TEST button to do each test individually. The test results will show after each test is done.
- (4) The test set accessory, the antenna coupler, TAP-115, TAP 118, TAP 119, TAP 125 or TAP 135 used with the applicable test set, is necessary to do a check of the output power, receiver, sensitivity and radio frequency. For the diversity check, the TAP 125 or TAP 135 is necessary.

**B. References**

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
WDM 34-53-11	Wiring Diagram Manual
WDM 34-53-21	Wiring Diagram Manual

**C. Tools/Equipment**

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

Reference	Description
COM-1617	Meter - RF Power Part #: MODEL 43 Supplier: 70998 Part #: MODEL 43P Supplier: 70998
COM-1920	Element - RF Power, 500 Watt, 950-1260 Mhz Part #: 500J Supplier: 70998
COM-10730	Test Set - Ramp, T-48/-49 Opt Part #: T-48D Supplier: 92606 Opt Part #: T-49C Supplier: 92606

**D. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
143	Area Below Aft Cargo Compartment - Left
144	Area Below Aft Cargo Compartment - Right
200	Upper Half of Fuselage
211	Flight Compartment - Left

EFFECTIVITY
AKS ALL

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(Continued)

**Zone      Area**

212      Flight Compartment - Right

**E. Prepare for the System Test**

SUBTASK 34-53-00-710-003

- (1) Do this task: Air Traffic Control System - Operational Test, TASK 34-53-00-710-801.

SUBTASK 34-53-00-940-001

- (2) Prepare the T-48/-49 ramp test set, COM-10730 and the antenna coupler for the ATC system test:

NOTE: Refer to the applicable test set operational manual for detailed setup information when using the antenna couplers.

NOTE: The test set accessory, the antenna coupler, TAP-115, TAP 118, TAP 119, TAP 125 or TAP 135 used with the applicable test set, is necessary to do a check of the output power, receiver, sensitivity and radio frequency. For the diversity check, the TAP 125 or TAP 135 is necessary.

- (a) Pull the pull-ring on the antenna coupler to separate the spring loaded clamp.

- (b) Insert the antenna coupler over the necessary ATC antenna.

NOTE: Make sure the antenna coupler is centered.

- (c) Push and hold antenna coupler so the EMI gasket compresses to the airplane skin.

- (d) Release the pull-ring to keep the coupler in its correct position.

- (e) Connect the antenna coupler coax connector to the test set ANTENNA connector.

NOTE: If you use the T-48/-49 ramp test set, COM-10730 accessory, the TAP 125 or TAP 135, the unused coupler cable does not need to be connected to the test set. You test only one antenna at a time.

- (f) Push the INTERROGATE button.

NOTE: To read the display push and hold the INTERROGATE switch.

- 1) The test set will momentarily display:

**Table 501/34-53-00-993-801**

TEL Instrument

T-4X Rev.XX

- 2) After the test set has determined the type of transponder under test (Mode S, Mode A, Mode C, etc) the display will change to: No Reply from XPNDR.

SUBTASK 34-53-00-860-026

- (3) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 34-53-00-860-015

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-860-016

- (5) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

EFFECTIVITY  
AKS ALL

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**F. ATC System Test**

SUBTASK 34-53-00-860-017

- (1) On the ATC control panel do these steps:

- (a) Set the code switches to a desired ATC ID code.

NOTE: Use the ATC ID code 7776 or the Mode A code specified by the local ATC authority.

Do not use codes 7500, 7600-7677, 7700-7775 and 7777. These are emergency codes.

- (b) Set the transponder select switch to the No. 1 system.

- (c) Set the mode select switch to the ALT ON position.

SUBTASK 34-53-00-730-001

- (2) Push the INTERROGATE switch.

- (a) Make sure the test set shows the correct transponder type.

NOTE: If the test set shows "no reply from xpdr", do a check on the test antenna connections. Also, make sure the ATC system is operational.

SUBTASK 34-53-00-730-002

- (3) Push the INTERROGATE switch on the test set.

- (a) The test set will determine the transponder type.

SUBTASK 34-53-00-860-018

- (4) Push the INTERROGATE button again and the test set will initiate a sequence of tests on the transponder.

- (a) These tests must be done to complete the ATC system test:

- 1) ATCRBS/A & SLS
- 2) ATCRBS/C
- 3) ATCRBS/A Mode S All
- 4) ATCRBS/C Mode S All
- 5) ATCRBS/A only
- 6) ATCRBS/C only
- 7) Mode S Surv Identity
- 8) Mode S Surv Altitude
- 9) Mode S Surv Short
- 10) Undesired Replies
- 11) Squitter
- 12) Diversity

NOTE: This test is only available for test sets with the TAP 125 or TAP 135 accessory and must be done manually.

- 13) MAX TRUE AIRSPEED

NOTE: This test must be done manually.

SUBTASK 34-53-00-210-001

- (5) Make sure the display is as follows when the test is complete:

EFFECTIVITY  
AKS ALL

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**Table 502/34-53-00-993-802**

CCCC	XXXXXX	YYYYYY'
ZZZ W	mmm dbm	nnn MHZ
(a) CCCC is code selected.		
(b) XXXXXX is airplane registry number		
<p><u>NOTE:</u> This may appear as the mode S address in hexadecimal. The code may be translated from hexadecimal to tail number on (WDM 34-53-11 or WDM 34-53-21).</p>		
(c) YYYYYY is airplane altitude in feet (must be $\pm 125'$ of the Capt's and F/O's altimeter).		
(d) ZZZ is the transmitter power output (must be > 125 and < 500 Watts).		
(e) mmm is the receiver sensitivity (must be between -77 to -71 dbm).		
(f) nnn is the frequency deviation ( $\pm 1$ MHz maximum allowed).		

**SUBTASK 34-53-00-730-003**

- (6) Do the DIVERSITY CHECK that follows for the test sets with the TAP 125 or TAP 135 couplers:

NOTE: This test can only be done with the TAP 125 or TAP 135 coupler. If you do not have the TAP 125 or TAP 135 coupler, do the test that uses the Bird RF through-line wattmeter.

- (a) Push the TEST button on the test set until you get to the DIVERSITY CHECK.
  - 1) Make sure to pause between each push of the TEST button to allow the test set to do that test step.
- (b) The test set will show DIVERSITY and then either PASS or FAIL.

NOTE: If the test shows "Diversity Fail", repeat the test since this may be the result of an interrogation from a near-by radar or other interference, or placement of the coupler on the ATC blade antenna.

**SUBTASK 34-53-00-730-004**

- (7) Do the Diversity Check that follows for the test set without the TAP 125 or TAP 135 coupler:

- (a) Disconnect the antenna cable at the top antenna switch connector, D2703, and connect the RF through-line watt element, COM-1920, in its place.
- (b) Make a note of the maximum power output and the minimum power output measured by the RF through-line watt meter, COM-1617, during the mode S squitter transmission period.
  - 1) Make sure the minimum power output is 100 times or 20 db lower than the maximum power output.
- (c) Disconnect the RF through-line watt element, COM-1920.
- (d) Connect the antenna cable at the top antenna switch connector, D2703.

**SUBTASK 34-53-00-760-001**

- (8) Do these steps that follow for the MAX TRUE AIRSPEED TEST:

- (a) Push the TEST button on the test set until you get to the MAX TRUE AIRSPEED TEST.
  - 1) Make sure to pause between each push of the TEST button to allow the test set to do that test step.
- (b) The test set will show the max true airspeed that has been pin programmed at each transponder.
  - 1) The test set display must be:



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**Table 503/34-53-00-993-803**

MAX TRUE AIRSPEED

GT 300 & LE 600 kts

SUBTASK 34-53-00-730-005

- (9) Do the steps that follow for the IDENT BUTTON CHECK:

- (a) On the ATC control panel do the steps that follow:  
1) Set the code switches to a desired ATC ID code

NOTE: Use the ATC ID code 7776 or the Mode A code specified by the local ATC authority.

Do not use codes 7500, 7600-7677, 7700-7775 and 7777. These are emergency codes.

- 2) Put the ATC select switch to the No. 1 position  
3) Put the mode select switch to the ALT ON position.

- (b) Make sure the test set displays the desired ATC ID code.

- (c) Turn the test set off.

- (d) Wait a moment, then push the INTERROGATE button.  
1) Allow the test set to determine the type of transponder under test.

- (e) At the same time push the control panel IDENT button and the test set TEST button.  
(f) Make sure the message IDENT is displayed on the test set.

SUBTASK 34-53-00-730-006

- (10) Do the test again as necessary, for the right system.

- (a) To test the right system, put the ATC select switch to the No. 2 position.

**G. Put the airplane back to its Usual Condition.**

SUBTASK 34-53-00-860-019

- (1) Put the mode select switch to the STBY position.

SUBTASK 34-53-00-840-006

- (2) Disconnect and remove the antenna coupler.

SUBTASK 34-53-00-840-002

- (3) Disconnect and remove the ATC test set.

SUBTASK 34-53-00-840-005

- (4) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 34-53-00-860-020

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-840-003

- (6) If the electrical power is no longer necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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**TASK 34-53-00-730-805**

**5. ATC System - System Test (With the IFR 6000 Test Set)**

NOTE: This procedure is a scheduled maintenance task.

**A. General**

- (1) This system test is a full check of the ATC system. The system test first does the ATC - Operational Test and then uses the IFR-6000 ramp test set, COM-10727 to examine the left and right ATC systems.
- (2) The XPDR Mode of the IFR 6000 provides flight line test capability for ATCRBS and Mode S transponders using an Auto Test. The XPDR Auto Test contains one main screen (the Auto Test Screen) and up to 17 additional test screens. The Auto Test can complete a full FAR Part 43, Appendix F Test, providing decode and display of Elementary and Enhanced surveillance GICB extracted DAPs (Downlinked Aircraft Parameters).
- (3) A passed Auto Test complies with the FAR Part 43 Appendix F test requirements.
- (4) All data normally required to verify transponder operation in accordance with FAR 91.413, Part 43, Appendix F, is shown on the Auto Test Screen. Details of individual tests conducted during the AUTO TEST are stored in memory in the Test Sets TEST LIST. Tests in the TEST LIST can be reviewed or run individually by use of DATA and SELECT keys.
- (5) Different classes of transponders are tested to built-in test limits by selection of configuration files. If the class of transponder is unknown, generic configuration files are provided for ATCRBS and Mode S transponders that apply the widest system limits.
- (6) Mode S Transponder level is automatically determined when running a test.

**| AKS 001-023**

- (7) The IFR-6000 can also test airplanes with ADS-B functions. The ADS-B tests are not included with the AUTO TEST. They have separate setup and test screens.

**| AKS ALL**

- (8) The test is applicable to the left and the right ATC system. Set the transponder select switch on the ATC control panel to the applicable position to do a test of that system.

**B. References**

Reference	Title
22-11-00 P/B 501	DIGITAL FLIGHT CONTROL SYSTEM - ADJUSTMENT/TEST
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
34-21-00 P/B 501	AIR DATA INERTIAL REFERENCE SYSTEM - ADJUSTMENT/TEST
34-31-00 P/B 501	INSTRUMENT LANDING SYSTEM - ADJUSTMENT/TEST
34-58-00-710-802	Global Positioning System - Operational Test (P/B 501)
34-61-00 P/B 501	FLIGHT MANAGEMENT COMPUTER SYSTEM - ADJUSTMENT/TEST
WDM 34-53-11	Wiring Diagram Manual
WDM 34-53-11, 34-53-21	Wiring Diagram Manual
WDM 34-53-21	Wiring Diagram Manual

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**C. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-10727	Test Set - Ramp, IFR-6000 Part #: IFR 6000 Supplier: 51190

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
100	Lower Half of Fuselage
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right

**E. Prepare for the System Test**

**AKS 001-023**

SUBTASK 34-53-00-580-002

- (1) If the ADS-B tests will be run as part of the ATC System test the airplane location must let the GPS antennas have a clear view of the GPS satellites.

**AKS ALL**

SUBTASK 34-53-00-860-042

- (2) Make sure that these systems are operational:
  - (a) DFCS - DIGITAL FLIGHT CONTROL SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 22-11-00/501
  - (b) ADIRS - AIR DATA INERTIAL REFERENCE SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 34-21-00/501
  - (c) MMR - INSTRUMENT LANDING SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 34-31-00/501
  - (d) ATC - AIR TRAFFIC CONTROL (ATC) SYSTEM - ADJUSTMENT/TEST, 34-53-00/501
  - (e) FMCS - FLIGHT MANAGEMENT COMPUTER SYSTEM - ADJUSTMENT/TEST, PAGEBLOCK 34-61-00/501

SUBTASK 34-53-00-710-006

- (3) Do this task: Air Traffic Control System - Operational Test, TASK 34-53-00-710-801

SUBTASK 34-53-00-860-034

- (4) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

**AKS 001-023**

SUBTASK 34-53-00-860-057

- (5) Set a selected altitude.
  - (a) Set a desired altitude in the DFCS MCP Selected Altitude window.

SUBTASK 34-53-00-860-058

- (6) Select a Flight ID.
  - (a) Select the RTE function key on the FMC MCDU.

EFFECTIVITY	AKS ALL
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- (b) Make sure page 1 is shown.

NOTE: If needed push the next page function key on the MCDU until page 1 is shown.

- (c) Enter a Flight ID on the MCDU scratchpad (i.e. BOE1234).

- (d) Select LSK 2R on the MCDU.

**AKS ALL**

SUBTASK 34-53-00-860-035

- (7) On the ATC control panel do these steps:

- (a) Set the code switches to a desired ATC ID code.

NOTE: Use the ATC ID code 7776 or the Mode A code specified by the local ATC authority.

Do not use codes 7500, 7600-7677, 7700-7775 and 7777. These are emergency codes.

- (b) Set the transponder select switch to the No. 1 position.

- (c) Set the Mode Select switch to the ALT ON position.

- (d) Set the ALT source switch to the No. 1 (or No. 2) air data source position.

SUBTASK 34-53-00-865-003

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-860-037

- (9) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task:Put the Airplane in the Air Mode, TASK 32-09-00-860-801

SUBTASK 34-53-00-840-011

- (10) Prepare the IFR-6000 ramp test set, COM-10727, for the ATC system test.

NOTE: The IFR-6000 ramp test set has an "auto test" function which checks more parameters of the transponder under test, than are required by FAR 43, Appendix F. Ramp test set operating instructions provides charts, distance limitations and required airplane antenna configurations for satisfactory ramp test set results. It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set and be familiar with its operation when determining the acceptability of transponder results and compliance with FAR 43, Appendix F.

NOTE: The software version for the IFR-6000 ramp test set should be version 1.03.02 or higher for the ATC system test.

- (a) Mount the Directional Antenna on the Test Sets friction hinge and connect the Directional Antenna ANT Connector to the Test Set ANT Connector via the 12 in. coaxial cable.

NOTE: You can use the direct cable connection procedure to perform this test. If you do the direct cable connection, follow the instructions in the ramp test set operations manual.

EFFECTIVITY  
AKS ALL

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- (b) Push the POWER Key to energize the Test Set On.

NOTE: The IFR 6000 is equipped with a Self Test for quick performance evaluation. An abbreviated Self Test is run at Power-Up. The full Self Test is initiated manually. Refer to the IFR 6000 Operation Manual for the full Self Test procedure.

- (c) Push the SETUP Control Key to show the setup screens. Continue pushing the SETUP Control Key to cycle to the SETUP-GENERAL Screen. Use the NEXT PARAM and PREV PARAM Soft Keys to set each parameter.

NOTE: Refer to the IFR 6000 Operation Manual for detailed information on setup.

- (d) Push the SETUP Control Key to show the setup screens. Continue pushing the SETUP Control Key to cycle to the SETUP-XPDR Screen. Use the NEXT PARAM and PREV PARAM Soft Keys to set each parameter.

NOTE: Setup XPDR Screen contains parameters which determine operational characteristics of the XPDR Functional Mode. Unless otherwise stated, last used values are retained on Power-up.

- 1) Select ANTENNA: Set to TOP or BOTTOM depending on which aircraft antenna is under test.

- 2) Select RF PORT: Set to ANTENNA.

- 3) Select ANT RANGE: Set to setup range from IFR 6000 antenna to the Unit Under Test (UUT) Antenna.

- 4) Select ANT HEIGHT: Set to setup height from IFR 6000 antenna to the UUT Antenna.

NOTE: The lower antenna is approximately 4 feet (1.2 m) above ground level. The upper antenna is approximately 18 feet (5.5 m) above ground level.

- 5) Select ANT CABLE LOSS: Set to cable loss found on cable.

- 6) Select ANT GAIN (dBi): set 1.03 GHz and 1.09 GHz antenna gain to figures marked on supplied Directional Antenna.

- 7) Select UUT ADDRESS: Set to AUTO (defaults to AUTO on power-up). AUTO selection Mode S address is obtained via ATCRBS/Mode S All Call (FAR Part 43, Appendix F approved method).

NOTE: Refer to the IFR 6000 Operation Manual for more detailed information on UUT Address selection.

- 8) Select DIVERSITY: Set to ON.

NOTE: If Diversity Isolation Test is enabled, make sure the Antenna Shield is installed to the top or bottom UUT antenna prior to running the test. Refer to IFR 6000 Operation Manual for the Antenna Shield mounting procedure.

NOTE: For the DIVERSITY test, the test set must be at a distance of less than 50 feet (15.2 meters) from the airplane antenna.

- 9) Select CHECK CAP: Set to YES.

- 10) Select PWR LIM: Set to FAR 43.

**CAUTION:** DO NOT OPERATE THE TEST SET WHEN ITS ANTENNA IS LESS THAN 15 IN. (381 MM) FROM THE AIRPLANE ANTENNA. DAMAGE TO THE TEST SET CAN OCCUR.

- (e) Position the Test Set ≤50 feet from and in line of sight with the UUT antenna.

EFFECTIVITY  
AKS ALL

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- (f) Insert the Antenna Shield over the ATC antenna not under test.

NOTE: Refer to the IFR 6000 Operation Manual for the Antenna Shield mounting procedure.

NOTE: When testing the bottom antenna and shielding the top antenna is not possible or practical, move the Test Set so that it is not in the line of sight of the top ATC antenna.

## F. ATC System Test

SUBTASK 34-53-00-730-012

- (1) Do the ATC System Test:

NOTE: When first powered-up, the Test Set displays blank data fields. The last test results are displayed while Test Set remains powered on.

- (a) Push the XPDR Mode Key on the IFR-6000 ramp test set, COM-10727 to return to XPDR Auto Test Screen.  
(b) Push the CONFIG Soft Key to show the XPDR CONFIG Screen. Use the Data Keys to select the desired configuration file. Push the RETURN Soft Key to confirm the selection.

NOTE: Eight predefined Configurations are provided to determine the PASS/FAIL limits applied to ERP, Frequency and MTL measurements. Configurations are named by class and option. Refer to the IFR 6000 Operation Manual for predefined Configuration details

NOTE: If the transponder class is not known, select the GENERIC ATCRBS or GENERIC MODE S configuration file.

- (c) To do the Auto Test, push the RUN TEST Soft Key. When the Auto Test completes, a PASS or FAIL indication is shown at the top of the Auto Test screen.

NOTE: The Auto Test Screen is the primary test screen and displays most UUT parameters requiring user verification.

NOTE: A passed Auto Test complies with the FAR Part 43 Appendix F test requirements.

NOTE: Refer to the IFR 6000 Operation Manual for detailed information on test screens and interpreting results of the tests.

- (d) Make sure the AA (aircraft address) field shows the correct Mode S Address. Refer to WDM 34-53-11 or WDM 34-53-21 for the Mode S Address code.

- (e) Push the TEST LIST Soft Key to show the complete Auto Test List. Tests may be reviewed or run individually by use of the DATA and SELECT keys.

NOTE: When a Mode S configuration is selected the test list is displayed over two screens. When an ATCRBS configuration is selected the test list is displayed on one screen.

- (f) To do the tests individually in the Test List, do these steps:

1) Use the DATA Keys to select desired test. Push the SELECT TEST Soft Key to show the selected test.

2) Push the RETURN Soft Key to show the XPDR Auto Test Screen.

3) Push the RUN TEST Soft Key to the start test.

NOTE: The test runs until stopped. Each pass through the test sequence updates the PASS/FAIL indication.

4) Push the STOP TEST Soft Key to the stop test.

5) Push the NEXT TEST Soft Key to show the next test.

EFFECTIVITY  
AKS ALL

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- 6) Push the PREV TEST Soft Key to show the previous test.
- 7) Push the RETURN Soft Key to show the test list and select desired test.

**AKS 001-023**

SUBTASK 34-53-00-730-027

- (2) To do the tests for ADS-B, do the following:

- (a) Do the ADS-B test setup

NOTE: Refer to the IFR 6000 Operation Manual for detailed information on ADS-B test setup.

- 1) Push the SETUP Key until the SETUP-XPDR Screen is shown.
  - 2) Push the ADS-B SETUP Soft Key.
  - 3) Set the parameters by pushing the NEXT PARAM soft key. Push the PREV PARAM to select the field. Use DATA Keys to slew the data.
    - a) Select POS DECODE: Set to LOCAL
    - b) Select LAT: Set the local latitude position.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.

- c) Select LONG: Set the local longitude position.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.

- d) Select ADS-B MON: Set to DF17.
  - e) Select GICB: Set to DF20.

- (b) Do the ADS-B tests.

NOTE: Refer to the IFR-6000 Operation Manual for detailed information on test screens and interpreting results of the tests.

- 1) Push the XPDR mode key twice to show the ADS-B/GICB Main Menu.
  - 2) Push the ADS-B MON Soft Key to show the ADS-B MON list screen.
    - a) The ADS-B MON list screen will show the following extended squitter BDSs:
      - 0,5 AIRBORNE POS
      - 0,6 SURFACE POS
      - 0,8 IDENT & CAT
      - 0,9 AIRBORNE VEL
      - 6,1 A /C STATUS
      - 6,2 TARG STATE
      - 6,5 A /C OP STATUS

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- 3) Push the RUN TEST soft key to start the test . When a specific extended squitter BDS is captured, AVAIL will be shown to the right of the BDS name.

NOTE: The test will continue to run until the STOP TEST soft key is pushed.

NOTE: Airplane must be in the Ground Mode to capture the 0,6 SURFACE POS BDS. Only the top ATC antenna will transmit the 0,6 SURFACE POS BDS.

- 4) You can use the Data Keys to select a specific BDS and push the BDS DATA soft key to show the selected BDS screen.

NOTE: To show the next or previous BDS screen, push the NEXT TEST or PREV TEST soft keys.

- 5) Push the RETURN soft key to return to the ADS-B MON list screen.

- (c) Do a check of the ADS-B test results.

NOTE: The test results that follow satisfy the EASA AMC 20-24 requirements for ADS-B.

- 1) Do a check of the Airborne Position.

a) Select the 0,5 BDS with the BDS Data soft key.

b) Make sure that the LAT and LONG fields show the position data entered in the ADS-B setup screen.

- 2) Do a check of the Pressure Altitude.

a) Select the 0,5 BDS with the BDS Data soft key.

b) Make sure that the BARO PRESS ALT field shows the airplane Barometric Pressure Altitude +/-125 ft.

- 3) Do a check of the Surveillance Status.

a) Notify local ATC facilities that transponder testing of the Surveillance Status will be performed.

b) Select the 0,5 BDS with the BDS Data soft key.

c) On the ATC control panel, change the code switches to a different ATC ID code.

d) Make sure that the SURVEILLANCE STATUS field changes to TEMP ALERT.

e) Set code switches on the ATC control panel back to the original code.

f) Push the IDENT switch on the ATC Control Panel.

g) Make sure that the SURVEILLANCE STATUS field shows SPI.

- 4) Do a check of the Position Quality Indicator.

a) Select the 0,5 BDS with the BDS Data soft key.

b) Make sure that the TYPE field does not show 0 or 18.

NOTE: If TYPE shows 0 the transponder does not receive position data from the IRS or MMR. A TYPE of 18 indicates the transponder receives position data but not from the MMR.

- 5) Do a check of the Aircraft Identity.

a) Select the 0,8 BDS with the BDS Data soft key.

b) Make sure that the correct data is shown in the following fields:

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- <1> The AA (aircraft address) field shows the Mode S Address. Refer to (WDM 34-53-11, 34-53-21 )for the Mode S Address code.
- <2> The FLIGHT ID field shows the same Flight ID entered into the FMC (SUBTASK 34-53-00-860-058).

| AKS ALL

G. Repeat System Tests

SUBTASK 34-53-00-730-013

- (1) Repeat the System Test for the other antenna.

SUBTASK 34-53-00-730-014

- (2) Repeat the System Test for the No. 2 or right system on the upper and lower antennas.

NOTE: To meet FAR requirements both the left and right systems must be tested on both upper and lower antennas.

H. Put the Airplane Back to its Usual Condition

SUBTASK 34-53-00-080-003

- (1) Set the mode selector on the ATC control panel to the STBY position.
- (2) Remove the test set, IFR-6000 ramp test set, COM-10727.
- (3) Remove the antenna shield, if installed.

SUBTASK 34-53-00-860-038

- (4) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 34-53-00-865-002

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-862-006

- (6) If the electrical power is no longer necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

———— END OF TASK ————

**TASK 34-53-00-730-806**

6. ATC System Test (With the TR-220 Test Set)

NOTE: This procedure is a scheduled maintenance task.

A. General

- (1) This system test is a full check of the ATC system. The system test first does the ATC - Operational Test and then uses the test set to examine the left and right ATC systems.
- (2) The TR-220 Test Set is capable of testing ATCRBS Mode A, Mode C and Mode S transponders. The operator can select between an Automatic series of tests and a Manual series of tests. The Test Set will determine the correct set of tests, either Mode A/C or Mode S upon receiving the transponder RF signal. The TR-220 can also test Mode S Transponders with Enhanced Surveillance (EHS) capabilities.



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- (3) The TR-220 Test Set with software version 5.20 or higher can also test the Automatic Dependent Surveillance Broadcast (ADS-B) functions. The ADS-B tests satisfy the EASA AMC 20-24 requirements.

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- (4) The test set can do all of the tests automatically except the IDENT BUTTON CHECK. You must do this test manually with the test set. If a test has failed, the automatic test sequence will stop and a failed message will show. At the end of the automatic test all data will show.
- (5) You can manually do each test individually. Push the AUTO/TEST/MANUAL switch to the MANUAL position to do each test individually. The test results will show after each test is done. After each test is completed, you must toggle the MANUAL switch to advance to the next test in the series.
- (6) Operation with the antenna coupler TAP-200 used with the test set, reduces Radio Frequency emissions from the transponder being tested. It is not necessary to use the coupler to perform these tests.
- (7) If it is necessary to simulate the aircraft at altitude, notify the local ATC that the transponder testing is in progress.

**B. References**

<b>Reference</b>	<b>Title</b>
22	AUTOFLIGHT
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
34	NAVIGATION
34-58-00-710-802	Global Positioning System - Operational Test (P/B 501)
WDM 34-53-11	Wiring Diagram Manual
WDM 34-53-11, 34-53-21	Wiring Diagram Manual
WDM 34-53-21	Wiring Diagram Manual

**C. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-10728	Test Set - Ramp, TR-220 Part #: TR-220 Supplier: 92606

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
100	Lower Half of Fuselage
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
200	Upper Half of Fuselage
211	Flight Compartment - Left
212	Flight Compartment - Right



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**E. Prepare for the System Test**

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SUBTASK 34-53-00-580-003

- (1) If the ADS-B tests will be run as part of the ATC System test the airplane location must let the GPS antennas have a clear view of the GPS satellites.

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SUBTASK 34-53-00-861-002

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

SUBTASK 34-53-00-860-043

- (3) Make sure that these systems are operational:
  - (a) Digital Flight Control System (AUTOFLIGHT, CHAPTER 22)
  - (b) Air Data Inertial Reference System (NAVIGATION, CHAPTER 34)
  - (c) Instrument Landing System ( NAVIGATION, CHAPTER 34)
  - (d) Air Traffic Control System (NAVIGATION, CHAPTER 34)
  - (e) Flight Management Computer System ( NAVIGATION, CHAPTER 34)

SUBTASK 34-53-00-710-007

- (4) Do this task: Air Traffic Control System - Operational Test, TASK 34-53-00-710-801.

SUBTASK 34-53-00-860-044

- (5) On the ATC control panel do these steps:

- (a) Set the code switches to a desired ATC ID code.

NOTE: Use the ATC ID code 7776 or the Mode A code specified by the local ATC authority.

Do not use codes 7500, 7600-7677, 7700-7775 and 7777. These are emergency codes.

- (b) Set the transponder select switch to the No. 1 system.
  - (c) Set the mode select switch to the ALT ON position.
  - (d) Set the ALT source switch to the No. 1 (or No. 2) air data source position.

SUBTASK 34-53-00-860-045

- (6) Set the captain's and first officer's altimeter to 29.92 inches of mercury.

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SUBTASK 34-53-00-860-046

- (7) Set a selected altitude.

- (a) Set a desired altitude in the DFCS MCP Selected Altitude window.

SUBTASK 34-53-00-860-047

- (8) Select a Flight ID.

- (a) Select the RTE function key on the FMC MCDU.
  - (b) Make sure page 1 is shown.

NOTE: If needed push the next page function key on the MCDU until page 1 is shown.

- (c) Enter a Flight ID on the MCDU scratchpad (i.e. BOE1234).

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- (d) Select LSK 2R on the MCDU.

**AKS ALL**

SUBTASK 34-53-00-860-048

**WARNING:** OBEY THE PROCEDURE THAT PUTS THE AIRPLANE IN THE AIR MODE. IF YOU DO THE PROCEDURE INCORRECTLY, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (9) Put the airplane in the air mode with the BITE in the Proximity Switch Electronics Unit (PSEU), do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 34-53-00-860-049

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-860-050

- (11) Prepare the TR-220 ramp test set, COM-10728 and the antenna coupler, if desired, for the ATC system test:

NOTE: The TR-220 ramp test set has an "auto test" function which checks more parameters of the transponder under test, than are required by FAR 43, Appendix F. Ramp test set operating instructions provides charts, distance limitations and required airplane antenna configurations for satisfactory ramp test set results. It is recommended that the ramp test set operator have the most current operating instructions for the ramp test set and be familiar with its operation when determining the acceptability of transponder results and compliance with FAR 43, Appendix F.

NOTE: Refer to the TR-220 Operating Manual for detailed information on setup, test screens, and interpreting results of the tests.

- (a) Connect the test set antenna, or antenna coupler, coax connector to the test set ANTENNA connector.

NOTE: You can use the direct cable connection procedure to perform this test. If you do the direct cable connection, follow the instructions in the ramp test set Operating Manual.

- (b) Put the TEST SET switch in the ON position.

- 1) The test set will display a startup screen, then do a self test.

- a) Make sure the display indicates SELF TEST PASS.

- (c) Turn the UUT FUNCTION switch on the test set to the XPDR position.

- 1) The test set will determine the transponder type and display the correct Start Page.

- a) Make sure the test set shows the correct transponder type.

NOTE: If the test set shows "no reply from xpdr", do a check on the test antenna connections. Also, make sure the ATC system is serviceable.

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**F. ATC System Test - Mode A/C and Mode S Transponders**

SUBTASK 34-53-00-730-016

- (1) You can select to do these Mode A/C or Mode S tests in either an Automatic or Manual Test sequence.

NOTE: Make sure you consult FAR 91.413 and PART 43 Appendix F for test requirements and acceptable results.

NOTE: The TR-220 Operating Manual also contains information about the tests.

- (a) Mode A/C test sequence.

- Mode A Test
- Mode C Test
- Mode A SLS Test
- Sensitivity Test
- Power and Frequency Test

- (b) Mode S test sequence.

- Mode A Test
- Mode C Test
- Mode A SLS Test
- Mode A All Call Test
- Mode C All Call Test
- Mode A Only Test
- Mode C Only Test
- Mode S Surveillance Identity Test
- Mode S Surveillance Altitude Test
- Mode S Short Air to Air Surveillance Test
- Mode S Communication Identity Test
- Mode S Communication Altitude Test
- Undesired Replies Test
- Squitter Test
- Max True Airspeed Test
- Diversity Test
- Sensitivity Test
- Power and Frequency Test

NOTE: For airplanes with Enhanced Surveillance functions, the TR-220 test set includes the Flight ID test in the MODE S test sequence.

SUBTASK 34-53-00-730-017

- (2) Do these steps to run the Automatic Test sequence.

- (a) Toggle the AUTO/TEST/MANUAL switch to the AUTO position. The test set starts an automatic sequence of tests on the transponder.
- (b) When the Automatic Test sequence completes with no failures, the display window shows two alternating sets of data.

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- (c) Make sure the AA (aircraft address) field shows the correct Mode S Address. Refer to WDM 34-53-11 or WDM 34-53-21 for the Mode S Address code.
- (d) If a test fails during the Automatic Test sequence, the test set stops at that test. The display window shows FAIL along with the framing pulses, pulse width and separation in microseconds.
  - 1) You can override and skip to the next test in the sequence by toggling the AUTO/TEST/MANUAL switch to the AUTO position.  
NOTE: It is recommended that the cause of the failure be determined before you do the next test.
  - 2) To repeat a failed test, toggle the AUTO/TEST/MANUAL switch to the MANUAL position.

SUBTASK 34-53-00-730-018

- (3) Do these steps to run the Manual Test sequence.
  - (a) Toggle the AUTO/TEST/MANUAL switch to the MANUAL position to begin the first test of the transponder. The display window shows the name of the test and the word Testing.
  - (b) When the test is complete the display window shows the test name and the test results.
  - (c) Toggle the AUTO/TEST/MANUAL switch to the MANUAL position to begin the next test in the sequence.

SUBTASK 34-53-00-730-019

- (4) Do these steps to do the IDENT TEST.  
NOTE: The IDENT function can only be tested in the Manual Test sequence for either the Mode A/C or Mode S transponder.
  - (a) Toggle the AUTO/TEST/MANUAL switch to the MANUAL position to begin the first test of the transponder. The display window shows the name of the test and the word Testing.
  - (b) Wait until the display window shows the test results.
  - (c) Push the IDENT switch on the ATC control panel.
    - 1) IDENT should show on the TR-220 ramp test set, COM-10728 display window for 20 seconds to make sure the SPI pulse is received from the transponder.

SUBTASK 34-53-00-730-023

- (5) Do these steps to do the Mode S Surveillance Altitude Test.
  - (a) Toggle the AUTO/TEST/MANUAL switch to the MANUAL position until M S SURV ALT is shown.
  - (b) Make sure that the altitude value shown on the TR-220 ramp test set, COM-10728 display agrees with the altitude on the captain's and first officer's altimeter within  $\pm 125$  feet.

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**G. ATC System Test - Additional Tests for Enhanced Surveillance**

SUBTASK 34-53-00-730-020

- (1) You can use the manual test sequence to do any additional tests required for enhanced surveillance.

NOTE: The TR-220 Operating Manual contains information about the tests.

- (a) Mode S Enhanced Surveillance Test Sequence
  - BDS5 Roll Angle

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- BDS5 True Track Angle and Track Angle Rate
- BDS5 True Airspeed and Ground Speed
- BDS6 Indicated Airspeed, Heading and Mach Number
- BDS6 Barometric Altitude Rate and Inertial Vertical Velocity
- BDS 10 Datalink
- BDS1 Subnet Network Number
- BDS1 Mode S Specific Services Capability
- BDS1 Aircraft Identification Capability
- BDS1 Uplink UELM/Downlink DELM Capability
- BDS 1,7
- BDS 1,8
- BDS 1,9
- BDS3 Resolution Advisory
- BDS4 Selected Altitude
- BDS4 Barometric Pressure and Target Altitude
- BDS4 VNAV, ALT Hold, and Approach Modes

SUBTASK 34-53-00-730-035

- (2) To check the Flight ID function, do the steps that follow:

NOTE: The TR-220 test set includes the Flight ID test in the MODE S test sequence.

- (a) Toggle the AUTO/TEST/MANUAL switch to the MANUAL position until the M S Comm ID test shows.
- (b) Make sure that the Flight ID field shows the same Flight ID entered into the FMC.

NOTE: The Flight ID also shows on one of the two alternating displays at the end of the MODE S automatic test sequence.

SUBTASK 34-53-00-730-021

- (3) To do the remaining Enhanced Surveillance tests, do these steps at the test set TR-220 ramp test set, COM-10728:

- (a) Push the TO/START - FROM/STOP switch to the TO position to show the EHS menu.
  - 1) Make sure the display window shows the Mode S Enhanced Surveillance menu.
- (b) Push the UP/FWD - DOWN/REV switch to the UP position to select the applicable uplink/downlink format, UF5/DF21 or UF0/DF16. The recommended selection is UF0/DF16.
- (c) Toggle the AUTO/TEST/MANUAL switch to MANUAL to start the first test.

NOTE: Test sequence starts at test previously run.

- 1) When the test is complete, the results are shown on the display window.

- 2) Make sure that the data field shown is not blank.

- (d) Toggle the AUTO/TEST/MANUAL switch to the MANUAL position to begin the next test in the sequence.
- (e) Continue until the required tests are completed.
  - 1) Make sure that the data fields shown are not blank.

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**H. ATC System Test - Additional Tests for ADS-B**

NOTE: The TR-220 requires Software Version 5.20 or higher to perform the following ADS-B tests.  
The test results satisfy the EASA AMC 20-24 ADS-B requirements.

SUBTASK 34-53-00-730-028

(1) You can use the manual test sequence to do any additional tests required for ADS-B.

(a) The ADS-B Test Sequence is as follows:

NOTE: Airplane must be in the Ground Mode to display the BDS 0,6 Surface Position Report. Only the top ATC antenna will transmit the 0,6 SURFACE POS BDS.

- Airborne Position Report
- Surface Position Report
- Aircraft Identification and Type Report
- Airborne Velocity Report
- Velocity Hex
- Mode S Address
- Latitude & Longitude
- Airborne Surveillance Status
- Position Hex
- Type 28 Decoded
- Type 28 Hex
- Type 29 Decoded
- Type 29 Hex
- Type 31 Hex
- Horizontal Position Integrity

SUBTASK 34-53-00-730-029

(2) Do the ADS-B test setup.

NOTE: Refer to the TR-220 Operating Manual for detailed information on the ADS-B test setup.

- (a) Set the test set UUT FUNCTION switch to the SETUP position.
- (b) Toggle the AUTO/TEST/MANUAL switch to MANUAL to select the LAT/LON screen.
- (c) Set the local latitude and longitude positions.
  - 1) Use the TO/START-FROM/STOP switch to select to the field that needs to be set.
  - 2) Use the UP/FWD-DOWN/REV switch to change the values.

NOTE: Position data is on the FMC CDU POS REF page. Use GPS position if GPS antennas have a clear view of the GPS satellites (Global Positioning System - Operational Test, TASK 34-58-00-710-802), if not, use the IRS position.

SUBTASK 34-53-00-730-036

(3) Do the ADS-B tests.

NOTE: The test results that follow satisfy the EASA AMC 20-24 requirements for ADS-B.

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- (a) Set the UUT FUNCTION switch to ADS-B TX position.  
NOTE: When the UUT FUNCTION switch is set to ADS-B TX, the display will first show the Position screen.
- (b) Do a check of the Airborne Position.
  - 1) On the Airborne Position screen, make sure that the Latitude/Longitude field shows the present position.
- (c) Do a check of the Pressure Altitude.
  - 1) On the Airborne Position screen, make sure that the Altitude field shows the airplane barometric pressure altitude +/- 125 ft.
- (d) Do a check of the Aircraft Identity.
  - 1) Set the AUTO/TEST/MANUAL switch to the MANUAL position to show the Identification screen.
  - 2) Make sure that Flight ID field shows the same Flight ID entered into the FMC.
- (e) Do a check of the Mode S Address.
  - 1) Set the AUTO/TEST/MANUAL switch to the MANUAL position until Mode S Address screen shows.
  - 2) Make sure that the Mode S Address field shows the correct Mode S Address. Refer to (WDM 34-53-11, 34-53-21) for the Mode S Address code.
- (f) Do a check of the Airborne Surveillance Status.
  - 1) Notify local ATC facilities that transponder testing of the Surveillance Status will be performed.
  - 2) Set the AUTO/TEST/MANUAL switch to the MANUAL position until the Airborne Surveillance Status screen shows
  - 3) On the ATC control panel, change the code switches to a different ATC ID code.
  - 4) Make sure that the SURV STAT field changes to TEMP ALERT.
  - 5) Set code switches on the ATC control panel back to the original code.
  - 6) Push the IDENT switch on the ATC Control Panel.
  - 7) Make sure that the SURV STAT field shows SPI.
- (g) Do a check of the Airborne Position Quality Indicator.
  - 1) Set the AUTO/TEST/MANUAL switch to the MANUAL position until the Position Hex screen shows.
  - 2) Make sure that the TYP field does not show 0 or 18.  
NOTE: If TYPE shows 0 the transponder does not receive position data from the IRS or MMR. A TYPE of 18 indicates the transponder receives position data but not from the MMR.

**| AKS ALL**

**I. Repeat ATC System Tests**

SUBTASK 34-53-00-730-022

- (1) Repeat the System Test for the other antenna.

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- (2) Do the ATC System Tests again for the right or No. 2 system on the upper and lower antennas.

NOTE: To meet FAR requirements both the left and right systems must be tested on both upper and lower antennas.

- (a) To test the right system, put the ATC select switch to the No. 2 position.

**J. Put the airplane back to its Usual Condition.**

SUBTASK 34-53-00-840-012

- (1) Put the mode select switch to the STBY position.

SUBTASK 34-53-00-080-004

- (2) Disconnect and remove the antenna coupler, if installed.

SUBTASK 34-53-00-080-005

- (3) Disconnect and remove the ATC test set.

SUBTASK 34-53-00-860-051

- (4) Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 34-53-00-860-052

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

**F/O Electrical System Panel, P6-3**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 34-53-00-862-007

- (6) If the electrical power is no longer necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812

———— END OF TASK ————



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AIR TRAFFIC CONTROL (ATC) ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the ATC antenna.
  - (2) An installation of the ATC antenna.
- B. The bottom ATC antenna is installed at STA 355, and the top antenna at STA 430.

**TASK 34-53-01-000-801**

**2. ATC Antenna Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-53-01-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-01-020-001

- (2) Remove the ATC antenna [3]:
    - (a) Remove the bolts [4] that attach the ATC antenna [3] to the airplane structure.
- CAUTION:** MOVE THE ANTENNA [3] ONLY AS FAR AS NECESSARY TO DISCONNECT THE COAXIAL CABLE [1]. DAMAGE TO THE CABLE [1] CAN OCCUR IF YOU PULL THE CABLE [1].
- (b) Move the ATC antenna [3] away from the airplane structure to get access to the coaxial cable [1].
  - (c) Disconnect the coaxial cable [1] from the ATC antenna [3].  
**NOTE:** Do not let the coaxial cable [1] retract into the fuselage.
  - (d) Remove the ATC antenna [3].
  - (e) Put a protective cover over the electrical connector on the ATC antenna [3].

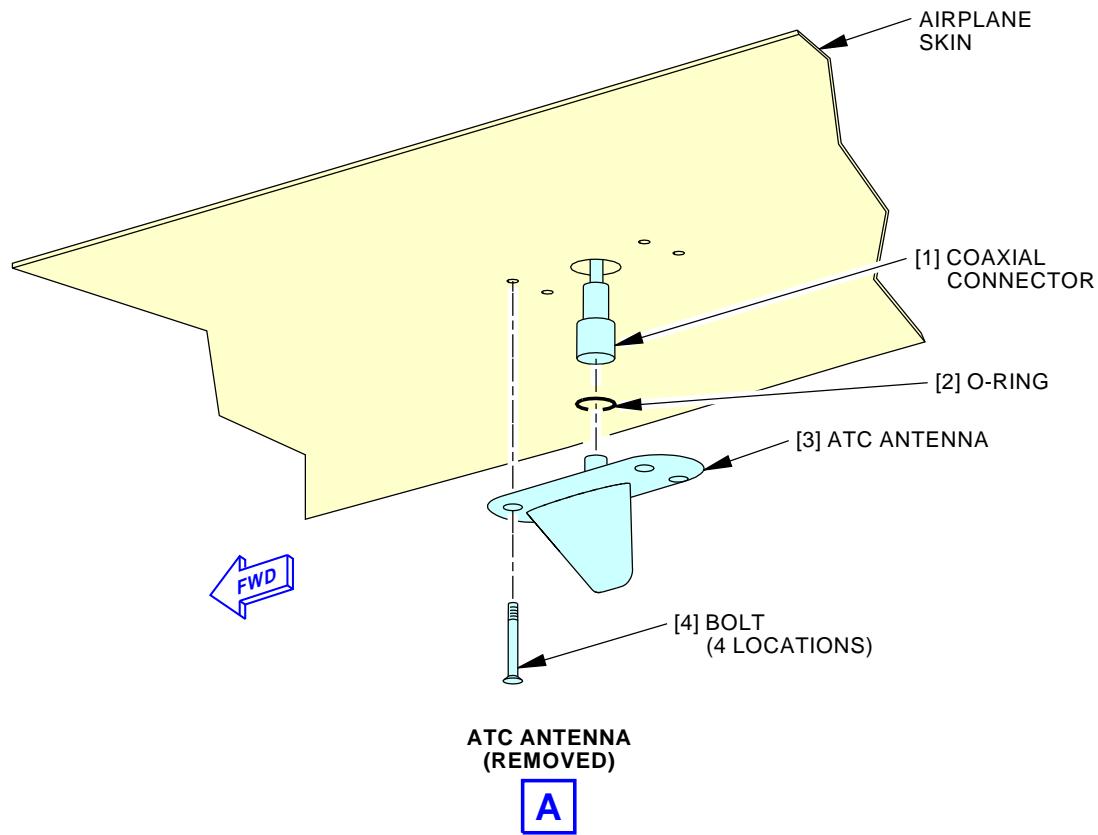
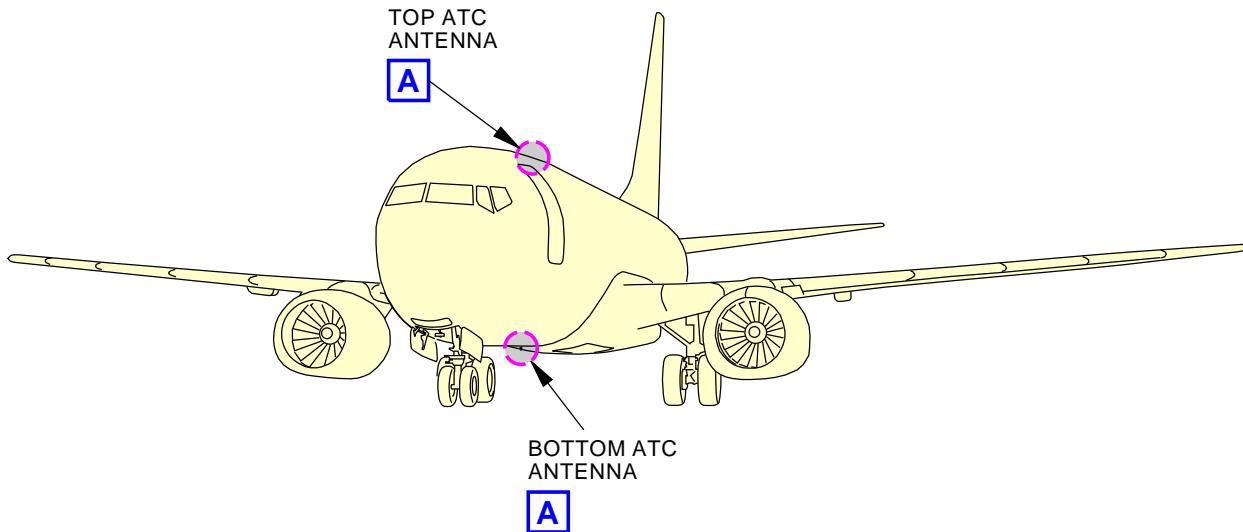
— END OF TASK —

EFFECTIVITY  
AKS ALL

**34-53-01**



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G35395 S0006577095\_V2

ATC Antenna Installation  
Figure 401/34-53-01-990-801

EFFECTIVITY  
AKS ALL

**34-53-01**



**737-600/700/800/900**  
**AIRCRAFT MAINTENANCE MANUAL**

**TASK 34-53-01-400-801**

**3. ATC Antenna Installation**

(Figure 401)

**A. References**

Reference	Title
20-30-84-910-801	Final Cleaning of Metal Prior to Painting (Series 84) (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
51-21-31-350-801	Removal and Control of Corrosion for Aluminum and Aluminum Alloys (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-806	Aerodynamic Smoother Application (P/B 201)
SL 20-043	Deferred Application of Aero-Sealant in Antenna Installations

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17

**C. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B01004	Solvent - Final Cleaning Of Metal Prior To Painting (AMM 20-30-84/201) - Series 84	
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

**D. Location Zones**

Zone	Area
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right





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E. Installation Procedure

SUBTASK 34-53-01-860-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-01-110-001

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

- (2) Clean the airplane mating surface with Series 84 solvent, B01004 (TASK 20-30-84-910-801).  
(a) Make a cotton wiper, G00034, moist (not soaked) with solvent.  
(b) Rub the airplane mating surface with the cotton wiper, G00034, until the surface is clean.

SUBTASK 34-53-01-300-001

- (3) If the airplane mating surface has corrosion or unwanted material, do these steps to prepare the airplane mating surface:  
(a) Remove the corrosion or unwanted material from the airplane mating surface. To remove the corrosion or unwanted material, do this task: Removal and Control of Corrosion for Aluminum and Aluminum Alloys, TASK 51-21-31-350-801  
(b) Apply a layer of alodine coating to the airplane mating surface. To apply the coating, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802

SUBTASK 34-53-01-420-001

- (4) Install the ATC antenna:  
(a) Remove the protective cover from the antennas electrical connector.  
(b) Install the o-ring [2] on the ATC antenna [3].  
(c) Apply sealant, A00247, to the threads of the bolts [4].  
(d) Examine the coaxial connector [1] for bent or broken pins, dirt, and damage.  
(e) Connect the coaxial cable connector [1] to the ATC antenna [3].  
(f) Put the ATC antenna [3]in the correct position on the airplane surface.  
(g) Install three of the four bolts [4].

SUBTASK 34-53-01-760-001

- (5) Measure the resistance between the ATC antenna baseplate and the airplane skin with an intrinsically safe approved bonding meter, COM-1550 .

**NOTE:** Use the empty bolt hole to get access to the antenna baseplate.

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



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SUBTASK 34-53-01-420-002

- (6) Install the last bolt [4].

SUBTASK 34-53-01-390-002

- (7) Apply aerodynamic sealant:

- (a) Apply an aerodynamic fillet seal around the base of the antenna [3] with sealant, A00247 (TASK 51-31-00-390-806).

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-043).

SUBTASK 34-53-01-860-003

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

**F. ATC Antenna Test**

SUBTASK 34-53-01-860-004

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

SUBTASK 34-53-01-420-003

- (2) Do these steps to do a test of the ATC antennas:

- (a) Set the transponder select switch on the ATC control panel to the left (No. 1) position.

**AKS 001-023; AIRPLANES WITH TRA-67A TRANSPONDER**

- (b) Push and hold the TEST button on the front panel of the left (No. 1) ATC transponder.

- 1) If the green TPR light comes on, then the BITE test passed.

**AKS 001-023**

- (c) Release the TEST button.

**AKS 024-999**

- (d) Push and release the TEST button on the front panel of the left (No. 1) ATC transponder.

NOTE: The PUSH TO TEST button must be pushed for 1.5 seconds

- 1) If the green XPDR P/F light comes on, then the BITE test passed.

**AKS ALL**

- (e) Set the transponder select switch on the ATC control panel to the right (No. 2) position.

**AKS 001-023; AIRPLANES WITH TRA-67A TRANSPONDER**

- (f) Push and hold the TEST button on the front panel of the right (No. 2) ATC transponder.

- 1) If the green TPR light comes on, then the BITE Test passed.

**AKS 001-023**

- (g) Release the TEST button.



**34-53-01**



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**AKS 024-999**

- (h) Push and release the TEST button on the front panel of the right (No. 2) ATC transponder.

NOTE: The PUSH TO TEST button must be pressed for 1.5 seconds.

- 1) If the green XPNR P/F light comes on, then the BITE Test passed.

**AKS ALL**

SUBTASK 34-53-01-860-006

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

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-53-01**



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AIR TRAFFIC CONTROL (ATC) TRANSPONDER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the ATC transponder
  - (2) An installation of the ATC transponder.
- B. The two ATC transponders are installed in the main equipment center on the E1 rack. The left ATC transponder (No. 1), M163, is installed on shelf No. 2 and the right ATC transponder (No. 2), M381, is installed on shelf No. 5.

**TASK 34-53-02-020-801**

**2. ATC Transponder Removal**

(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**C. Access Panels**

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

**D. Removal Procedure**

SUBTASK 34-53-02-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2

SUBTASK 34-53-02-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

SUBTASK 34-53-02-020-001

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

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

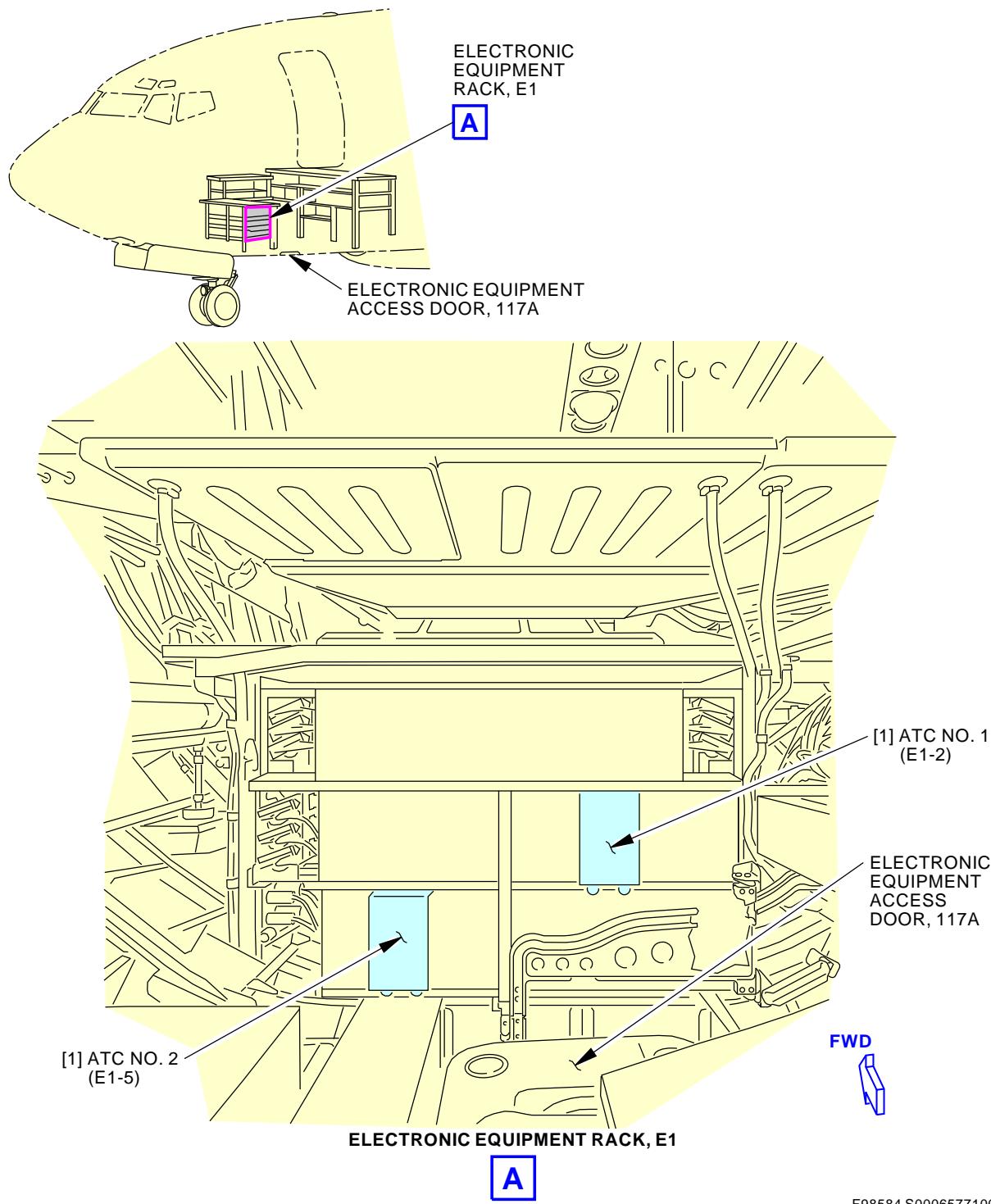
———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-53-02**



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**ATC Transponder Installation**  
Figure 401/34-53-02-990-801

EFFECTIVITY  
AKS ALL

**34-53-02**

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**TASK 34-53-02-400-801**

**3. ATC Transponder Installation**

(Figure 401)

**A. References**

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

**B. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right

**C. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**D. Installation procedure**

SUBTASK 34-53-02-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2

SUBTASK 34-53-02-420-001

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

- (2) To install the ATC transponder, do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 34-53-02-860-003

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2

**E. Installation Test**

SUBTASK 34-53-02-860-004

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

EFFECTIVITY
AKS ALL



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SUBTASK 34-53-02-740-001

**(2) Do the installation test:**

- (a) Rotate the Mode Select Switch to XPNDR on the ATC control panel.
- (b) Set the transponder select switch on the ATC control panel to the 1 position.

**AKS 001-023**

- (c) Push and hold the TEST switch on the left ATC transponder.
  - 1) Make sure that all LEDs come on red for 2 seconds, then the LRU STATUS comes on green. The other LEDs remain red for 2 seconds, then go out for 2 seconds.

**AKS 024-999**

- (d) Push and release the TEST switch on the left ATC transponder.

NOTE: The PUSH TO TEST switch needs to be held for 1.5 seconds.

- 1) Make sure that all LEDs come on red for 2 seconds, then the LRU STATUS comes on green. The other LEDs remain red for 2 seconds, then go out for 2 seconds.

**AKS 001-023**

- (e) Release the TEST switch on the left ATC transponder.

**AKS ALL**

- (f) Set the transponder select switch on the ATC control panel to the 2 position.

**AKS 001-023**

- (g) Push and hold the TEST switch on the right ATC transponder.
  - 1) Make sure that all LEDs come on red for 2 seconds, then the LRU STATUS comes on green. The other LEDs remain red for 2 seconds, then go out for 2 seconds.

**AKS 024-999**

- (h) Push and release the TEST switch on the right ATC transponder.

NOTE: The PUSH TO TEST switch needs to be held for 1.5 seconds.

- 1) Make sure that all LEDs come on red for 2 seconds, then the LRU STATUS comes on green. The other LEDs remain red for 2 seconds, then go out for 2 seconds.

**AKS 001-023**

- (i) Release the TEST switch on the right ATC transponder.

**AKS ALL**

SUBTASK 34-53-02-410-001

**(3) Close this access panel:**

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-53-02-860-005

**(4) If electrical power is not necessary, do this task: Remove Electrical Power,  
TASK 24-22-00-860-812**

———— END OF TASK ————

EFFECTIVITY  
**AKS ALL**

**34-53-02**



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ATC CONTROL PANEL - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the air traffic control (ATC) control panel
  - (2) An installation of the ATC control panel.
- B. The ATC control panel is on the aft aisle stand panel, P8, in the flight compartment.

**TASK 34-53-03-000-801**

**2. ATC Control Panel Removal**

(Figure 401)

**A. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ATC CONTROL PANEL	34-53-03-03-070	AKS ALL

**B. Location Zones**

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

**C. Removal Procedure**

SUBTASK 34-53-03-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2

SUBTASK 34-53-03-020-001

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

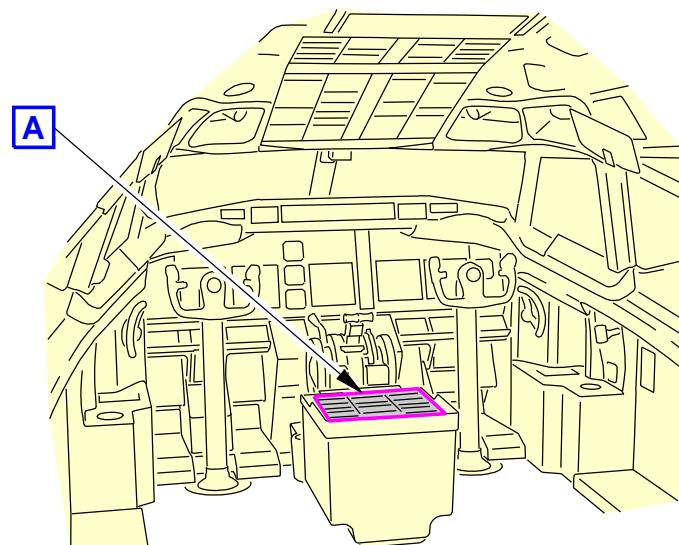
- (2) Remove the ATC CONTROL PANEL [1]:

- (a) Turn the four quarter-turn fasteners [2] to release the ATC CONTROL PANEL [1] from the aisle stand.
- (b) Lift the ATC CONTROL PANEL [1] to get access to the electrical connectors [3].
- (c) Disconnect the electrical connectors [3].
- (d) Put protective covers on the electrical connectors [3].

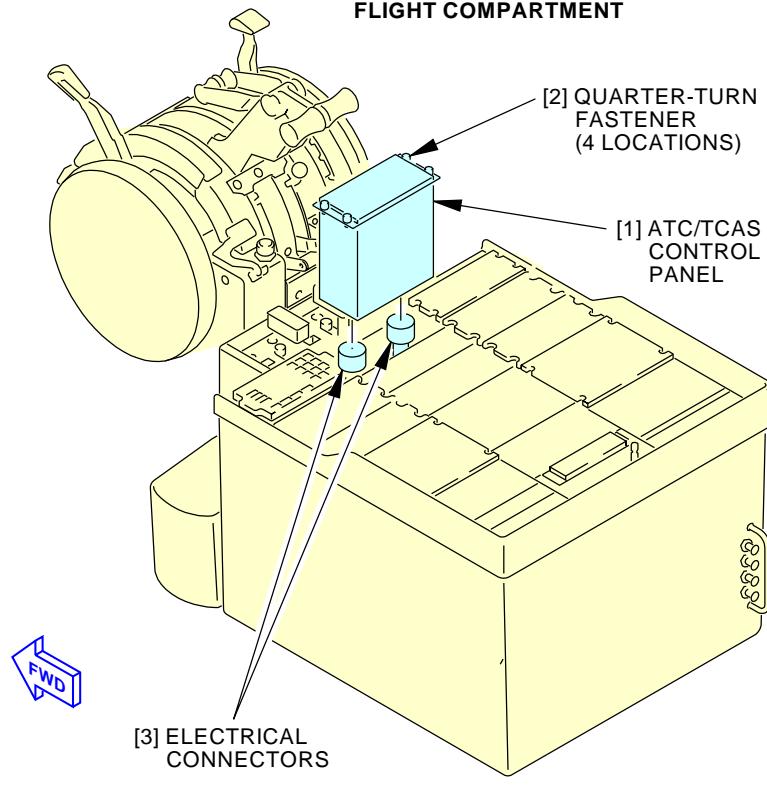
———— END OF TASK ————

EFFECTIVITY	AKS ALL
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**34-53-03**



FLIGHT COMPARTMENT

AISLE STAND  
(EXAMPLE)

A

H54136 S0006577105\_V3

**ATC/TCAS Control Panel Installation**  
**Figure 401/34-53-03-990-801**EFFECTIVITY  
AKS ALL**34-53-03**

D633A101-AKS



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TASK 34-53-03-400-801

3. ATC Control Panel Installation

A. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
31-11-91	AFT ELECTRONIC PANEL
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ATC CONTROL PANEL	34-53-03-03-070	AKS ALL

C. Location Zones

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

D. Installation Procedure

SUBTASK 34-53-03-760-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2

SUBTASK 34-53-03-420-001

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

- (2) Install the ATC CONTROL PANEL [1]:

- Remove the protective covers from the electrical connectors [3].
- Examine the electrical connectors [3] for bent or broken pins, dirt, and damage.
- Connect the electrical connectors [3].
- Put the ATC CONTROL PANEL [1] into its position in the aisle stand.

**NOTE:** Refer to AFT ELECTRONIC PANEL, SUBJECT 31-11-91 for exact panel location.

- Turn the quarter-turn fasteners [2] that attach the ATC CONTROL PANEL [1].



**34-53-03**



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SUBTASK 34-53-03-760-002

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2

**E. Installation Test**

SUBTASK 34-53-03-860-002

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

SUBTASK 34-53-03-860-003

- (2) For ATC, do the following installation test:

- (a) Set the transponder select switch on the ATC control panel to the 1 position.

**AKS 001-023**

- (b) Push and hold the TEST switch on the left ATC transponder.

- 1) Make sure the self-test passes and no faults are detected.

**AKS 024-999**

- (c) Push and release the PUSH TO TEST switch on the left ATC transponder.

NOTE: The PUSH TO TEST switch needs to be held for 1.5 seconds

- 1) Make sure the self-test passes and no faults are detected.

**AKS 001-023**

- (d) Release the TEST switch on the left ATC transponder.

**AKS ALL**

- (e) Set the transponder select switch on the ATC control panel to the 2 position.

**AKS 001-023**

- (f) Push and hold the TEST switch on the right ATC transponder.

- 1) Make sure the self-test passes and no faults are detected.

**AKS 024-999**

- (g) Push and release the PUSH TO TEST switch on the right ATC transponder.

NOTE: The PUSH TO TEST switch needs to be held for 1.5 seconds.

- 1) Make sure the self-test passes and no faults are detected.

**AKS 001-023**

- (h) Release the TEST switch on the right ATC transponder.

**AKS ALL**

SUBTASK 34-53-03-860-005

- (3) For TCAS, do the following installation test:

EFFECTIVITY  
\_\_\_\_\_

AKS ALL

**34-53-03**



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- (a) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.
- (b) Wait until the align light on the MSU goes off.
- (c) On the ATC control panel, turn and release the mode select switch in the TEST position for one second.
- (d) Make sure you hear "TCAS system test okay" on the flight compartment speakers.

SUBTASK 34-53-03-860-004

- (4) If electrical power is not necessary, do this task: Remove Electrical Power, TASK 24-22-00-860-812.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-53-03**

D633A101-AKS

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AIR TRAFFIC CONTROL (ATC) ANTENNA SWITCH - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has two tasks. One is the removal of the ATC antenna switch, the other is the installation of the ATC antenna switch.
- B. The top and bottom ATC antenna switch, S00942 and S00943, installations are the same. The ATC antenna switches are installed left of the E1-5 shelf on the E1 rack.

**TASK 34-53-04-000-801**

**2. ATC Antenna Switch Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
118	Electrical and Electronics Compartment - Right

**B. Access Panels**

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

**C. Prepare for the Removal**

SUBTASK 34-53-04-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

SUBTASK 34-53-04-010-001

- (2) To get to the main equipment center, open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

**D. Procedure**

SUBTASK 34-53-04-020-001

- (1) Remove the ATC antenna switch [1]:
  - (a) Disconnect the electrical connectors [4] from the ATC antenna switch [1].
  - (b) Put protective covers on the electrical connectors [4].
  - (c) Remove the screws [2] and washers [3] that hold the ATC antenna switch [1] to the bracket.
  - (d) Remove the ATC antenna switch [1] from the bracket.

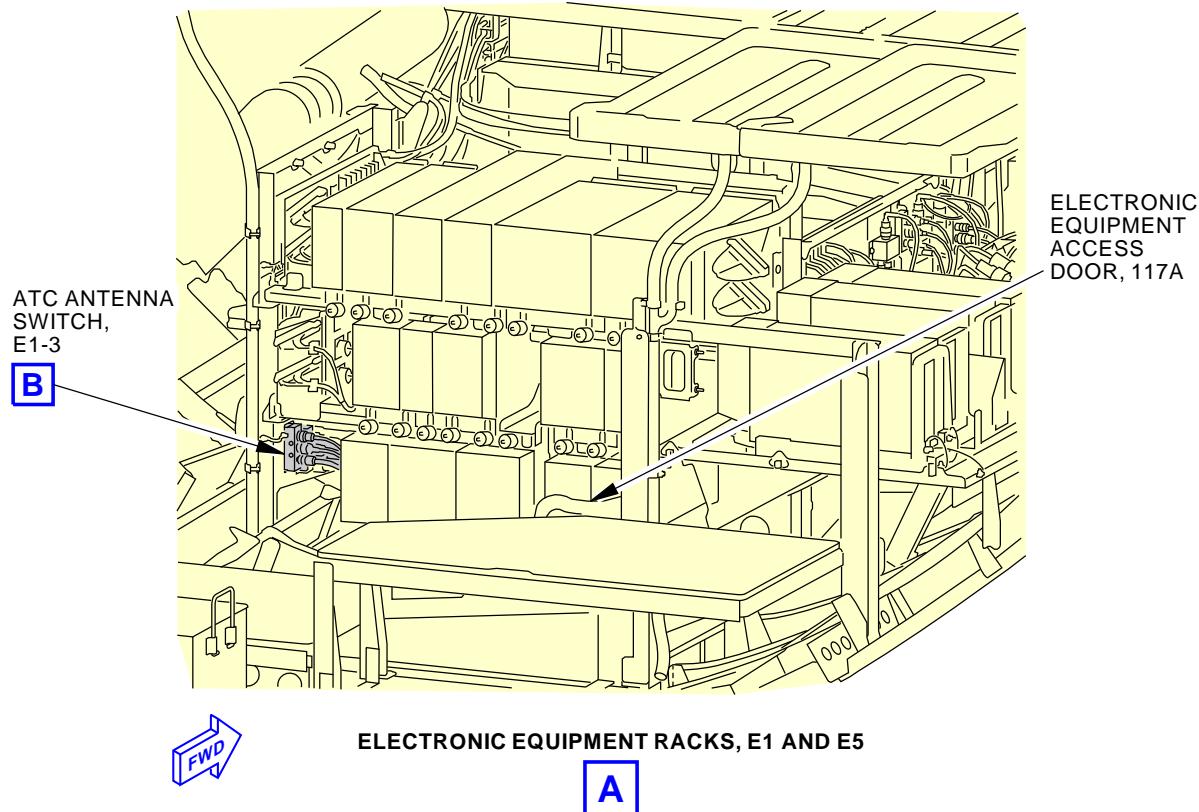
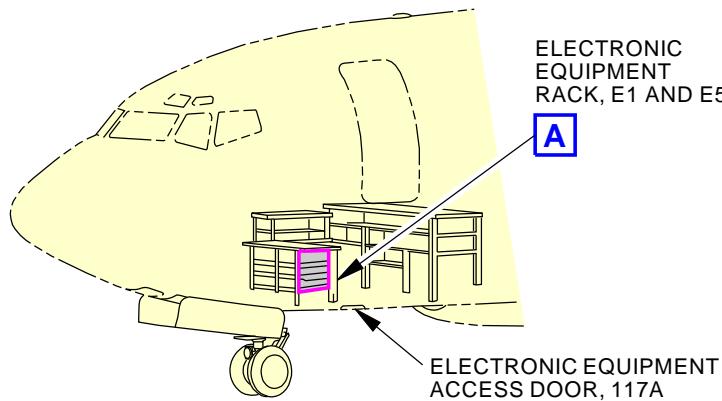
———— END OF TASK ————

EFFECTIVITY	AKS ALL
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G34342 S0006577110\_V2

**ATC Antenna Switch Installation**  
Figure 401/34-53-04-990-801 (Sheet 1 of 2)

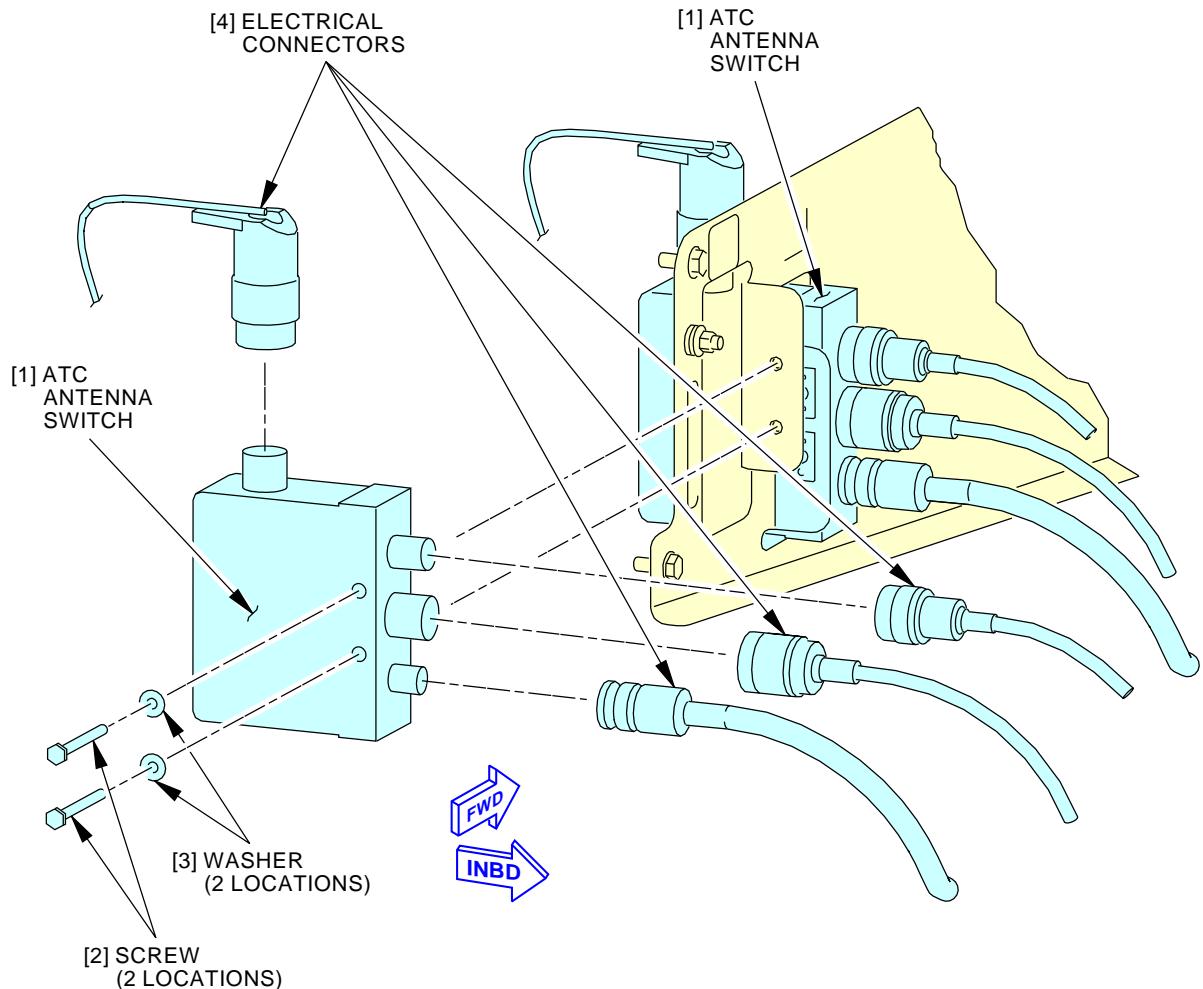
EFFECTIVITY  
AKS ALL

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**ATC ANTENNA SWITCH**
**B**

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**ATC Antenna Switch Installation  
Figure 401/34-53-04-990-801 (Sheet 2 of 2)**

EFFECTIVITY  
AKS ALL

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**TASK 34-53-04-400-801**

**3. ATC Antenna Switch Installation**

(Figure 401)

**A. References**

Reference	Title
20-10-34-120-801	Hand Clean Metal Surfaces with Abrasives (P/B 701)
20-40-11-760-801	Electrical Bonding (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17

**C. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Switch	34-53-04-10A-005	AKS ALL

**D. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**E. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**F. Prepare for the Installation**

SUBTASK 34-53-04-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

**G. Procedure**

SUBTASK 34-53-04-420-001

- (1) Install the ATC antenna switch [1]:



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- (a) Remove the protective covers from the electrical connectors [4].
- (b) Examine the electrical connectors [4] for bent or broken pins, dirt and damage.
- (c) Make sure the bracket for the ATC antenna switch [1] has no corrosion.
  - 1) If there is corrosion, clean the mating surfaces. To do this, do this task: Hand Clean Metal Surfaces with Abrasives, TASK 20-10-34-120-801.
- (d) Use the electrical bond fastener to install the ATC antenna switch [1] on the bracket. To do it, do this task: Electrical Bonding, TASK 20-40-11-760-801.
- (e) Put the switch [1] into position on the bracket.
- (f) Install the screws [2] and washers [3] that hold the ATC antenna switch [1] to the bracket.
- (g) Remove the protective covers from the electrical connectors [4].
- (h) Connect the electrical connectors [4] to the ATC antenna switch [1].

SUBTASK 34-53-04-760-001

- (2) Use the intrinsically safe approved bonding meter, COM-1550, and make sure the resistance from the ATC antenna switch [1] to the E2 rack is less than 0.001 ohm.

SUBTASK 34-53-04-410-001

- (3) Close this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-53-04-860-003

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	5	C00186	ATC 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
D	14	C00188	ATC 2
E	14	C01194	ATC ANT SWITCH

**H. Installation Test**

SUBTASK 34-53-04-860-004

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

SUBTASK 34-53-04-860-005

- (2) Do the installation test:

- (a) Set the transponder select switch on the ATC control panel to the 1 position.

**AKS 001-023**

- (b) Push and hold the TEST switch on the left ATC transponder.
    - 1) Make sure the self-test passes and no faults are detected.

**AKS 024-999**

- (c) Push and release the PUSH TO TEST switch on the left ATC transponder.

NOTE: The PUSH TO TEST switch needs to be held for 1.5 seconds.

- 1) Make sure the self-test passes and no faults are detected.

EFFECTIVITY	AKS ALL
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**AKS 001-023**

- (d) Release the TEST switch on the left ATC transponder.

**AKS ALL**

- (e) Set the transponder select switch on the ATC control panel to the 2 position.

**AKS 001-023**

- (f) Push and hold the TEST switch on the right ATC transponder.
- 1) Make sure the self-test passes and no faults are detected.

**AKS 024-999**

- (g) Push and release the PUSH TO TEST switch on the right ATC transponder.

NOTE: The PUSH TO TEST switch needs to be held for 1.5 seconds.

- 1) Make sure the self-test passes and no faults are detected.

**AKS 001-023**

- (h) Release the TEST switch on the right ATC transponder.

**AKS ALL**

**I. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-53-04-860-006

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

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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DME SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) DME System Deactivation
  - (2) DME System Activation

**TASK 34-55-00-040-801**

**2. DME System - Deactivation**

**A. General**

- (1) This procedure removes electrical power to the DME System.

NOTE: There are two DME antennas which are installed on the bottom centerline of the airplane fuselage.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-55-00-860-091

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

**D. DME System - Tryout**

NOTE: This tryout is to make sure the DME system is in zero energy state.

SUBTASK 34-55-00-860-092

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

EFFECTIVITY	AKS ALL
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SUBTASK 34-55-00-860-094

- (2) Make sure that display screens on DME-1 and DME-2 are not ON.

———— END OF TASK ——

**TASK 34-55-00-440-801**

**3. DME System - Activation**

**A. General**

- (1) This procedure adds electrical power to the DME system.

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

**WARNING:** KEEP ALL PERSONNEL AT A SAFE DISTANCE FROM THE ANTENNA. RF ENERGY CAN CAUSE INJURIES TO PERSONNEL.

SUBTASK 34-55-00-860-093

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	14	C00192	RADIO NAVIGATION DME 2

———— END OF TASK ——



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DME SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
- (1) An operational test of the distance measuring equipment (DME) system.
  - (2) A system test of the DME system.

**TASK 34-55-00-710-801**

**2. DME System - Operational Test**

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)

**B. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Access Panels**

Number	Name/Location
112A	Forward Access Door

**D. Prepare for the Operational Test**

SUBTASK 34-55-00-860-001

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

SUBTASK 34-55-00-860-002

- (2) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

SUBTASK 34-55-00-860-074

- (3) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-55-00-860-003

- (4) Set the display select switch on the captain's and first officer's EFIS control panels to the VOR position.

**E. DME Self Test**

SUBTASK 34-55-00-860-075

- (1) Make sure DME 1 and DME 2 are not tuned to a local station's frequency.

SUBTASK 34-55-00-740-002

- (2) Push and hold the TEST button on the captain's navigation control panel to start the DME 1 self test.
  - (a) Make sure the DME 2 shows dashes on the displays during the DME 1 self test.
  - (b) Make sure the DME 1 has a flag on the displays for approximately two seconds.
  - (c) Make sure the DME 1 shows dashes on the displays until the end of the test.



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SUBTASK 34-55-00-860-005

- (3) Release the TEST button on the captain's navigation control panel.

SUBTASK 34-55-00-860-046

- (4) To get access to the proximity switch electronics unit, open this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-55-00-860-006

**WARNING:** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Put SYS No. 1 in the Air Mode. Do this task:Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 34-55-00-730-002

- (6) Push and hold the TEST button on the captain's navigation control panel to start the DME 1 self test.  
(a) Make sure the self test sequence for DME 1 did not start.

SUBTASK 34-55-00-860-007

- (7) Release the TEST button on the captain's navigation control panel.

SUBTASK 34-55-00-860-008

- (8) Put SYS No. 1 in the Ground Mode. Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 34-55-00-730-003

- (9) Set the SOURCE switch on the instrument switching module to the ALL ON 2 position.

SUBTASK 34-55-00-730-004

- (10) Push and hold the TEST button on the first officer's navigation control panel to start the DME 2 self test.  
(a) Make sure the DME 1 shows dashes on the displays during the DME 2 self test.  
(b) Make sure the DME 2 has a flag on the displays for approximately two seconds.  
(c) Makes sure the DME 2 shows dashes on the displays until the end of the test.

SUBTASK 34-55-00-860-009

- (11) Release the TEST button on the first officer's navigation control panel.

SUBTASK 34-55-00-860-010

**WARNING:** MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (12) Put SYS No. 2 in the Air Mode. Do this task:Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 34-55-00-730-005

- (13) Push and hold the TEST button on the first officer's navigation control panel to start the DME 2 self test.

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AKS ALL

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- (a) Make sure the self test sequence for DME 2 did not start.

SUBTASK 34-55-00-860-011

- (14) Release the TEST button on the first officer's navigation control panel.

SUBTASK 34-55-00-860-012

- (15) Put SYS No. 2 in the Ground Mode. Do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 34-55-00-860-047

- (16) Close this access panel:

**Number      Name/Location**

112A      Forward Access Door

SUBTASK 34-55-00-860-013

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

———— END OF TASK ————

**TASK 34-55-00-730-801**

**3. DME System - System Test**

**A. General**

- (1) This task gives procedures for more than one DME test set. It is necessary to use only one of the DME test sets to do a test of the DME system.

**B. References**

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

**C. Tools/Equipment**

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

Reference	Description
COM-909	Test Set - DME Part #: IFR 6000 Supplier: 51190 Part #: TR-210 Supplier: 92606 Part #: TR-220 Supplier: 92606 Opt Part #: 600A-110 Supplier: 51190 Opt Part #: ATC-600A-2 Supplier: 51190 Opt Part #: T-24B Supplier: 92606 Opt Part #: T-48D Supplier: 92606 Opt Part #: TR-211 Supplier: 92606
COM-13614	Test Set - DME, T-24B Opt Part #: T-24B Supplier: 92606

**D. Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left



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(Continued)

**Zone      Area**

212      Flight Compartment - Right

**E. Prepare for the System Test**

SUBTASK 34-55-00-860-014

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

SUBTASK 34-55-00-860-015

- (2) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

SUBTASK 34-55-00-860-016

- (3) Set the SOURCE switch on the instrument switching module to the ALL ON 1 position.

**F. Operational Test**

SUBTASK 34-55-00-710-001

- (1) Do this task: DME System - Operational Test, TASK 34-55-00-710-801.

**G. No. 1 DME System Test (with the use of the test set, IFR 6000, TR-210, or TR-220)**

SUBTASK 34-55-00-860-023

- (1) Do these steps to prepare for the No. 1 DME system test:

**CAUTION:** DO NOT PUT THE TEST SET ANTENNA LESS THAN 15 INCHES (38 CM) FROM THE DME ANTENNA WITH THE TEST SET ON. YOU CAN CAUSE DAMAGE TO THE TEST SET.

- (a) Put the DME test set, COM-909, approximately 21 inches (53 cm) from the DME antenna.

**NOTE:** The test antenna should be approximately the same height as the airplane antenna.

- (b) Set the controls on the DME test set, COM-909, as follows:

**Table 501/34-55-00-993-801**

SWITCH NAME	SWITCH POSITION
PWR Switch	AC or BAT as appropriate
Mode Switch	DME
Velocity Select Switch	Range
Velocity HI/LO Switch	HI
Squitter Switch	SQTR
X/Y Switch	X

SUBTASK 34-55-00-860-024

- (2) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-55-00-860-076

- (3) Set an active VOR frequency of 109.00 MHz on the captain's and the first officer's navigation control panel.

- (a) Make sure the DME 1 shows dashes on the displays.

- (b) Make sure the DME 2 shows dashes on the displays.

EFFECTIVITY  
AKS ALL

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SUBTASK 34-55-00-730-016

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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A	14	C00192	RADIO NAVIGATION DME 2
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- (a) Make sure the DME 2 has a flag on the displays.

SUBTASK 34-55-00-860-025

- (5) Set a frequency of 108.00 MHz on the captain's navigation control panel.

SUBTASK 34-55-00-860-089

- (6) Set the X/Y switch on the DME test set, COM-909, to Y.

SUBTASK 34-55-00-730-017

- (7) Use the SLEW switch to set a distance of 6 miles on the DME test set, COM-909.

- (a) Make sure the DME 1 shows dashes on the displays.

SUBTASK 34-55-00-730-030

- (8) Set the X/Y switch on the DME test set, COM-909, to X.

- (a) Make sure the DME 1 shows  $6 \pm 0.5$  nmi on the displays

SUBTASK 34-55-00-860-027

- (9) Set the voice/range filter switch on one of the audio control panels to the B position.

SUBTASK 34-55-00-860-028

- (10) At the same audio control panel, push the receiver volume control for NAV-1 to set the volume to on.

SUBTASK 34-55-00-860-029

- (11) At the same audio control panel, turn the receiver volume control clockwise for NAV-1 to adjust the volume level.

SUBTASK 34-55-00-860-030

- (12) At all other audio control panels, push the receiver volume control for NAV-1 to set the volume to off.

SUBTASK 34-55-00-860-031

- (13) Push the receiver volume control for NAV-2 on all the audio control panels to set the volume to off.

SUBTASK 34-55-00-730-019

- (14) Use the switches on the DME test set, COM-909, to supply an identification tone.

- (a) Make sure you can hear a tone through the flight interphone system.

SUBTASK 34-55-00-860-032

- (15) Push the receiver volume control for NAV-1 on the audio control panels to set the volume to off.

SUBTASK 34-55-00-860-033

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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A	14	C00192	RADIO NAVIGATION DME 2
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EFFECTIVITY  
AKS ALL

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**H. No. 2 DME System Test (with the use of the test set, IFR 6000, TR-210, or TR-220)**

SUBTASK 34-55-00-860-034

- (1) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-55-00-860-077

- (2) Set an active VOR frequency of 109.00 MHz on the captain's and the first officer's navigation control panel.
- (a) Make sure the DME 1 shows dashes on the displays.
  - (b) Make sure the DME 2 shows dashes on the displays.

SUBTASK 34-55-00-860-078

- (3) Set a frequency of 109.00 MHz on the captain's navigation control panel.

SUBTASK 34-55-00-730-020

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

- (a) Make sure the DME 1 has a flag on the displays.

SUBTASK 34-55-00-860-036

- (5) Set a frequency of 108.00 MHz on the first officer's navigation control panel.

SUBTASK 34-55-00-860-090

- (6) Set the X/Y switch on the DME test set, COM-909, to Y.

SUBTASK 34-55-00-730-021

- (7) Use the SLEW switch to set a distance of 6 miles on the DME test set, COM-909.

- (a) Make sure the DME 2 shows dashes on the displays.

SUBTASK 34-55-00-730-031

- (8) Set the X/Y switch on the DME test set, COM-909, to X.

- (a) Make sure the DME 2 shows  $6 \pm 0.5$  nmi on the displays.

SUBTASK 34-55-00-860-038

- (9) Set the voice/range filter switch on one of the audio control panels to the B position.

SUBTASK 34-55-00-860-039

- (10) At the same audio control panel, push the receiver volume control for NAV-2 to set the volume to on.

SUBTASK 34-55-00-860-040

- (11) At the same audio control panel, turn the receiver volume control clockwise for NAV-2 to adjust the volume level.

SUBTASK 34-55-00-860-041

- (12) At all other audio control panels, push the receiver volume control for NAV-2 to set the volume to off.

SUBTASK 34-55-00-860-042

- (13) Push the receiver volume control for NAV-1 on all the audio control panels to set the volume to off.

SUBTASK 34-55-00-730-023

- (14) Use the switches on the DME test set, COM-909, to supply an identification tone.

EFFECTIVITY  
AKS ALL

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- (a) Make sure you can hear a tone through the flight interphone system.

SUBTASK 34-55-00-860-043

- (15) Push the receiver volume control for NAV-2 on the audio control panels to set the volume to off.

SUBTASK 34-55-00-860-044

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

SUBTASK 34-55-00-860-045

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

**I. No. 1 DME System Test (with the use of the test set, T-24B)**

SUBTASK 34-55-00-860-053

- (1) Do these steps to prepare for the No. 1 DME system test:

**CAUTION:** DO NOT PUT THE TEST SET ANTENNA LESS THAN 15 INCHES (38 CM) FROM THE DME ANTENNA WITH THE TEST SET ON. YOU CAN CAUSE DAMAGE TO THE TEST SET.

- (a) Put the T-24B DME test set, COM-13614, approximately 21 inches (53 cm) from the DME antenna.

NOTE: The test antenna should be approximately the same height as the airplane antenna.

- (b) Set the controls on the T-24B DME test set, COM-13614, as follows:

**Table 502/34-55-00-993-802**

<b>SWITCH NAME</b>	<b>SWITCH POSITION</b>
POWER	ON
IDENT	OFF
DIST/VEL	DIST
Squitter Switch	ON

SUBTASK 34-55-00-860-054

- (2) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-55-00-860-079

- (3) Set an active VOR frequency of 109.00 MHz on the captain's and the first officer's navigation control panel.

- (a) Make sure the DME 1 shows dashes on the displays.
- (b) Make sure the DME 2 shows dashes on the displays.

SUBTASK 34-55-00-730-024

- (4) Open this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

- (a) Make sure the DME 2 has a flag on the displays.

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SUBTASK 34-55-00-860-055

- (5) Set a frequency of 108.00 MHz on the captain's navigation control panel.

SUBTASK 34-55-00-730-025

- (6) Use the DISTANCE switch to set distance of 6 miles on the T-24B DME test set, COM-13614.  
(a) Make sure the DME 1 shows  $6 \pm 0.5$  nmi on the displays.

SUBTASK 34-55-00-860-056

- (7) Set the voice/range filter switch on one of the audio control panels to the B position.

SUBTASK 34-55-00-860-057

- (8) At the same audio control panel, push the receiver volume control for NAV-1 to set the volume to on.

SUBTASK 34-55-00-860-058

- (9) At the same audio control panel, turn the receiver volume control clockwise for NAV-1 to adjust the volume level.

SUBTASK 34-55-00-860-059

- (10) At all other audio control panels, push the receiver volume control for NAV-1 to set the volume to off.

SUBTASK 34-55-00-860-060

- (11) Push the receiver volume control for NAV-2 on all the audio control panels to set the volume to off.  
(12) Push the IDENT switch on the T-24B DME test set, COM-13614, to supply an identification tone.  
(a) Make sure you can hear a tone through the flight interphone system.

SUBTASK 34-55-00-860-061

- (13) Push the receiver volume control for NAV-1 on the audio control panels to set the volume to off.

SUBTASK 34-55-00-860-062

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

**J. No. 2 DME System Test (with the use of the test set, T-24B)**

SUBTASK 34-55-00-860-063

- (1) Set the SOURCE switch on the instrument switching module to the AUTO position.

SUBTASK 34-55-00-860-080

- (2) Set an active VOR frequency of 109.00 MHz on the captain's and the first officer's navigation control panel.  
(a) Make sure the DME 1 shows dashes on the displays.  
(b) Make sure the DME 2 shows dashes on the displays.



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SUBTASK 34-55-00-730-027

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

**CAPT Electrical System Panel, P18-1**

Row    Col    Number    Name

B	3	C00190	RADIO NAVIGATION DME 1
---	---	--------	------------------------

- (a) Make sure the DME 1 has a flag on the displays.

SUBTASK 34-55-00-860-065

- (4) Set a frequency of 108.00 MHz on the first officer's navigation control panel.

SUBTASK 34-55-00-730-028

- (5) Use the DISTANCE switch to set a distance of 6 miles on the T-24B DME test set, COM-13614.

- (a) Make sure the DME 2 shows  $6 \pm 0.5$  nmi on the displays.

SUBTASK 34-55-00-860-066

- (6) Set the voice/range filter switch on one of the audio control panels to the B position.

SUBTASK 34-55-00-860-067

- (7) At the same audio control panel, push the receiver volume control for NAV-2 to set the volume to on.

SUBTASK 34-55-00-860-068

- (8) At the same audio control panel, turn the receiver volume control clockwise for NAV-2 to adjust the volume level.

SUBTASK 34-55-00-860-069

- (9) At all other audio control panels, push the receiver volume control for NAV-2 to set the volume to off.

SUBTASK 34-55-00-860-070

- (10) Push the receiver volume control for NAV-1 on all the audio control panels to set the volume to off.

SUBTASK 34-55-00-730-029

- (11) Push the IDENT switch on the T-24B DME test set, COM-13614, to supply an identification tone.

- (a) Make sure you can hear a tone through the flight interphone system.

SUBTASK 34-55-00-860-071

- (12) Push the receiver volume control for NAV-2 on the audio control panels to set the volume to off.

SUBTASK 34-55-00-860-072

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

**CAPT Electrical System Panel, P18-1**

Row    Col    Number    Name

B	3	C00190	RADIO NAVIGATION DME 1
---	---	--------	------------------------

SUBTASK 34-55-00-860-073

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

———— END OF TASK ————

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DME ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the DME antenna
  - (2) An installation of the DME antenna.
- B. The two DME antennas are installed on the bottom centerline of the airplane fuselage.

**TASK 34-55-11-000-801**

**2. DME Antenna Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-55-11-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

SUBTASK 34-55-11-020-001

- (2) Remove the DME antenna [3]:
  - (a) Remove the bolts [4] from the antenna base.

**CAUTION:** LOWER THE ANTENNA ONLY AS FAR AS NECESSARY TO DISCONNECT THE COAXIAL CONNECTOR. DAMAGE TO THE CABLE CAN OCCUR IF YOU PULL THE CABLE.

- (b) Lower the DME antenna [3] until you can get access to the coaxial connector [1].
- (c) Disconnect the coaxial connector [1] from the DME antenna [3].
- (d) Remove the DME antenna [3].
- (e) Put a protective cover on the electrical connector.

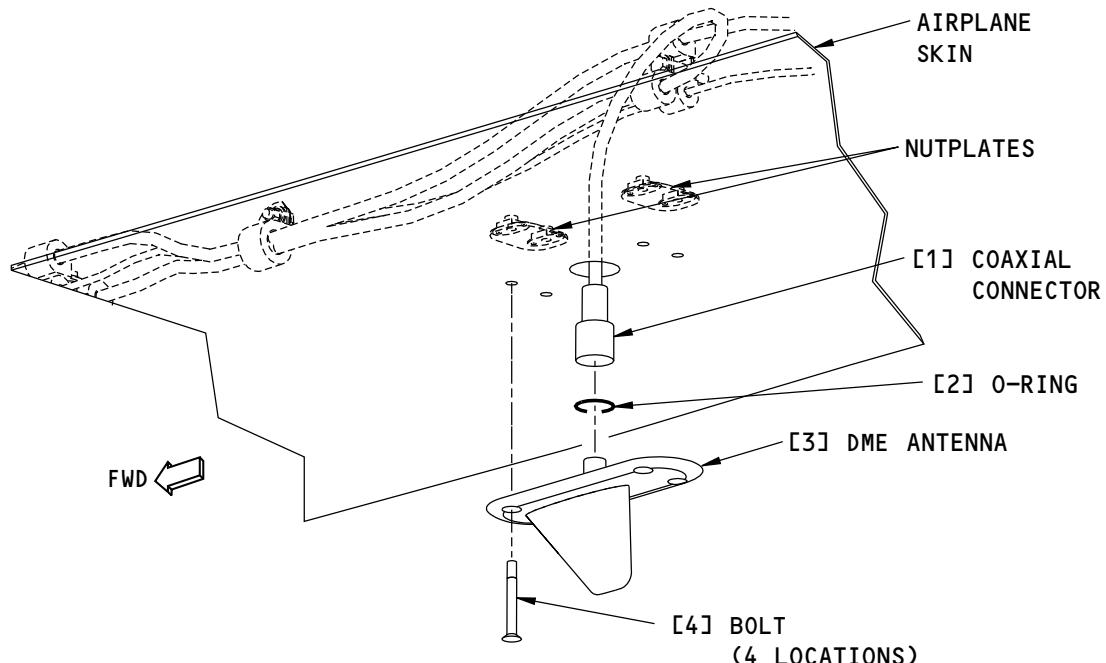
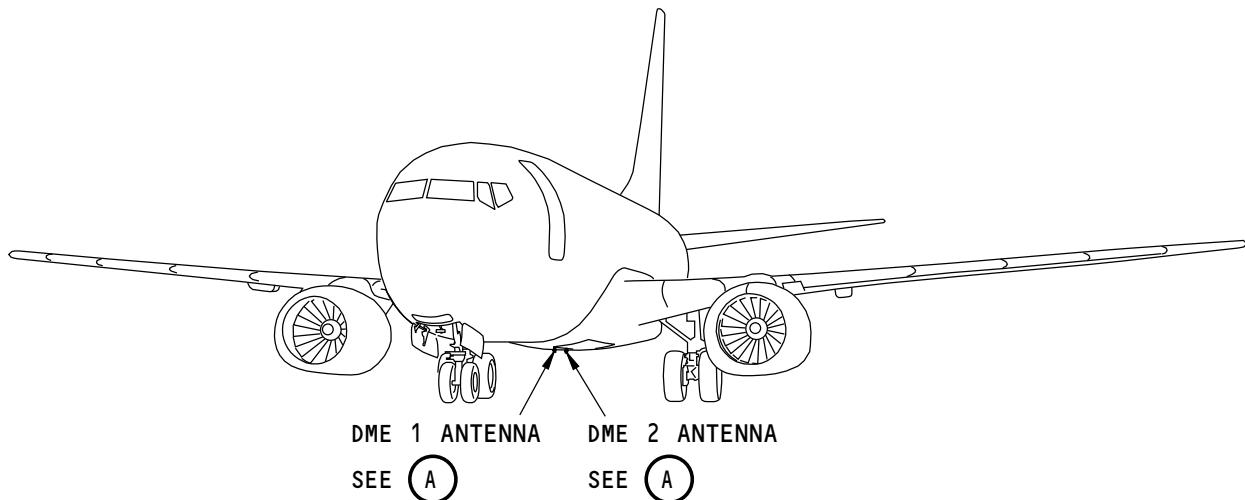
———— END OF TASK ————



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DME ANTENNA  
(REMOVED)



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DME Antenna Installation  
Figure 401/34-55-11-990-801



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**TASK 34-55-11-400-801**

**3. DME Antenna Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
51-21-00-160-801	Surface Preparation Of Aluminum Bonding Surfaces For Antenna Installations (P/B 701)
51-21-00-160-802	Surface Preparation Of Flame Sprayed Skin Panel Bonding Surfaces For Antenna Installations (P/B 701)
51-21-00-160-803	Surface Preparation Of Skin Panel With BMS 8-336 Expanded Aluminum Foil Bonding Surfaces For Antenna Installations (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-806	Aerodynamic Smoother Application (P/B 201)
SL 20-043	Deferred Application of Aero-Sealant in Antenna Installations

**B. Tools/Equipment**

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

Reference	Description
COM-909	Test Set - DME  Part #: IFR 6000 Supplier: 51190 Part #: TR-210 Supplier: 92606 Part #: TR-220 Supplier: 92606 Opt Part #: 600A-110 Supplier: 51190 Opt Part #: ATC-600A-2 Supplier: 51190 Opt Part #: T-24B Supplier: 92606 Opt Part #: T-48D Supplier: 92606 Opt Part #: TR-211 Supplier: 92606
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550).  Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17
COM-4114	Test Set - ATC-600A-2 ATC Transponder (Modes A & C)  Opt Part #: ATC-600A-2 Supplier: 51190

**C. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95

**D. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	Antenna	34-55-11-03-005	AKS ALL
		34-55-11-03-105	AKS ALL

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**E. Location Zones**

Zone	Area
123	Forward Cargo Compartment - Left
124	Forward Cargo Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**F. Installation Procedure**

SUBTASK 34-55-11-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	14	C00192	RADIO NAVIGATION DME 2

SUBTASK 34-55-11-110-001

- (2) Prepare the antenna surface per abrasive cleaning. To prepare the antenna surface, do this task: Surface Preparation Of Aluminum Bonding Surfaces For Antenna Installations, TASK 51-21-00-160-801.

SUBTASK 34-55-11-110-002

- (3) Apply a layer of Alodine 600 coating on antenna base. To apply the coating, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.

SUBTASK 34-55-11-110-005

**WARNING:** DO NOT GET SOLVENTS IN YOUR MOUTH, YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE DANGEROUS MATERIALS. SOLVENTS CAN BE FLAMMABLE OR CAUSE DAMAGE TO THE ENVIRONMENT. REFER TO THE MATERIAL SAFETY DATA SHEETS (MSDS) AND THE LOCAL SAFETY PRECAUTIONS.

- (4) For the airplane skin panel surface with the application of flame spray:

- (a) Prepare the flame sprayed skin panel surface per solvent cleaning. To prepare the flame sprayed skin panel surface, do this task: Surface Preparation Of Flame Sprayed Skin Panel Bonding Surfaces For Antenna Installations, TASK 51-21-00-160-802.

SUBTASK 34-55-11-110-006

- (5) For the airplane skin panel surface with the application of Expanded Aluminum Foil (EAF):

**CAUTION:** DO NOT ABRADE THE EXPANDED ALUMINUM FOIL (EAF) PANEL. IF YOU CAUSE DAMAGE TO THE EAF, THE ANTENNA WILL NOT ELECTRICALLY BOND WITH THE AIRPLANE SKIN.

- (a) Prepare the EAF skin panel surface per abrasive cleaning. To prepare the EAF skin panel surface, do this task: Surface Preparation Of Skin Panel With BMS 8-336 Expanded Aluminum Foil Bonding Surfaces For Antenna Installations, TASK 51-21-00-160-803.

SUBTASK 34-55-11-420-001

- (6) Install the DME antenna [3]:

- (a) Remove the protective cover from the electrical connector.

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- (b) Install the o-ring [2] on the antenna [3].
- (c) Apply sealant, A00247 to the threads of the bolts [4].
- (d) Examine the coaxial connector [1] for bent or broken pins, dirt, and damage.
- (e) Connect the coaxial connector [1] to the antenna [3].
- (f) Put the antenna [3] in the correct position on the airplane surface.
- (g) Install three of the four bolts [4].
- (h) Manually tighten the bolts [4] to 30 inch-lbs of torque ( 3.39 Newton-meters).

SUBTASK 34-55-11-760-001

- (7) Measure resistance between the interior countersunk hole of the DME antenna baseplate and the airplane skin panel surface just outside of the antenna base with a intrinsically safe approved bonding meter, COM-1550 .

NOTE: Use the empty hole to get access to the antenna baseplate.

NOTE: Use caution to assure that probe is as close as possible to antenna base of panel without touching antenna. Resistance is to be measured immediately following surface preparation and antenna installation

- (a) Make sure the resistance is less than 2.5 milliohms.

SUBTASK 34-55-11-420-002

- (8) Install the last bolt [4].
  - (a) Tighten this last bolt.

SUBTASK 34-55-11-390-001

- (9) Apply aerodynamic sealant:

- (a) Apply an aerodynamic fillet seal around the base of the antenna [3] with sealant, A00247 (TASK 51-31-00-390-806).

NOTE: Operators can defer the application of the aero-sealant in the antenna installation to avoid a flight delay (SL 20-043).

SUBTASK 34-55-11-860-006

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

**G. Installation Test**

SUBTASK 34-55-11-860-003

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

SUBTASK 34-55-11-860-005

- (2) Do these steps to prepare for the installation test:



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**CAUTION:** DO NOT PUT THE TEST SET LESS THAN 15 INCHES (38 CM) FROM THE DME ANTENNA WITH THE TEST SET ON. YOU CAN CAUSE DAMAGE TO THE TEST SET.

- (a) Put the DME test set approximately 21 inches (53 cm) from the DME antenna.

**NOTE:** The test antenna should be approximately the same height as the airplane antenna.

- (b) For the DME test DME test set, COM-909, put the switches in these positions:

**Table 401/34-55-11-993-801**

SWITCH NAME	SWITCH POSITION
POWER	ON
IDENT	OFF
DIST/VEL	DIST
Squitter Switch	ON

- (c) For the DME test ATC transponder test set, COM-4114, put the switches in these positions:

**Table 402/34-55-11-993-802**

SWITCH NAME	SWITCH POSITION
PWR Switch	AC or BAT as appropriate
Mode Switch	DME
Velocity Select Switch	Range
Velocity HI/LO Switch	HI
Squitter Switch	SQTR
X/Y Switch	X

- (d) Set the NAV switch on the instrument switching module to the NORMAL position.  
 (e) Set the SOURCE switch on the instrument switching module to the AUTO position.  
 (f) Set the display select switch on the captain's and the first officer's EFIS control panels to the VOR position.

**SUBTASK 34-55-11-710-001**

- (3) Do these steps to do a test of the No. 1 (captain's) DME antenna with the use of ATC transponder test set, COM-4114:
- (a) Set a frequency of 108.00 MHz on the captain's navigation control panel.  
 (b) Set a frequency of 109.00 MHz on the first officer's navigation control panel.  
 (c) Set the X/Y switch on the DME test ATC transponder test set, COM-4114, to Y.  
 (d) Use the SLEW switch to set the tester range (or distance) to 6 miles (or 10 miles, depending on your test set configuration) on the DME test ATC transponder test set, COM-4114.  
     1) Make sure the DME 1 shows dashes on the displays.  
 (e) Set the X/Y switch on the DME test ATC transponder test set, COM-4114, to X.  
     1) Make sure the DME 1 shows  $6 \pm 0.5$  nmi (or  $10 \pm 0.5$  nmi, depending on your tester settings) on the displays.

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SUBTASK 34-55-11-710-003

- (4) Do these steps to do a test of the No. 1 (captain's) DME antenna with the use of DME test set, COM-909:
- Set a frequency of 108.00 MHz on the captain's navigation control panel.
  - Set a frequency of 109.00 MHz on the first officer's navigation control panel.
  - Use the DISTANCE switch to set the tester range (or distance) to 6 miles (or 10 miles, depending on your test set configuration) on the DME test set, COM-909.
    - Make sure the DME 1 shows  $6 \pm 0.5$  nmi (or  $10 \pm 0.5$  nmi, depending on your tester settings) on the displays.

SUBTASK 34-55-11-710-002

- (5) Do these steps to do a test of the No. 2 (first officer's) DME antenna with the use of DME test ATC transponder test set, COM-4114:
- Set a frequency of 109.00 MHz on the captain's navigation control panel.
  - Set a frequency of 108.00 MHz on the first officer's navigation control panel.
  - Set the X/Y switch on the DME test ATC transponder test set, COM-4114, to Y.
  - Use the SLEW switch to set the tester range (or distance) to 6 miles (or 10 miles, depending on your test set configuration) on the DME test ATC transponder test set, COM-4114.
    - Make sure the DME 2 shows dashes on the displays.
  - Set the X/Y switch on the DME test ATC transponder test set, COM-4114, to X.
    - Make sure the DME 2 shows  $6 \pm 0.5$  nmi (or  $10 \pm 0.5$  nmi, depending on your tester settings) on the displays.

SUBTASK 34-55-11-710-004

- (6) Do these steps to do a test of the No. 2 (first officer's) DME antenna with the use of DME test set, COM-909:
- Set a frequency of 109.00 MHz on the captain's navigation control panel.
  - Set a frequency of 108.00 MHz on the first officer's navigation control panel.
  - Use the DISTANCE switch to set the tester range (or distance) to 6 miles (or 10 miles, depending on your test set configuration) on the DME test set, COM-909.
    - Make sure the DME 2 shows  $6 \pm 0.5$  nmi (or  $10 \pm 0.5$  nmi, depending on your tester settings) on the displays.

— END OF TASK —



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DME INTERROGATOR - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the distance measuring equipment (DME) interrogator.
  - (2) An installation of the DME interrogator.
- B. The two DME interrogators are in the main equipment center. The No. 1 DME interrogator is on the E1 electronic equipment rack, shelf No. 2. The No. 2 DME interrogator is on the E1 electronic equipment rack, shelf No. 5.

**TASK 34-55-21-000-801**

**2. DME Interrogator Removal**

(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Access Panels**

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

**D. Removal Procedure**

SUBTASK 34-55-21-860-001

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

SUBTASK 34-55-21-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

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SUBTASK 34-55-21-020-001

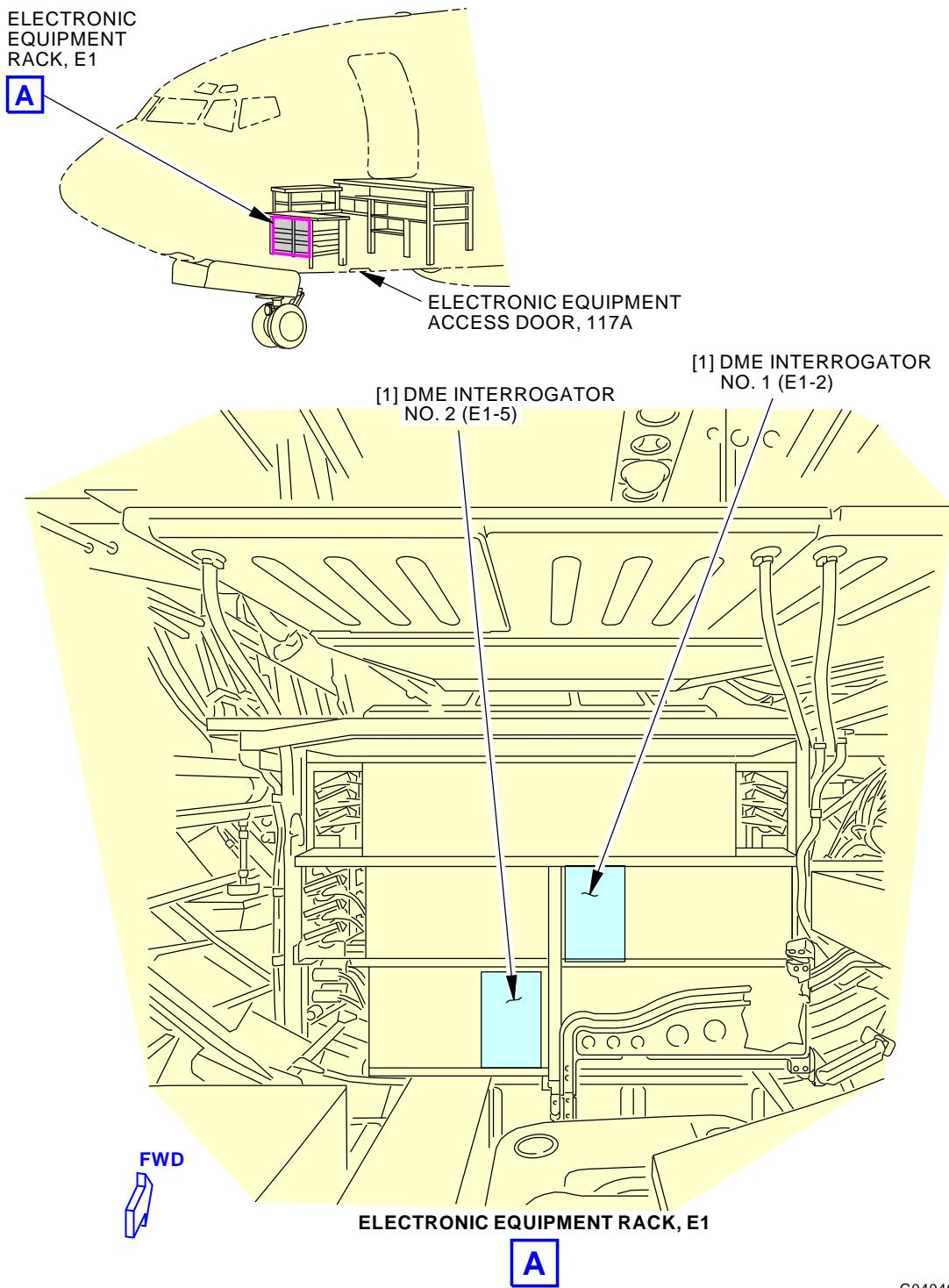
**CAUTION:** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE DME INTERROGATOR. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE DME INTERROGATOR.

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

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-55-21**



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**DME Interrogator Installation  
Figure 401/34-55-21-990-801**

 EFFECTIVITY  
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**34-55-21**

D633A101-AKS



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**TASK 34-55-21-400-801**

**3. DME Interrogator Installation**

(Figure 401)

**A. References**

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

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	INTERROGATOR	34-55-21-02-005	AKS ALL

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Installation Procedure**

SUBTASK 34-55-21-860-002

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	14	C00192	RADIO NAVIGATION DME 2

SUBTASK 34-55-21-420-001

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

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

SUBTASK 34-55-21-410-001

- (3) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door



**34-55-21**



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SUBTASK 34-55-21-860-003

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
B	3	C00190	RADIO NAVIGATION DME 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	14	C00192	RADIO NAVIGATION DME 2

**F. Installation Test**

SUBTASK 34-55-21-860-004

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

SUBTASK 34-55-21-860-005

- (2) Set the VHF NAV switch on the instrument switching module to the NORMAL position.

SUBTASK 34-55-21-860-007

- (3) Make sure DME 1 and DME 2 are not tuned to a local station's frequency.

SUBTASK 34-55-21-710-001

- (4) Do these steps to do a test of the No. 1 DME interrogator:

- Set the SOURCE switch on the instrument switching module to the AUTO position.
- Push the TEST button on the captain's navigation control panel to start the DME 1 self test.
- Make sure this sequence occurs on the captain's and the first officer's displays:  
NOTE: The DME 2 shows dashes on the displays during the DME 1 self test.
  - The DME 1 has a flag on the displays for approximately two seconds.
  - The DME 1 is dashes on the displays until the end of the test.

SUBTASK 34-55-21-710-002

- (5) Do these steps to do a test of the No. 2 DME interrogator:

- Set the SOURCE switch on the instrument switching module to the AUTO position.
- Push the TEST button on the first officer's navigation control panel to start the DME 2 self test.
- Make sure this sequence occurs on the captain's and the first officer's displays:  
NOTE: The DME 1 shows dashes on the displays during the DME 2 self test.
  - The DME 2 has a flag on the displays for approximately two seconds.
  - The DME 2 is dashes on the displays until the end of the test.

SUBTASK 34-55-21-860-008

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

———— END OF TASK ————



**34-55-21**



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AUTOMATIC DIRECTION FINDER SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Automatic Direction Finder (ADF) System Deactivation
  - (2) Automatic Direction Finder (ADF) System Activation

**TASK 34-57-00-040-801**

**2. Automatic Direction Finder System - Deactivation**

(Figure 34-57-03-990-801)

**A. General**

- (1) This procedure removes electrical power to the ADF system.

**B. References**

Reference	Title
34-57-03-990-801	Figure: ADF Receiver Installation (P/B 401)

**C. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Procedure**

SUBTASK 34-57-00-860-078

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 006-999	A	17	C01383 RADIO NAVIGATION ADF 2

**AKS ALL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 001-005	A	17	C01383 RADIO NAVIGATION ADF 2 (INOP)



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**AKS ALL**

**F. Automatic Direction Finder System - Tryout**

NOTE: This tryout is to make sure the ADF system is in a zero energy state.

SUBTASK 34-57-00-860-079

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 006-999	A	17	RADIO NAVIGATION ADF 2

**AKS ALL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 001-005	A	17	RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL**

SUBTASK 34-57-00-010-001

- (2) Open this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

SUBTASK 34-57-00-860-081

- (3) Make sure the lights on the front panel of the ADF receiver(s) are not illuminated.

SUBTASK 34-57-00-750-035

- (4) Push and release the applicable TEST switch on the ADF receiver(s) and make sure none of the lights on the front panel come on.

———— END OF TASK ————

**TASK 34-57-00-440-801**

**3. Automatic Direction Finder System - Activation**

(Figure 34-57-03-990-801)

**A. General**

- (1) This procedure adds electrical power to the ADF system.

**B. References**

<b>Reference</b>	<b>Title</b>
34-57-03-990-801	Figure: ADF Receiver Installation (P/B 401)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
118	Electrical and Electronics Compartment - Right



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(Continued)

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

**D. Access Panels**

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

**E. Procedure**

SUBTASK 34-57-00-860-080

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 006-999	A	17	C01383 RADIO NAVIGATION ADF 2

**AKS ALL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 001-005	A	17	C01383 RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL**

SUBTASK 34-57-00-410-001

- (2) Close this access panel:

**Number      Name/Location**

117A	Electronic Equipment Access Door
------	----------------------------------

———— END OF TASK ————



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AUTOMATIC DIRECTION FINDER SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. The system test is a full functional check of the ADF system and its interfaces.

**TASK 34-57-00-730-802**

**2. Automatic Direction Finder System - System Test**

**A. General**

- (1) Some of the tests need radio reception from local AM commercial broadcast stations or ADF beacon transmitting stations.

NOTE: ADF bearing checks on the ground, in hangars, or near other airplanes, metal buildings and equipment, etc. may show inaccurate bearings or weak signals.

**B. References**

Reference	Title
23-51-00-710-801	Flight Interphone System - Operational Test (P/B 501)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)

**C. Location Zones**

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

**D. Prepare for the Test**

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

**SUBTASK 34-57-00-840-005**

- (1) Do these steps to prepare for the test:
- Do this task: Supply Electrical Power, TASK 24-22-00-860-811.
  - Make sure the Flight Interphone System is on (TASK 23-51-00-710-801).
  - Make sure the Air Data Inertial Reference System is on (TASK 34-21-00-820-802 or TASK 34-21-00-820-801).
  - Open this circuit breaker and install safety tag:

**F/O Electrical System Panel, P6-1**

**Row Col Number Name**

**AKS 006-999**

A 17 C01383 RADIO NAVIGATION ADF 2



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AKS 006-999 (Continued)

(Continued)

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 001-005**

A      17      C01383      RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

- (e) Set the CDS switch on the P5 panel to the AUTO position.
- (f) On the captain's and first officer's EFIS control panels, set the VOR1/OFF/ADF1 switches to the ADF 1 position.
- (g) On the captain's and first officer's EFIS control panels, set the VOR2/OFF/ADF2 switches to the ADF 2 position.

**AKS ALL**

SUBTASK 34-57-00-860-055

- (2) For the audio select panels, do these steps:

- (a) Set the ADF 1 audio selector to the ON position.

NOTE: Make sure that the volume for the ADF 1 system is set to a comfortable level.

- (b) Set the volume controls for all other audio selects to the OFF position.

**AKS ALL; AIRPLANES WITH THE V/B/R SWITCH**

- (c) Set the VOICE/RANGE switch to the BOTH position.

**AKS ALL**

SUBTASK 34-57-00-860-058

- (3) On the ADF control panel, set the switches as follows:
  - (a) The ADF 1 mode switch to the ADF position.
  - (b) The ADF 2 mode switch to the ADF position.
  - (c) The TONE switch to the OFF position.

**E. ADF BITE Test**

SUBTASK 34-57-00-740-017

- (1) Do these steps to do a test of the ADF BITE:

- (a) On the ADF control panel, push and release the TEST switch on the ADF 1 mode switch.
  - (b) Open this circuit breaker and install safety tag:

**CAPT Electrical System Panel, P18-1**

Row   Col   Number   Name

A      4      C01382      RADIO NAVIGATION ADF 1

EFFECTIVITY  
AKS ALL

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

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 006-999**

A      17      C01383      RADIO NAVIGATION ADF 2

**AKS ALL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 001-005**

A      17      C01383      RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL**

- (d) On the ADF control panel, push and release the TEST switch on the ADF 2 mode switch.  
(e) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-1**

Row   Col   Number   Name

A      4      C01382      RADIO NAVIGATION ADF 1

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

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 006-999**

A      17      C01383      RADIO NAVIGATION ADF 2

**AKS ALL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 001-005**

A      17      C01383      RADIO NAVIGATION ADF 2 (INOP)

| **AKS 001-024**

**F. ADF SYSTEM SELF -TEST**

SUBTASK 34-57-00-740-019

- (1) To see the ADF test sequence, select VOR or APP on the EFIS control panel mode selector.
- To start the test, push the test switch on the ADF control panel mode selector knob.
  - During the first two seconds of the test, the receiver output goes to a fail condition. The pointer goes out of view and the amber ADF flag shows momentarily.
  - For the next two seconds, the receiver output goes to an NCD condition. During this time, the amber ADF flag goes out of view and the pointer stays out of view.
  - Next, the test display shows and the pointer goes to a test position of 135 degrees from the heading lubber line until the end of test.

NOTE: For a dual system, the test is the same for each ADF receiver.



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**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

**G. ADF-1 and ADF-2 System Test**

**AKS ALL**

SUBTASK 34-57-00-860-064

- (1) Set the ADF 1 frequency control on the ADF control panel to a local AM broadcast or NDB station.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-750-033

- (2) Do these steps to do a check of the ADF-1 system test:
  - (a) Make sure you hear a loud and clear ADF audio signal at all audio select locations.

**| AKS 001-024; AIRPLANES WITH THE PFD/ND DISPLAY FORMAT**

- (b) Make sure the ADF-1 pointers on the captain's and first officer's ND's show the same bearing.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

- (c) Make sure the ADF bearing accuracy is as follows:
  - 1) +/- 3 degrees at the quadrantal areas (45 degree, 135 degree, 225 degree and 315 degree)
  - 2) +/- 2 degrees at the areas different than quadrantal areas.

**| AKS 001-024; AIRPLANES WITH THE PFD/ND DISPLAY FORMAT**

- (d) Make sure the ADF L frequencies which show on the bottom left corner of the captain's and first officer's ND's are the same as the frequency from the ADF control panel.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-860-066

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

**| AKS 001-024; AIRPLANES WITH THE PFD/ND DISPLAY FORMAT**

- (a) Make sure the yellow ADF flags show on the captain's and first officer's ND's.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-860-069

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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**AKS 006-999**

A	17	C01383	RADIO NAVIGATION ADF 2
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EFFECTIVITY  
AKS ALL

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AKS 006-999 (Continued)

(Continued)

**F/O Electrical System Panel, P6-1**

Row    Col    Number    Name

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row    Col    Number    Name

**AKS 001-005**

A      17      C01383      RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-860-070

**AKS ALL**

(5) For the audio select panels, do these steps:

(a) Set the ADF 2 audio selector to the ON position.

NOTE: Make sure that the volume for the ADF 2 system is set to a comfortable level.

(b) Set the volume controls for all other audio selects to the OFF position.

(c) Set the VOICE/RANGE switch to the BOTH position.

SUBTASK 34-57-00-860-071

(6) Set the ADF 2 frequency control on the ADF control panel to a local AM broadcast or NDB station.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-750-034

(7) Do these steps to do a check of the ADF-2 system:

(a) Make sure you hear a loud and clear ADF audio signal at all audio select locations.

**| AKS 001-024; AIRPLANES WITH THE PFD/ND DISPLAY FORMAT**

(b) Make sure the ADF-2 pointers on the captain's and first officer's ND's show the same bearing.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

(c) Make sure the ADF bearing accuracy is as follows:

1) +/- 3 degrees at the quadrantal areas (45 degree, 135 degree, 225 degree and 315 degree)

2) +/- 2 degrees at the areas different than quadrantal areas.

EFFECTIVITY  
AKS ALL

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**AKS 001-024; AIRPLANES WITH THE PFD/ND DISPLAY FORMAT**

- (d) Make sure the ADF R frequencies which show on the bottom right corner of the captain's and first officer's ND's are the same as the frequency from the ADF control panel.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-860-073

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

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 006-999**

A      17    C01383    RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 001-005**

A      17    C01383    RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

**AKS 001-024; AIRPLANES WITH THE PFD/ND DISPLAY FORMAT**

- (a) Make sure the yellow ADF flags show on the captain's and first officer's ND's.

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-860-074

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

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 006-999**

A      17    C01383    RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row   Col   Number   Name

**AKS 001-005**

A      17    C01383    RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

SUBTASK 34-57-00-860-075

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

**CAPT Electrical System Panel, P18-1**

Row   Col   Number   Name

A      4      C01382    RADIO NAVIGATION ADF 1



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AKS ALL

H. Put the Airplane Back to Its Usual Position

SUBTASK 34-57-00-860-076

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

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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AIRCRAFT MAINTENANCE MANUAL  
ADF ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
- (1) A removal of the automatic direction finder (ADF) antenna
  - (2) An installation of the ADF antenna.

**AKS ALL; AIRPLANES WITH DUAL ADF ANTENNAS**

- B. The left and right ADF antennas are installed on the top of the fuselage. The left ADF antenna is installed at station 694.00. The right ADF antenna is installed at station 727A+9.00.

**AKS ALL; AIRPLANES WITH ADF ANTENNA**

**TASK 34-57-01-000-801**

**2. ADF Antenna Removal**

(Figure 401)

**A. References**

<b>Reference</b>	<b>Title</b>
51-31-00-390-806	Aerodynamic Smoother Application (P/B 201)

**B. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF ANTENNA**

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(Continued)

Zone	Area
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

**D. Removal Procedure**

SUBTASK 34-57-01-860-001

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 006-999	A	17	RADIO NAVIGATION ADF 2
AKS ALL; AIRPLANES WITH ADF ANTENNA			

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 001-005	A	17	RADIO NAVIGATION ADF 2 (INOP)
AKS ALL; AIRPLANES WITH ADF ANTENNA			

SUBTASK 34-57-01-140-007

- (2) Remove the aerodynamic smoother from around the edge of the ADF ANTENNA [1] (TASK 51-31-00-390-806).

SUBTASK 34-57-01-020-001

- (3) Remove the ADF ANTENNA [1]:
  - Loosen the mounting bolts [4] and until they disengage from the airplane nutplates.

**CAUTION:** BE CAREFUL WHEN YOU USE THE SEALANT REMOVAL TOOL TO BREAK THE SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRPLANE SKIN, THE ANTENNA CABLE, OR THE ADF ANTENNA.

- Use force around the ADF ANTENNA [1] with the sealant removal tool, COM-2481 until the seal is fully broken.

**CAUTION:** LIFT THE ADF ANTENNA ONLY AS FAR AS NECESSARY TO DISCONNECT THE CABLE. DAMAGE TO THE ANTENNA CABLE CAN OCCUR IF YOU PULL THE CABLE.

- Lift the ADF ANTENNA [1] until you can get access to the connector [3].

- Disconnect the connector [3] from the ADF antenna [1].

**NOTE:** Do not let the connector [3] fall into the fuselage.

- Remove the ADF ANTENNA [1] and the o-ring [2].

- Put a protective cover on the connector [3].

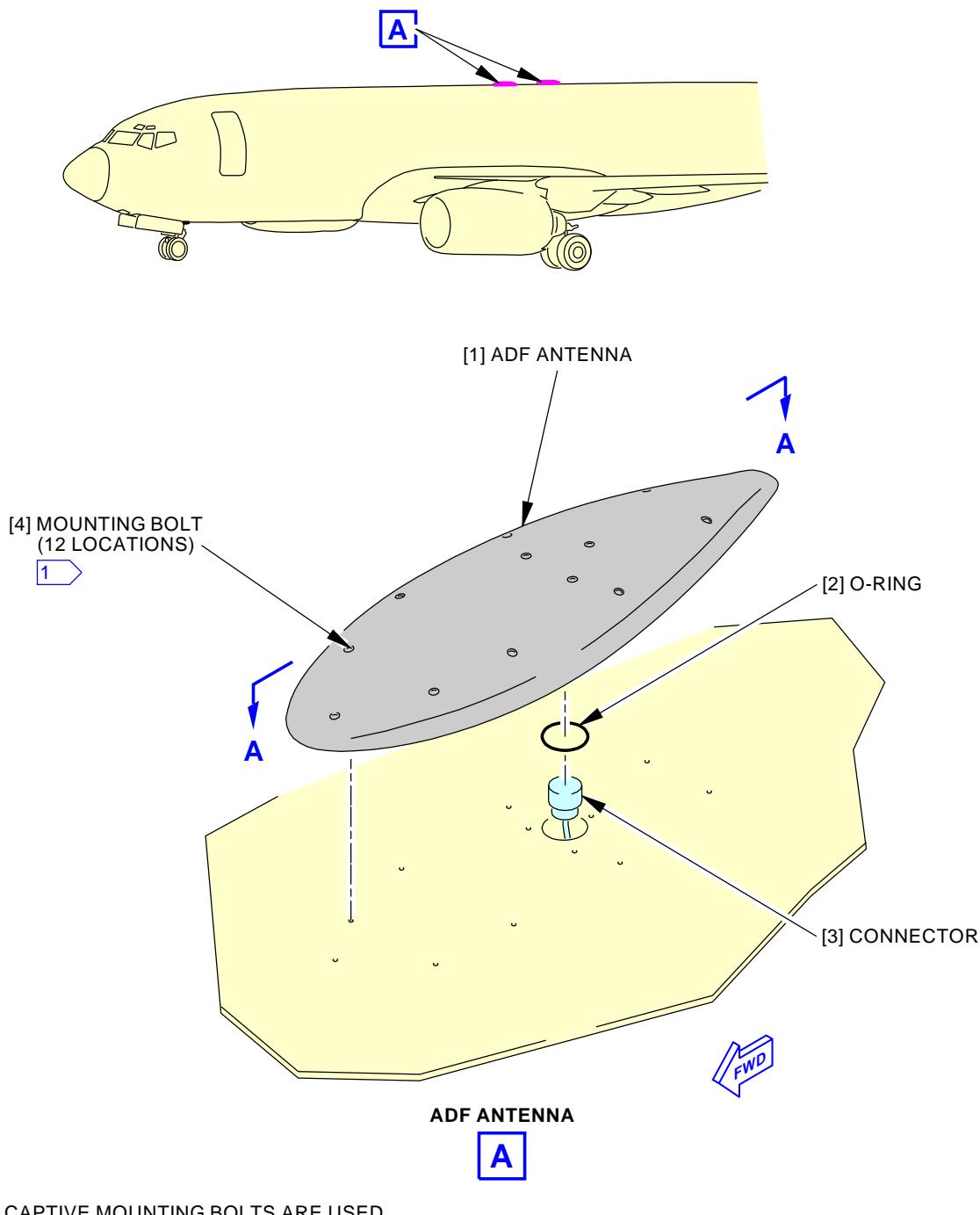
— END OF TASK —

EFFECTIVITY  
AKS ALL; AIRPLANES WITH ADF ANTENNA

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**1** CAPTIVE MOUNTING BOLTS ARE USED ON THE ANTENNA BASEPLATE

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**ADF Antenna Installation**  
**Figure 401/34-57-01-990-801 (Sheet 1 of 2)**

EFFECTIVITY  
AKS ALL

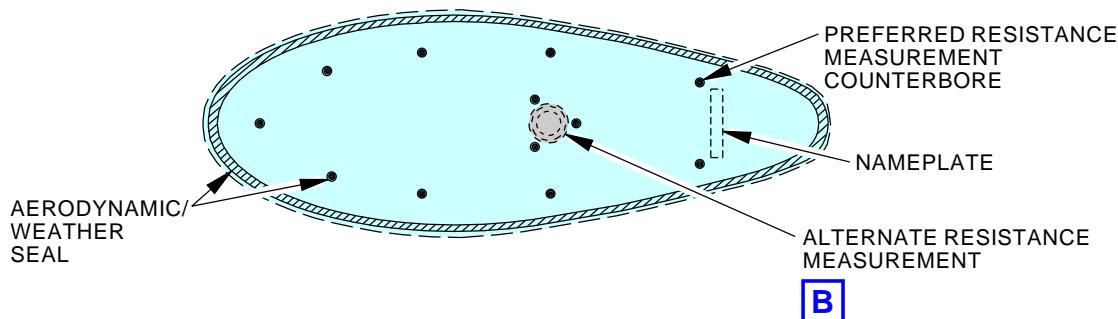
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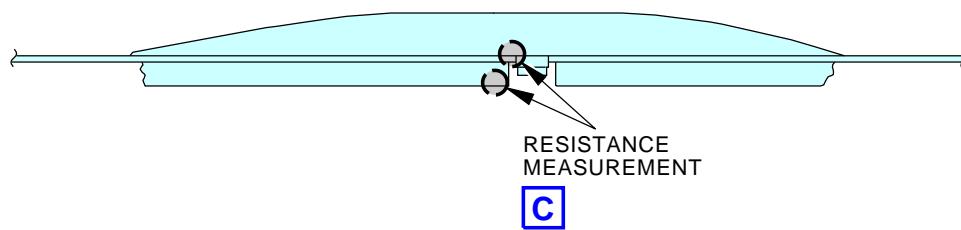
737-600/700/800/900  
AIRCRAFT MAINTENANCE MANUAL



AERODYNAMIC/WEATHERPROOFING SEALANT

(TOP VIEW)

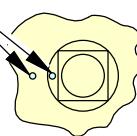
**A-A**



ALTERNATE RESISTANCE MEASUREMENT  
(SIDE VIEW)

**B**

RESISTANCE  
MEASUREMENT



RESISTANCE MEASUREMENT  
(BOTTOM VIEW)

**C**

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ADF Antenna Installation  
Figure 401/34-57-01-990-801 (Sheet 2 of 2)

EFFECTIVITY  
AKS ALL

**34-57-01**

D633A101-AKS

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**AIRCRAFT MAINTENANCE MANUAL**

**TASK 34-57-01-400-801**

**3. ADF Antenna Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
51-21-00-100-801	Airplane Surface Preparation for Application of Finish (P/B 701)
51-21-31-350-801	Removal and Control of Corrosion for Aluminum and Aluminum Alloys (P/B 701)
51-31-00-390-804	Fillet Seal Application (P/B 201)
51-31-00-390-805	Fastener Seal Application (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550).  Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

**C. Consumable Materials**

Reference	Description	Specification
A00230	Compound - Electrical Insulating Coating	BMS5-37
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
B00083	Solvent - VM&P Naphthas	ASTM D-3735 Type III
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
D00015	Grease - Aircraft Bearing (Use BMS 3-24 until existing stocks are depleted, BMS 3-33 supersedes BMS 3-24)	BMS3-24 (Superseded by BMS3-33)
G02497	Agent - Non-Peelable Parting (Henkel Loctite - Frekote 700-NC Mold Release)	BAC5000
G50313	Agent - Non-Peelable Parting (Henkel Loctite - Frekote 710-NC Mold Release)	BAC5000

**D. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	ANTENNA	34-57-01-03-015	AKS ALL

EFFECTIVITY  
AKS ALL; AIRPLANES WITH ADF ANTENNA

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**E. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

**F. Installation Procedure**

SUBTASK 34-57-01-860-020

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
AKS 006-999	A	17	C01383 RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH ADF ANTENNA**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
AKS 001-005	A	17	C01383 RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH ADF ANTENNA**

SUBTASK 34-57-01-110-001

- (2) Clean the airplane skin (TASK 51-21-00-100-801):

- Remove the old sealant from the airplane skin in the ADF ANTENNA [1] area.
- Clean the mating surface with solvent, B00083.

SUBTASK 34-57-01-620-001

- (3) If the airplane skin has corrosion or other damage, do these steps:

- To remove the corrosion, do this task: Removal and Control of Corrosion for Aluminum and Aluminum Alloys, TASK 51-21-31-350-801.
- Apply a layer of coating, C00064, on the airplane skin in the area where the ADF ANTENNA [1] touches the skin.

SUBTASK 34-57-01-420-001

- (4) Install the ADF ANTENNA [1]:

- Apply a thin layer of compound, A00230, to the antenna base.
- Apply the Frekote 700-NC non-peelable parting agent, G02497 or Frekote 710-NC non-peelable parting agent, G50313 to the antenna base.
- Apply a layer of grease, D00015, on the o-ring [2] and o-ring groove.
- Install the o-ring [2] on the ADF ANTENNA [1].
- Remove the protective cover from the electrical connector [3].
- Connect the electrical connector [3] to the ADF ANTENNA [1].

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF ANTENNA**

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- (g) Put the ADF ANTENNA [1] into position on the airplane surface.
- (h) Lightly tighten the mounting bolts [4] in a diagonal pattern to hold the ADF ANTENNA [1] in the correct position.

NOTE: Refer to the IPC for the bolt part number.

**CAUTION:** TIGHTEN THE BOLTS MANUALLY TO THE CORRECT TORQUE VALUE. USE OF POWER OR AIR TOOLS TO TIGHTEN THE SCREWS CAN CAUSE DAMAGE TO THE ADF SURFACE.

- (i) Manually tighten the mounting bolts [4] to 20-25 pound-inches (2.3-2.8 newton-meters) of torque.
- (j) Remove the unwanted compound, A00230, from around the edge of the ADF ANTENNA [1].

#### **G. Resistance Measurement (Preferred)**

SUBTASK 34-57-01-760-001

- (1) Do a check of the electrical continuity between the ADF ANTENNA [1] baseplate and the airplane skin:
  - (a) Loosen one mounting bolt [4] from the ADF ANTENNA [1].
  - (b) Connect the intrinsically safe approved bonding meter, COM-1550 between the bolt counterbore and the airplane skin.
    - 1) Make sure the measurement of continuity is 1 milliohm or less.
  - (c) If the resistance measurement caused damage, apply the sealant, A02315 or sealant, A00247, to the damaged area of the airplane skin.
  - (d) Manually, tighten the mounting bolt [4] to 20-25 pound-inches (2.3-2.8 newton-meters) of torque.

#### **H. Resistance Measurement (Alternate)**

SUBTASK 34-57-01-760-002

- (1) Do a check of the electrical continuity from the inside of the airplane between the ADF ANTENNA [1] baseplate and the airplane skin:
  - (a) Connect the intrinsically safe approved bonding meter, COM-1550 between the ADF ANTENNA [1] baseplate and the airplane skin.
    - 1) Make sure the measurement of continuity is 1 milliohm or less.
  - (b) If the resistance measurement caused damage, apply the sealant, A02315 or sealant, A00247, to the damaged area of the airplane skin.

#### **I. ADF Antenna Sealing**

SUBTASK 34-57-01-390-001

- (1) Fill the mounting bolt [4] counterbores with approximately 0.3 inches (7.6 mm) of cotton plug.

SUBTASK 34-57-01-390-002

- (2) Seal all the mounting bolts [4] with sealant, A02315 or sealant, A00247, until flush with the ADF ANTENNA [1] surface (TASK 51-31-00-390-805).

SUBTASK 34-57-01-390-003

- (3) Apply the sealant, A02315 or sealant, A00247, to seal around the ADF ANTENNA [1] (TASK 51-31-00-390-804).

EFFECTIVITY  
AKS ALL; AIRPLANES WITH ADF ANTENNA

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SUBTASK 34-57-01-390-004

- (4) Use the hardwood or plastic fillet smoothing spatula, STD-810 to make a smooth 45-degree bead.

SUBTASK 34-57-01-140-002

- (5) Remove unwanted sealant from the area around the ADF ANTENNA [1] base.

### J. ADF Antenna Installation Test

SUBTASK 34-57-01-860-003

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

SUBTASK 34-57-01-860-021

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

#### CAPT Electrical System Panel, P18-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

#### F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 006-999	A	17	RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH ADF ANTENNA**  
This circuit breaker is inoperative and should remain open:

#### F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 001-005	A	17	RADIO NAVIGATION ADF 2 (INOP)

#### AKS ALL; AIRPLANES WITH ADF ANTENNA

SUBTASK 34-57-01-860-005

- (3) On the ADF control panel, set the controls to these positions:
  - (a) The mode switch to the ADF position
  - (b) The frequency controls to a broadcast station between 190 and 1750 kHz.

#### AKS 001-024

SUBTASK 34-57-01-860-022

- (4) Make sure that the NDs show the correct bearing.

#### AKS ALL; AIRPLANES WITH ADF ANTENNA

### K. Put the Airplane Back to Its Usual Condition

SUBTASK 34-57-01-860-006

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

———— END OF TASK ————

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF ANTENNA**

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**ADF CONTROL PANEL - REMOVAL/INSTALLATION**

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the automatic direction finder (ADF) control panel
  - (2) An installation of the ADF control panel.
- B. The ADF control panel is installed on the aisle control stand, P8.

**TASK 34-57-02-000-801**

**2. ADF Control Panel Removal**

(Figure 401)

**A. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**B. Removal Procedure**

SUBTASK 34-57-02-860-004

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 006-999	A	17	C01383 RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH ADF CONTROL PANEL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 001-005	A	17	C01383 RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH ADF CONTROL PANEL**

SUBTASK 34-57-02-020-001

- (2) Loosen the quarter-turn fasteners [2] on the ADF control panel [1].

SUBTASK 34-57-02-020-002

- (3) Move the control panel out to get access to the electrical connector [3].

SUBTASK 34-57-02-020-003

- (4) Disconnect the electrical connector [3].

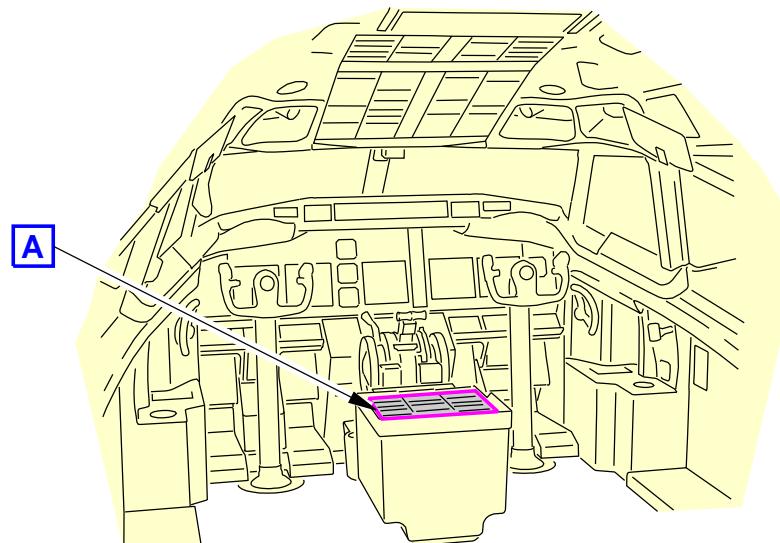
SUBTASK 34-57-02-020-004

- (5) Remove the ADF control panel [1].

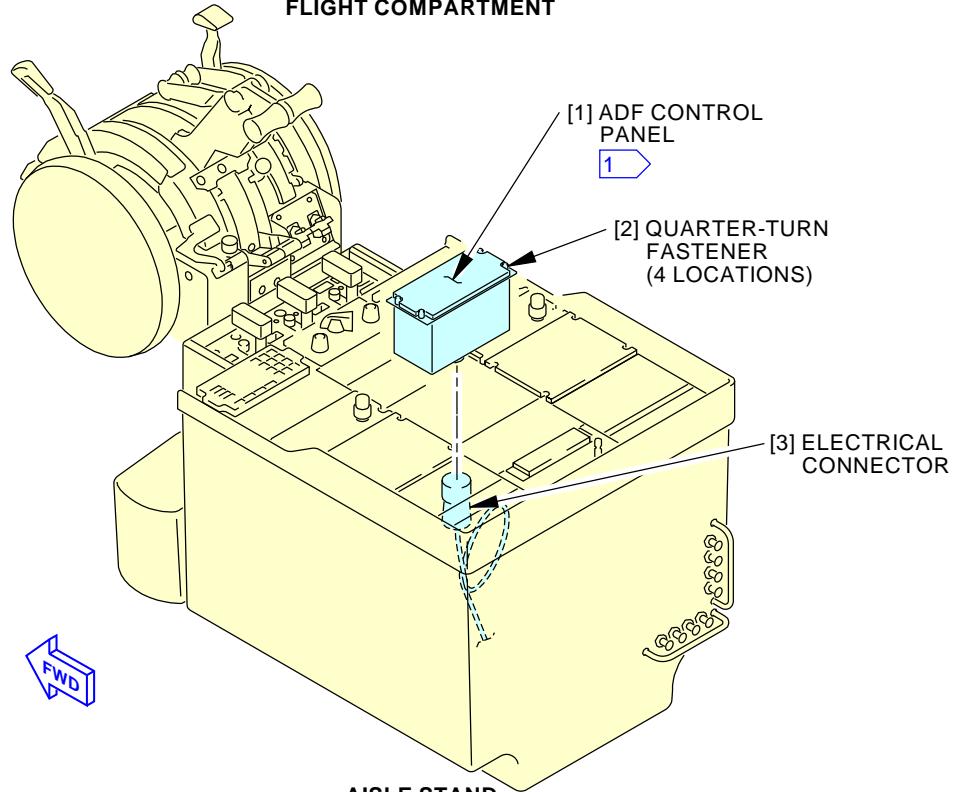
———— END OF TASK ————

EFFECTIVITY  
AKS ALL; AIRPLANES WITH ADF CONTROL PANEL

**34-57-02**



FLIGHT COMPARTMENT



1 THE LOCATION ON THE AISLE STAND CAN BE DIFFERENT FOR SOME AIRPLANES

AISLE STAND  
(EXAMPLE)

A

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**ADF Control Panel Installation**  
Figure 401/34-57-02-990-801

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AKS ALL

**34-57-02**

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**TASK 34-57-02-400-801**

**3. ADF Control Panel Installation**

(Figure 401)

**A. References**

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
31-11-91	AFT ELECTRONIC PANEL
34-57-00-730-802	Automatic Direction Finder System - System Test (P/B 501)

**B. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Panel	34-57-02-03P-025	AKS ALL

**C. Location Zones**

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

**D. Installation Procedure**

SUBTASK 34-57-02-860-005

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 006-999	A	17	C01383 RADIO NAVIGATION ADF 2
AKS ALL; AIRPLANES WITH ADF CONTROL PANEL			

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 001-005	A	17	C01383 RADIO NAVIGATION ADF 2 (INOP)
AKS ALL; AIRPLANES WITH ADF CONTROL PANEL			

SUBTASK 34-57-02-420-001

- (2) Connect the electrical connector [3] to the ADF control panel [1].

SUBTASK 34-57-02-420-002

- (3) Install the ADF control panel [1].

**NOTE:** Refer to AFT ELECTRONIC PANEL, SUBJECT 31-11-91 for exact panel location.

SUBTASK 34-57-02-420-003

- (4) Tighten the quarter-turn fasteners [2] on the ADF control panel [1].

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF CONTROL PANEL**

**34-57-02**



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SUBTASK 34-57-02-860-006

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 006-999			

A 17 C01383 RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH ADF CONTROL PANEL**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
AKS 001-005			

A 17 C01383 RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH ADF CONTROL PANEL**

**E. Installation Test**

SUBTASK 34-57-02-750-001

- (1) Make sure the panel lights are on.

SUBTASK 34-57-02-730-001

- (2) Do this task: Automatic Direction Finder System - System Test, TASK 34-57-00-730-802.

SUBTASK 34-57-02-860-016

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

———— END OF TASK ————

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF CONTROL PANEL**

**34-57-02**



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ADF RECEIVER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
- (1) A removal of the automatic direction finder (ADF) receiver
  - (2) An installation of the ADF receiver.

**AKS ALL**

- B. The ADF receivers are installed on the E3-1 rack in the main equipment center.

**AKS ALL; AIRPLANES WITH ADF RECEIVER**

**TASK 34-57-03-000-801**

**2. ADF Receiver Removal**

(Figure 401)

**A. References**

<b>Reference</b>	<b>Title</b>
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
118	Electrical and Electronics Compartment - Right

**C. Access Panels**

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

**D. Removal Procedure**

**SUBTASK 34-57-03-860-005**

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
AKS 006-999	A	17	C01383 RADIO NAVIGATION ADF 2
AKS ALL; AIRPLANES WITH ADF RECEIVER			

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
AKS 001-005	A	17	C01383 RADIO NAVIGATION ADF 2 (INOP)

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF RECEIVER**

**34-57-03**



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**AKS ALL; AIRPLANES WITH ADF RECEIVER**

SUBTASK 34-57-03-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number**      **Name/Location**

117A      Electronic Equipment Access Door

(TASK 06-41-00-800-801).

SUBTASK 34-57-03-020-002

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

- (3) Remove the applicable ADF RECEIVER [1]. To remove it, do this task: E/E Box Removal, TASK 20-10-07-000-801.

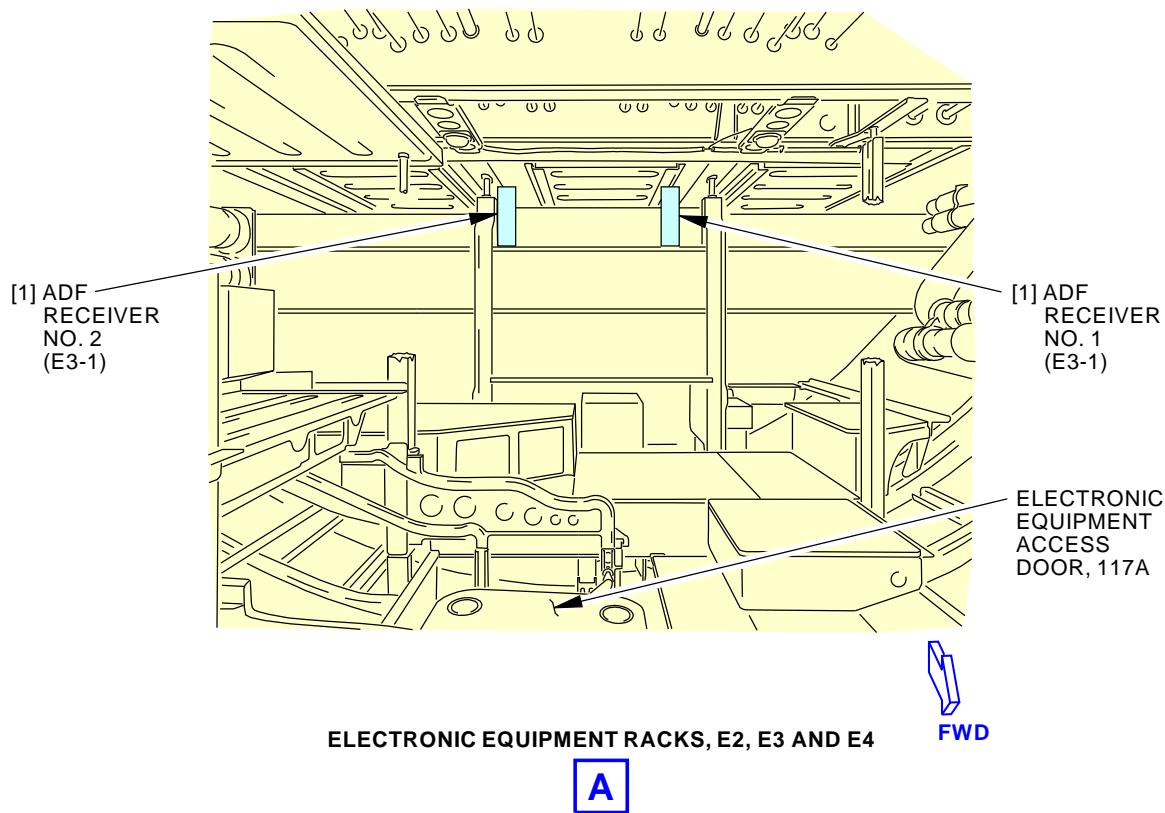
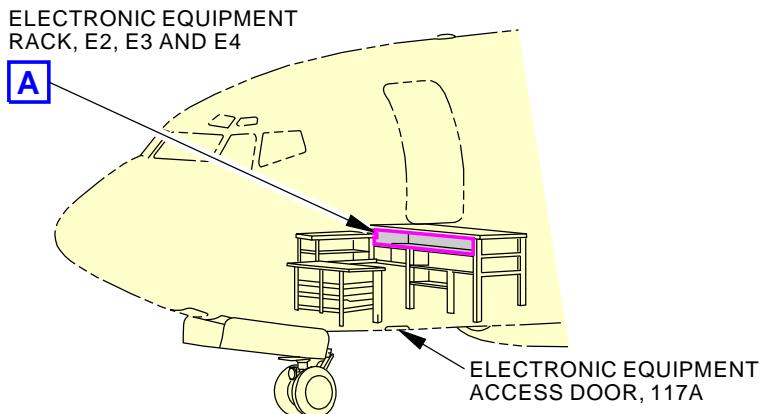
———— END OF TASK ————

EFFECTIVITY  
AKS ALL; AIRPLANES WITH ADF RECEIVER

**34-57-03**

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**ADF Receiver Installation**  
**Figure 401/34-57-03-990-801**

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH DUAL ADF RECEIVERS**

**34-57-03**

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TASK 34-57-03-400-801

3. ADF Receiver Installation

(Figure 401)

A. **References**

Reference	Title
06-41-00-800-801	Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201)
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	RECEIVER	34-57-03-02-010	AKS ALL

C. **Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

D. **Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

E. **Installation Procedure**

SUBTASK 34-57-03-860-006

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 006-999			
A	17	C01383	RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH ADF RECEIVER**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
AKS 001-005			
A	17	C01383	RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH ADF RECEIVER**

SUBTASK 34-57-03-420-004

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

- (2) Install the ADF RECEIVER [1]. To install it, do this task: E/E Box Installation, TASK 20-10-07-400-801.

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF RECEIVER**

**34-57-03**



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SUBTASK 34-57-03-410-001

- (3) Close this access panel:

Number    Name/Location

117A        Electronic Equipment Access Door  
(TASK 06-41-00-800-801).

SUBTASK 34-57-03-860-007

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	4	C01382	RADIO NAVIGATION ADF 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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**AKS 006-999**  
A        17    C01383    RADIO NAVIGATION ADF 2

**AKS ALL; AIRPLANES WITH ADF RECEIVER**

This circuit breaker is inoperative and should remain open:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
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**AKS 001-005**  
A        17    C01383    RADIO NAVIGATION ADF 2 (INOP)

**AKS ALL; AIRPLANES WITH ADF RECEIVER**

**F. ADF Receiver Installation Test**

SUBTASK 34-57-03-860-022

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

**AKS ALL**

SUBTASK 34-57-03-860-027

- (2) Set both ADF switches on the ADF control panel to ON.

**AKS ALL; AIRPLANES WITH COLLINS SERIES DUAL ADF RECEIVERS**

SUBTASK 34-57-03-860-010

- (3) Push and release the applicable TEST switch on the ADF receiver.

**AKS ALL**

SUBTASK 34-57-03-750-003

- (4) Make sure this sequence occurs on the ADF receiver:

- (a) For seconds 0-2: The LRU status and Control Fail LEDs come on RED.
- (b) For seconds 2-4: The LRU Status LED changes to GREEN and the Control Fail LED remains RED
- (c) For seconds 4-12: The LRU status and Control Fail LEDs go off

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF RECEIVER**

**34-57-03**



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**AKS ALL (Continued)**

- (d) For seconds 12-42: The test results show on the LED status indicators. The LRU status LED comes on GREEN if there are no LRU faults or RED if any faults occur. The Control Fail LED stays off if the ADF Control panel input signal is valid or comes on RED if there is no input from the ADF Control panel or if the input signal is invalid.

**AKS ALL; AIRPLANES WITH ADF RECEIVER**

SUBTASK 34-57-03-860-026

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

———— END OF TASK ————

EFFECTIVITY  
**AKS ALL; AIRPLANES WITH ADF RECEIVER**

**34-57-03**

D633A101-AKS



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GLOBAL POSITIONING SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure has these tasks:
- (1) Global Positioning System Deactivation
  - (2) Global Positioning System Activation

**TASK 34-58-00-040-801**

**2. Global Positioning System - Deactivation**

(Figure 201)

**A. General**

- (1) This procedure removes electrical power to the Global Positioning System.

**B. Location Zones**

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**C. Procedure**

SUBTASK 34-58-00-860-009

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	13	C01480	RADIO NAVIGATION MMR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

**D. Global Positioning System - Tryout**

NOTE: This tryout is to make sure the GPS is in a zero energy state.

SUBTASK 34-58-00-860-010

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1



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**F/O Electrical System Panel, P6-1**

**Row    Col    Number    Name**

A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	13	C01480	RADIO NAVIGATION MMR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

SUBTASK 34-58-00-710-005

- (2) Do these steps at the CDU:

- (a) Push the INIT REF key on the CDU.
- (b) Push the line select key (LSK) that is adjacent to <INDEX>.
- (c) Push the LSK that is adjacent to <POS.
- (d) Push the NEXT PAGE key on the CDU.
- (e) Make sure the GPS position does not show on the screen.

NOTE: Wait at least 5 minutes to make sure the position does not show on the CDU.

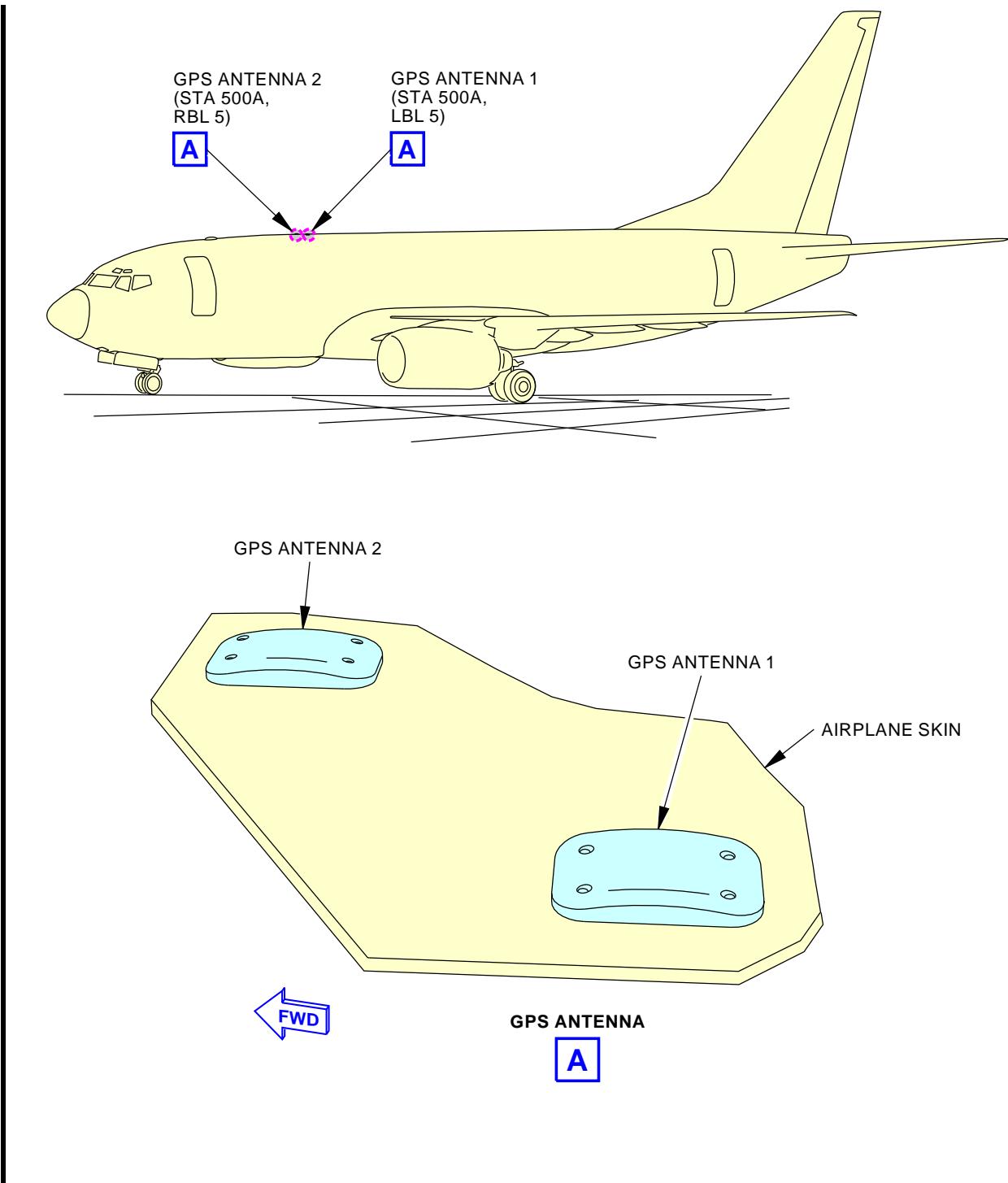
———— END OF TASK ————

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GPS Antenna  
Figure 201/34-58-00-990-801

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TASK 34-58-00-440-801

3. **Global Positioning System - Activation**

(Figure 201)

A. **General**

- (1) This procedure adds electrical power to the Global Positioning System.

B. **Location Zones**

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

C. **Procedure**

SUBTASK 34-58-00-860-011

**WARNING:** KEEP ALL PERSONNEL AT A SAFE DISTANCE FROM THE ANTENNA. RF ENERGY CAN CAUSE INJURIES TO PERSONNEL.

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1
A	3	C01378	RADIO NAVIGATION NAV CONT PNL 1
B	1	C01376	RADIO NAVIGATION NAV SNSR DC-1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	10	C01377	RADIO NAVIGATION NAV SNSR DC-2
A	13	C01480	RADIO NAVIGATION MMR 2
A	15	C01379	RADIO NAVIGATION NAV CONT PNL 2

———— END OF TASK ————

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GLOBAL POSITIONING SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure has these tasks:
- (1) An operational test of the global positioning system (GPS).
  - (2) A system test of the global positioning system.

NOTE: The airplane must be moved to a position where the GPS antennas have a clear view of the GPS satellites.

**TASK 34-58-00-710-802**

**2. Global Positioning System - Operational Test**

**A. General**

- (1) This task does a GPS position check.

**B. References**

Reference	Title
09-11-00-580-801	Maintenance Towing (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)

**C. Location Zones**

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

**D. Procedure**

SUBTASK 34-58-00-860-001

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

SUBTASK 34-58-00-860-008

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-58-00-580-001

- (3) Move the airplane to a position where the GPS antennas have a clear view of the GPS satellites. To move the airplane, do this task: Maintenance Towing, TASK 09-11-00-580-801.

SUBTASK 34-58-00-710-001

- (4) Do these steps to see the GPS position on the CDU:
  - (a) Push the INIT REF key on the CDU.
  - (b) Push the line select key (LSK) that is adjacent to <INDEX>.
  - (c) Push the LSK that is adjacent to <POS.
  - (d) Push the NEXT PAGE key on the CDU.
  - (e) Make sure the steps that follow occur:

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- 1) The GPS L position on the CDU agrees with the known airplane position.  
NOTE: As much as 5 minutes of time can be necessary for the positions to show on the CDU.
- 2) The GPS R position on the CDU agrees with the known airplane position.  
NOTE: As much as 5 minutes of time can be necessary for the positions to show on the CDU.

———— END OF TASK ————

**TASK 34-58-00-730-802**

**3. Global Positioning System - System Test**

**A. General**

- (1) This procedure does a GPS interface check.
- (2) The airplane must be moved to a position where the GPS antennas have a clear view of the GPS satellites.

**B. References**

<b>Reference</b>	<b>Title</b>
09-11-00-580-801	Maintenance Towing (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right

**D. Procedure**

**SUBTASK 34-58-00-580-002**

- (1) Move the airplane to a position where the GPS antennas have a clear view of the GPS satellites. To move the airplane, do this task: Maintenance Towing, TASK 09-11-00-580-801.

**SUBTASK 34-58-00-860-003**

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

**SUBTASK 34-58-00-860-004**

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

**CAPT Electrical System Panel, P18-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	13	C01480	RADIO NAVIGATION MMR 2

**SUBTASK 34-58-00-710-004**

- (4) Do these steps to see the GPS position on the CDU:
  - (a) Push the INIT REF key on the CDU.
  - (b) Push the line select key (LSK) that is adjacent to <INDEX>.
  - (c) Push the LSK that is adjacent to <POS.

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- (d) Push the NEXT PAGE key on the CDU.
- (e) Make sure the steps that follow occur:
  - 1) The GPS L position on the CDU agrees with the known airplane position.  
NOTE: As much as 5 minutes of time can be necessary for the positions to show on the CDU.
  - 2) The GPS R position on the CDU agrees with the known airplane position.  
NOTE: As much as 5 minutes of time can be necessary for the positions to show on the CDU.

SUBTASK 34-58-00-710-003

- (5) Do these steps to do a check of the GPS annunciator on the IRS MSU (P5 panel):

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

- 1) Make sure the GPS L position goes out of view on the CDU.
    - 2) Make sure the GPS R position stays in view on the CDU.
    - 3) Make sure the GPS annunciator on the IRS MSU (P5) stays off.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

- 1) Make sure the GPS R position goes out of view on the CDU.
    - 2) Make sure the GPS L position stays out of view on the CDU.
    - 3) Make sure the GPS annunciator on the IRS MSU (P5) comes on after approximately 10 seconds.

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

- (d) Make sure the GPS annunciator on the IRS MSU goes off.
  - (e) Stop for approximately 5 minutes until the GPS L and GPS R positions are shown again.

**E. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-58-00-860-007

- (1) Remove electrical power, if it is not necessary (TASK 24-22-00-860-812).

———— END OF TASK ————



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GPS ANTENNA - REMOVAL/INSTALLATION

**1. General**

- A. This procedure has these tasks:
  - (1) A removal of the GPS antenna.
  - (2) An installation of the GPS antenna.
- B. There are two GPS antennas on the airplane: GPS Antenna 1, M2103, and GPS Antenna 2, M2102. The two antennas are installed near station 500A. GPS Antenna 2 is forward and to the right of GPS Antenna 1.
- C. The tasks are the same for the two antennas.

**TASK 34-58-02-000-802**

**2. GPS Antenna Removal**

(Figure 401)

**A. References**

Reference	Title
51-31-00-160-801	Prepare For Sealing (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-2481	Tool - Sealant Removal, BAC5000, PSD 6-184 Approved Part #: 1-6390-A Supplier: 63318 Part #: 10810 Supplier: \$0855 Part #: 234350 Supplier: \$0857 Part #: 235072 Supplier: \$0857 Part #: 235073 Supplier: \$0857 Part #: 235074 Supplier: \$0857 Part #: 235075 Supplier: \$0857 Part #: 235076 Supplier: \$0857 Part #: 235077 Supplier: \$0857 Part #: 235078 Supplier: \$0857 Part #: 235079 Supplier: \$0857 Part #: 235080 Supplier: \$0857 Part #: 235081 Supplier: \$0857 Part #: 311 Supplier: KA861 Part #: 411B60 Supplier: 3DN12 Part #: 411B90 Supplier: 3DN12 Part #: DAD5013 Supplier: \$0856 Part #: DFD5019 Supplier: \$0856 Part #: J5-0275-2010 Supplier: 435R8 Part #: SCD5019 Supplier: \$0856 Part #: ST982LF-9 Supplier: 3Z323 Part #: TS1275-4 Supplier: 1DWR5

**C. Location Zones**

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

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(Continued)

**Zone      Area**

231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**D. Removal Procedure**

SUBTASK 34-58-02-860-011

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-58-02-020-003

- (2) To remove the sealant from around the edge of the GPS antenna [1], do this task: Prepare For Sealing, TASK 51-31-00-160-801.

SUBTASK 34-58-02-020-004

- (3) Do these steps to remove the GPS antenna [1]:
  - (a) Remove the seals that are above the screw holes on the antenna.
  - (b) Remove the screws [2] from the GPS antenna [1].

**CAUTION:** BE CAREFUL WHEN YOU USE THE SEALANT REMOVAL TOOL TO BREAK THE SEAL. TOO MUCH FORCE CAN CAUSE DAMAGE TO THE AIRPLANE SKIN, AND OTHER COMPONENTS.

- (c) Use the sealant removal tool, COM-2481 to break the seal all around the GPS antenna [1].

**CAUTION:** MOVE THE ANTENNA THE LEAST DISTANCE NECESSARY TO PERMIT YOU TO DISCONNECT THE COAXIAL CONNECTOR. DAMAGE TO THE COAXIAL CABLE CAN OCCUR IF YOU PULL THE CABLE WITH TOO MUCH FORCE.

- (d) Carefully pull the GPS antenna [1] until you can get access to the coaxial connector [3].
- (e) Disconnect the coaxial connector [3].

**NOTE:** Make sure the coaxial cable and connector [3] do not fall into the airplane fuselage.

- (f) Remove the GPS antenna [1] and the O-ring [4].
- (g) Put protective covers on the coaxial connector [3].

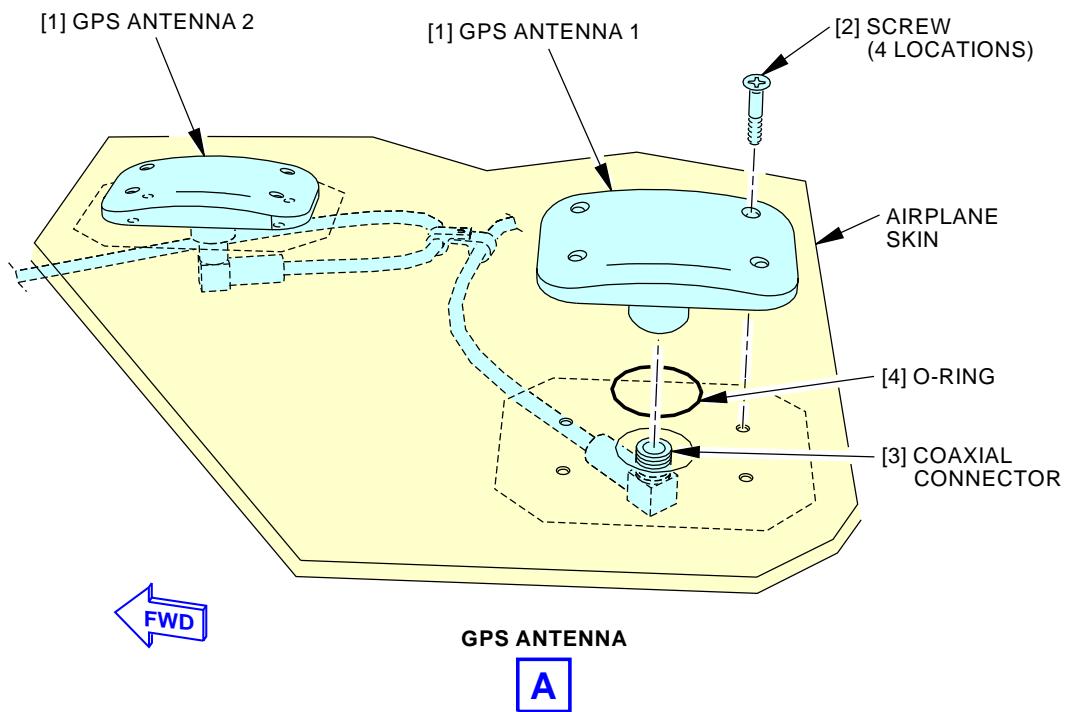
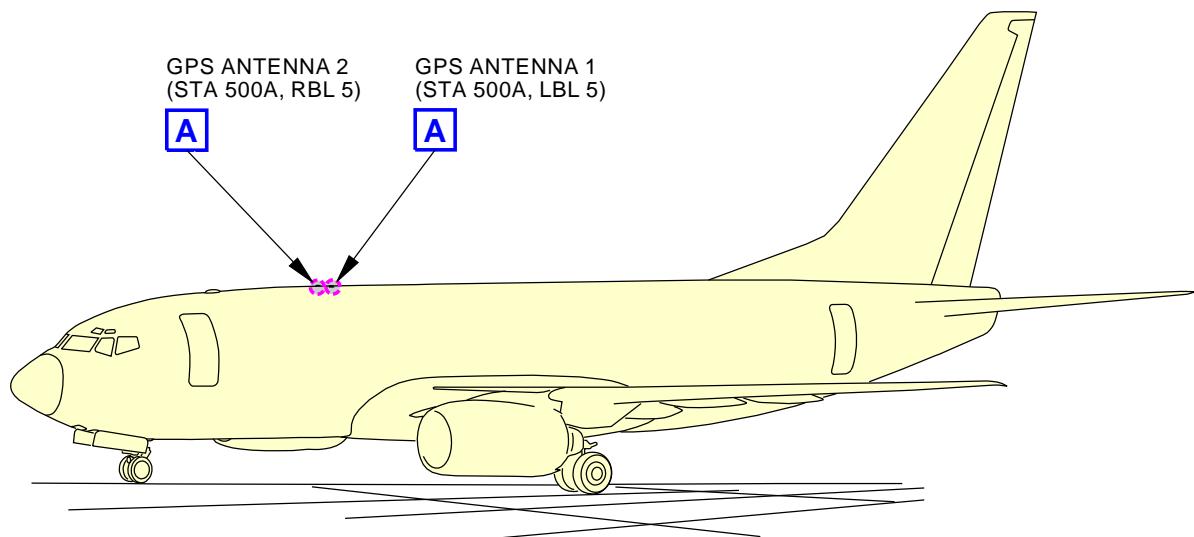
— END OF TASK —



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GPS Antenna Installation  
Figure 401/34-58-02-990-801

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**TASK 34-58-02-400-802**

**3. GPS Antenna Installation**

(Figure 401)

**A. References**

Reference	Title
20-30-84-910-801	Final Cleaning of Metal Prior to Painting (Series 84) (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
51-21-21-100-801	Clean the Surface to be Painted (P/B 701)
51-21-31-350-801	Removal and Control of Corrosion for Aluminum and Aluminum Alloys (P/B 701)
51-21-41-370-802	Apply Alodine 600, 1200 or 1200S Solution (P/B 701)
51-31-00-390-804	Fillet Seal Application (P/B 201)

**B. Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550).  Part #: C15292 (MODEL T477W) Supplier: 01014 Part #: M1 Supplier: 3AD17 Opt Part #: M1B Supplier: 3AD17
STD-810	Spatula - Fillet Smoothing, Hardwood or Plastic

**C. Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
B01004	Solvent - Final Cleaning Of Metal Prior To Painting (AMM 20-30-84/201) - Series 84	
C50033	Chromated Conversion Coating for Aluminum - Alodine 1200	
D00015	Grease - Aircraft Bearing (Use BMS 3-24 until existing stocks are depleted, BMS 3-33 supersedes BMS 3-24)	BMS3-24 (Superseded by BMS3-33)
D00254	Compound - Silicone	SAE AS8660 (NATO S-736) (Supersedes MIL-S-8660)

**D. Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	GPS antenna	34-58-02-04-030	AKS ALL



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**E. Location Zones**

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
231	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Left
232	Forward Passenger Compartment - Forward Entry Door to Sta 663.75 - Right

**F. Installation Procedure**

SUBTASK 34-58-02-860-012

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

**CAPT Electrical System Panel, P18-1**

Row	Col	Number	Name
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-58-02-110-002

- (2) Clean the airplane skin as follows:

- (a) To remove the remaining sealant from the airplane skin in the antenna area, do this task:  
Clean the Surface to be Painted, TASK 51-21-21-100-801.

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

- (b) Clean the airplane skin in the antenna area with Series 84 solvent, B01004 (TASK 20-30-84-910-801).

SUBTASK 34-58-02-840-002

- (3) If there is corrosion on the airplane skin below the antenna, prepare the airplane skin as follows:

- (a) To remove the corrosion, do this task: Removal and Control of Corrosion for Aluminum and Aluminum Alloys, TASK 51-21-31-350-801.

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

- (b) Clean the airplane skin in the area of the corrosion with Series 84 solvent, B01004 (TASK 20-30-84-910-801).
  - (c) To apply a layer of Alodine 1200 coating, C50033 to the airplane skin in the area where the GPS antenna [1] touches the skin, do this task: Apply Alodine 600, 1200 or 1200S Solution, TASK 51-21-41-370-802.



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SUBTASK 34-58-02-390-006

- (4) Prepare the GPS antenna [1] as follows:
  - (a) Apply a layer of grease, D00015, on the O-ring [4] and the O-ring groove.
  - (b) Install the O-ring [4] on the GPS antenna [1].
    - 1) Make sure the O-ring [4] is not damaged and is installed correctly in the O-ring groove.
  - (c) Apply a layer of sealant, A00247, in the holes in the airplane skin for the screws and the coaxial cable.
  - (d) Apply a layer of sealant, A00247, on the threads and shank of the screws [2].

SUBTASK 34-58-02-420-004

- (5) Install the GPS antenna [1]:
  - (a) Remove the protective covers from the coaxial connector [3].
  - (b) Examine the coaxial connector [3] for dirt and damage.
  - (c) Connect the coaxial connector [3].
  - (d) Tighten the connector 8 to 12 inch-pounds.
  - (e) Apply a large quantity of silicone compound, D00254, to the outside coaxial connector, and at the exterior connector/antenna interface.
  - (f) Put the GPS antenna [1] into its position on the airplane.
  - (g) Install three of the screws [2] that hold the GPS antenna [1].

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

- (h) Remove the unwanted sealant, A00247, from around the antenna with Series 84 solvent, B01004 (TASK 20-30-84-910-801).

SUBTASK 34-58-02-760-002

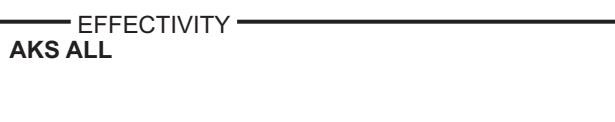
- (6) Do a check of the resistance between the GPS antenna [1] and the airplane skin as follows:
  - (a) Connect an intrinsically safe approved bonding meter, COM-1550 between the base of the antenna and the airplane skin.

NOTE: You can get access to the base of the antenna through the hole for the last screw.

    - 1) Make sure the measured resistance is 0.001 ohm or less.

SUBTASK 34-58-02-420-005

- (7) Install the last screw [2] that holds the GPS antenna [1].



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SUBTASK 34-58-02-420-006

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

- (8) Remove the unwanted sealant, A00247, from around the head of each screw [2] with Series 84 solvent, B01004 Final Cleaning of Metal Prior to Painting (Series 84), TASK 20-30-84-910-801.

#### G. Aerodynamic Fillet Seal Installation

SUBTASK 34-58-02-390-007

- (1) To apply a bead of sealant, A02315, around the antenna where it touches the airplane skin, do this task: Fillet Seal Application, TASK 51-31-00-390-804.

NOTE: Apply the sealant all around the edge of the antenna. Make sure that no air bubbles are in the sealant. Use a sufficient quantity of the sealant to permit you to make the surface smooth.

SUBTASK 34-58-02-390-008

- (2) To make the bead into an aerodynamic fillet seal approximately 0.70 inches wide with the hardwood or plastic fillet smoothing spatula, STD-810, do this task: Fillet Seal Application, TASK 51-31-00-390-804.

SUBTASK 34-58-02-140-002

- (3) Remove all the unwanted sealant from the area around the antenna.

SUBTASK 34-58-02-390-009

- (4) Fill the screw holes with sealant, A02315.

NOTE: Make the sealant smooth in relation to the antenna surface.

#### H. GPS Antenna Installation Test

SUBTASK 34-58-02-860-013

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

**CAPT Electrical System Panel, P18-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	2	C01479	RADIO NAVIGATION MMR 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	13	C01480	RADIO NAVIGATION MMR 2

SUBTASK 34-58-02-860-009

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

SUBTASK 34-58-02-710-002

- (3) Do these steps to see the GPS position on the CDU:

- Push the INIT REF key on the CDU.
- Push the line select key (LSK) that is adjacent to <INDEX>.
- Push the LSK that is adjacent to <POS>.
- Push the NEXT PAGE key on the CDU.
- Make sure the steps that follow occur:

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- 1) The GPS L position on the CDU agrees with the known airplane position.  
NOTE: As much as 5 minutes of time can be necessary for the GPS positions to show on the CDU.
- 2) The GPS R position on the CDU agrees with the known airplane position.  
NOTE: As much as 5 minutes of time can be necessary for the GPS positions to show on the CDU.

**I. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-58-02-860-010

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

————— END OF TASK ————

EFFECTIVITY
AKS ALL

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FLIGHT MANAGEMENT COMPUTER SYSTEM - MAINTENANCE PRACTICES

**1. General**

- A. This procedure contains these tasks:
- (1) FMC Deactivation
  - (2) FMC Activation
  - (3) An installation of the FMC software with an airborne data loader (ADL).

**AKS 002-999**

- (4) An installation of the FMC software with a portable data loader (PDL).

**AKS ALL**

- (5) A crossload of the FMC software.
- (6) An FMC software configuration check.
- (7) An installation of the CDU software with an airborne data loader (ADL).

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- (8) An installation of the CDU software with a portable data loader (PDL).

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- (9) A CDU software configuration check.
  - (10) An installation of software when the airborne data loader is inoperative.
  - (11) An FMC diagnostic data transfer.
  - (12) The Procedure to enter Zero Fuel Weight.
- B. For general information for software installation times, do this task: On-Airplane Software Installation, TASK 20-15-11-400-801.
- C. The airplane must be on the ground before you can do these tasks.
- D. Some airlines keep the circuit breaker for the airborne data loader open when the data loader is not necessary. This increases the length of time that the data loader is serviceable.

**TASK 34-61-00-040-801**

**2. FMC - Deactivation**

(Figure 34-61-02-990-801)

**A. General**

- (1) This procedure removes electrical power to the FMCS.

**B. References**

Reference	Title
34-61-02-990-801	Figure: FMCS - Computer Installation (P/B 401)

**C. Location Zones**

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left
212	Flight Compartment - Right

EFFECTIVITY

AKS ALL

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D. Procedure

SUBTASK 34-61-00-860-047

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

E. FMC - Tryout

NOTE: This tryout is to make sure the FMCS is in a zero energy state.

SUBTASK 34-61-00-860-048

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

SUBTASK 34-61-00-860-050

- (2) Make sure the screen on both CDU's is blank.

————— END OF TASK ————

**TASK 34-61-00-440-801**

3. FMC - Activation

Figure 34-61-02-990-801

A. General

- (1) This procedure adds electrical power to the FMCS.

B. References

Reference	Title
34-61-02-990-801	Figure: FMCS - Computer Installation (P/B 401)

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left
118	Electrical and Electronics Compartment - Right
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50
211	Flight Compartment - Left



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(Continued)

**Zone      Area**

212      Flight Compartment - Right

**D. Procedure**

SUBTASK 34-61-00-860-049

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

———— END OF TASK ————

**TASK 34-61-00-470-811**

**4. FMC Software Installation with an Enhanced Airborne Data Loader**

**A. General**

- (1) This procedure tells you how to install software in the FMC with the enhanced airborne data loader (eADL).
- (a) The FMC usually contains these pieces of software:
- 1) operational program (OPS)
  - 2) navigation database (NDB)
  - 3) software options database (OPC)
  - 4) model/engine database (MEDB).
- (b) The FMC can contain these pieces of optional software:
- 1) performance defaults database (Perf Defaults)
  - 2) ACARS datalink configuration database (Datalink)
  - 3) flight plan database
  - 4) Loadable Default Data Base (LDDB)
- (2) If you install a new operational program, the databases are deleted. Also, performance factors that are changed by manual entry from the CDU go back to their default values.
- (a) You must install the NDB and MEDB databases again after the OPS program is installed. If you do not install a customized OPC database the OPS uses default values.
- (b) If your airline uses any of the optional databases, Perf Defaults, Datalink, flight plan, or LDDB they must also be installed again. If you do not install a customized Perf Defaults or Datalink database the OPS uses default values.
- (3) An enhanced airborne data loader (eADL) and a control display unit (CDU) are necessary for this procedure. A data loader control panel is also necessary. The data loader control panel is installed above the eADL on the P61 panel.
- (4) The eADL has two procedures for software installation:



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- (a) Floppy Disk Software Installation
- (b) USB Flash Drive Software Installation
  - 1) This procedure uses the USB port on the front panel of the eADL to install software from a valid USB flash drive to the Mass Storage Device (MSD). After the software is installed on the MSD, the software is loaded to the LRU.
  - 2) The USB flash drive must be configured correctly. Use the USB stick creator tool specified in the eADL Operations Guide.
- (5) The airplane must be on the ground with the engines shutdown before you can install software.
- (6) To read about software installation times and data loaders, refer to this task: On-Airplane Software Installation, TASK 20-15-11-400-801.
- (7) Some airlines keep the circuit breaker for the data loader open when the data loader is not necessary. This increases the length of time that the data loader is serviceable.

**B. References**

<b>Reference</b>	<b>Title</b>
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**D. Prepare for the Software Installation**

**SUBTASK 34-61-00-860-046**

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

**NOTE:** If a power interrupt occurs while the FMC OPS software is uploaded, the FMC can crash and not be recoverable. For this condition, the FMC must be replaced.

**SUBTASK 34-61-00-760-017**

- (2) Make sure that this circuit breaker is closed:

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	9	C00923	DATA LOADER

**SUBTASK 34-61-00-470-047**

- (3) Make sure you know the correct software part number for the FMC.

**SUBTASK 34-61-00-470-048**

- (4) Make sure the system select switch on the data loader control panel (P61) is set to NORM or NORMAL.

**SUBTASK 34-61-00-470-049**

- (5) Make sure the data loader selector switch on the data loader control panel (P61) is set to SINGLE SYS.

**AKS ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

**SUBTASK 34-61-00-840-010**

- (6) Do these steps at the data loader control panel:

- (a) Set the upper switch to L if software will be installed into the left FMC.

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**AKS ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61) (Continued)**

- (b) Set the upper switch to R if software will be installed into the right FMC.

**AKS ALL**

SUBTASK 34-61-00-840-014

- (7) Set the system select switch to FMC.

SUBTASK 34-61-00-860-051

- (8) Open the eADL front cover by releasing the two screws and lifting up on the cover.

**E. Software Installation Procedure**

SUBTASK 34-61-00-470-043

- (1) Do these steps to install software from a floppy disk:

- (a) Wait until the display shows the eADL Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, choose MAIN or GO BACK until the eADL shows the Main Menu.

- (b) Select "Target Page."

- 1) The eADL will show the Select Target System screen.

- (c) Select "Floppy Drive."

- 1) The eADL will show a Load Confirmation screen.

- (d) Carefully push the first disk (label up) into the disk drive.

- (e) Select "CONFIRM."

- 1) The eADL will show "LOADING" on the Transfer In Progress screen.

NOTE: It can take one to two minutes for the installation to start.

NOTE: If the disk set has more than one disk and the data of the first disk is completely transferred, the eADL will prompt you to insert the next diskette. Eject the first diskette, insert the next diskette and select "CONTINUE."

- (f) In the Transfer In Progress screen, wait for the eADL to show "LOAD COMPLETE."

NOTE: If a failure occurs, the CDU will show LOAD FAILURE and DATA LOAD INOP and one of these messages:

CHECK DBL OR INTERFACE - data loader or interface

wiring failure

DB EXCEEDS FMC MEMORY - data on disk is too large for  
FMC memory

RESET COUNT EXCEEDED - five load attempts have failed

DB-OFP INCOMPATIBLE - data is not compatible with  
the FMC OFP

CHECK MEDIA - a portion of data on the disk  
is not able to load

INCORRECT DISK INSERTED - the wrong disk is put in after  
INSERT NEXT DISK is shown

EFFECTIVITY  
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- (g) Select "MAIN" to go back to the main menu.
- (h) Eject the disk from the disk drive when the software installation is completed.

SUBTASK 34-61-00-470-044

- (2) Do these steps to install software from a USB flash drive to the eADL MSD:
  - (a) Put the USB flash drive into the eADL USB port.  
NOTE: The USB flash drive must be configured correctly by the USB stick creator tool as specified in the eADL Operations Guide.
  - (b) Make sure that the "eADL Main Menu" is shown.  
NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.  
NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.
  - (c) Select "Maintenance Page."
    - 1) This will show the "Maintenance Menu" screen.
  - (d) Select "Transfer Parts From USB."  
NOTE: If the error message "USB Is Not Mounted Or Is Not A Valid USB" is shown, select "GO BACK" and do the steps again.  
NOTE: Make sure the USB flash drive is configured correctly by the USB stick creator tool as specified in the eADL Operations Guide.
    - 1) The eADL screen will show "CONFIRM TO BEGIN TRANSFERRING."
    - 2) Select "CONFIRM."  
NOTE: The USB and MSD annunciators will turn yellow during the transfer procedure.  
NOTE: If the software is already on the eADL MSD, this message will show: "Skipping, the software part number already exists."
  - (e) When the software transfer is complete, the USB and MSD annunciators will turn green and this message will show:  
"Part Transfer Complete"  
NOTE: The annunciators will turn red if the transfer procedure is aborted or if there is a failure.
  - (f) Select "GO BACK" two times to go back to the main menu.

SUBTASK 34-61-00-470-045

- (3) Do these steps to install the software from the eADL MSD to the LRU:  
NOTE: If you install the operational program (OPS), do this procedure again for each customized database.  
NOTE: Performance factors that were changed by manual entry from the CDU go back to their default values. After the OPS is loaded, you can enter the values again.
  - (a) Make sure that the "eADL Main Menu" is shown.  
NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.  
NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.
  - (b) Select "Target Page."

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AKS ALL

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- 1) This will show the “Select Target System” screen.
  - (c) Select the LRU to receive the software.
    - 1) This will show the “Select Software Part” screen.
  - (d) Push the “SELECT” button for the required software.
- NOTE: The listed software will show as it was previously configured in the USB stick creator tool.
- (e) Make sure that the “Load Confirmation” screen shows.
  - (f) Select “CONFIRM.”
    - 1) This will show the “Transfer In Progress” screen.
    - 2) The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the installation procedure.
    - 3) The “LOADING” annunciator will change to “COMPLETE” and turn green when the installation procedure is completed.
  - (g) Select “MAIN” to go back to the main menu.

SUBTASK 34-61-00-750-027

- (4) Do the applicable steps in task: FMC Software Configuration Check, TASK 34-61-00-750-801.

SUBTASK 34-61-00-470-046

- (5) Do this task: FMC Software Crossload, TASK 34-61-00-470-806.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-00-860-052

- (1) Close the eADL cover and tighten screws.

SUBTASK 34-61-00-860-053

- (2) Set the system select switch on the data loader control panel (P61) to NORM or NORMAL.

SUBTASK 34-61-00-860-054

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

———— END OF TASK ————

**AKS 002-999**

**TASK 34-61-00-470-805**

**5. FMC Software Installation with a Portable Data Loader**

**A. General**

- (1) This procedure tells you how to install software into the FMC with a portable data loader.
  - (a) The FMC usually contains these pieces of software:
    - 1) operational software (OPS)
    - 2) navigation database (NDB)
    - 3) software options database (OPC)
    - 4) model/engine database (MEDB).
  - (b) The FMC can contain these pieces of optional software:
    - 1) performance defaults database (Perf Defaults)
    - 2) ACARS datalink configuration database (Datalink)
    - 3) flight plan database

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AKS 002-999 (Continued)

- 4) Loadable Default Data Base (LDDDB)
- (2) If you install a new operational program, the databases are deleted. Also, performance factors that are changed by manual entry from the CDU go back to their default values.
- (a) You must install the NDB and MEDB databases again after the OPS program is installed. If you do not install a customized OPC database the OPS uses default values.
- (b) If your airline uses any of the optional databases, Perf Defaults or Datalink, they must also be installed again. If you do not install a customized Perf Defaults or Datalink database the OPS uses default values.
- (3) If the PDL is connected to the DATA TRANSFER UNIT RECEPTACLE, you cannot use the ADL to load data.
- (4) A portable data loader (PDL) is not a Boeing supplied part. Refer to the PDL supplier for instructions for operation. PDLs have a disk drive for software installation from disks. Some PDLs have an internal mass storage device. If the software is stored in the PDL, then disks are not necessary.
- (5) After installation of an MEDB, any factors that had been manually adjusted, will need to be manually updated as the MEDB installation will revert all performance values to their default factory value. Any custom LDDDB (provided direct from the FMC supplier) previously installed will need to be re-installed after an MEDB installation.

**B. References**

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

**C. Tools/Equipment**

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

Reference	Description
COM-1915	Data Loader - ARINC 615 Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 30100 Supplier: 0BAW0 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: P2K-615A-06 Supplier: 0BAW0 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 80000-03-01010203 Supplier: 0BAW0 Opt Part #: 80000-04-01020301 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 Opt Part #: 964-0400-020 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896



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AKS 002-999 (Continued)

**D. Location Zones**

<u>Zone</u>	<u>Area</u>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**E. Procedure**

SUBTASK 34-61-00-760-006

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

NOTE: If a power interrupt occurs while the FMC OPS software is uploaded, the FMC can crash and not be recoverable. For this condition, the FMC must be replaced.

SUBTASK 34-61-00-840-002

- (2) Use a portable data loader (PDL) to install software in the FMC.

SUBTASK 34-61-00-840-003

- (3) Do these steps to prepare for software installation:

**AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

- (a) Make sure the system select switch on the data loader control panel (P61) is set to NORMAL.

**AKS 002-999**

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**CAUTION:** MAKE SURE THE POWER SWITCH FOR THE PORTABLE DATA LOADER IS SET TO OFF BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE POWER SWITCH IS NOT OFF, DAMAGE TO THE PORTABLE DATA LOADER CAN OCCUR.

- (c) Set the power switch on the PDL to the off position.  
(d) Connect the interface cable from the PDL to the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.  
(e) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

- (f) Do these steps at the data loader control panel:  
1) Set the upper switch to L if software will be installed into the left FMC.  
2) Set the upper switch to R if software will be installed into the right FMC.

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AKS ALL

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**AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**  
**(Continued)**

- 3) Set the system select switch to FMC.

**AKS 002-999**

- (g) Set the power switch on the portable data loader to the on position.

NOTE: For more information on how to use the data loader, refer to the suppliers instructions for the portable data loader.

**AKS 002-999; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE**

SUBTASK 34-61-00-470-008

- (4) Do these steps to install the software:

**AKS 002-999**

NOTE: If you install the operational program (OPS), do this procedure again for the customized NDB, OPC, and MEDB databases after the OPS program is installed.

If your airline uses any of the optional customized databases, Perf Defaults or Datalink, they must also be installed again.

Performance factors that were changed by manual entry from the CDU go back to their default values. After the OPS is loaded, you can enter the values again.

**AKS 002-999; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE**

- (a) Put the correct software disk into the disk drive of the data loader.

NOTE: When the data load sequence starts, the CDU shows the FMCS DATA LOADER page.

- (b) Follow the prompts on the FMCS DATA LOADER page.

- (c) If the message INSERT NEXT DISK shows, do these steps:

- 1) Push the eject button on the data loader and remove the disk.

- 2) Put the next disk into the data loader.

- 3) Repeat the previous two steps as necessary.

- (d) When the message LOAD COMPLETE shows, push the eject button on the data loader and remove the disk.

NOTE: Because of data loader incompatibility, LOAD COMPLETE may not be shown on the CDU after the completion of a successful data load. If the CURRENT RECORD on line 3 of the FMCS DATA LOADER page increments to the number shown for TOTAL RECORDS on line 5, then a successful data load occurred.

NOTE: After you eject the diskette from the data loader, the FMC will restart. After the FMC restarts, you can continue to install software into the FMC regardless of the page shown on the CDU.

NOTE: If a failure occurs, the CDU will show LOAD FAILURE and DATA LOAD INOP and one of these messages:

CHECK DBL OR INTERFACE - data loader or interface

wiring failure

DB EXCEEDS FMC MEMORY - data on disk is too large for

FMC memory

RESET COUNT EXCEEDED - five load attempts have failed

EFFECTIVITY	
AKS ALL	

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DB-OFP INCOMPATIBLE - data is not compatible with the FMC OFP

CHECK MEDIA - a portion of data on the disk is not able to load

INCORRECT DISK INSERTED - the wrong disk is put in after INSERT NEXT DISK is shown

### AKS 002-999; SOFTWARE INSTALLATION WITH A PDL MASS STORAGE DEVICE

SUBTASK 34-61-00-470-018

- (5) Follow the PDL supplier instructions to install the software.

#### AKS 002-999

NOTE: If you install the operational program (OPS), do this procedure again for the customized NDB, OPC, and MEDB databases after the OPS program is installed.

If your airline uses any of the optional customized databases, Perf Defaults or Datalink, they must also be installed again.

Performance factors that were changed by manual entry from the CDU go back to their default values. After the OPS is loaded, you can enter the values again.

### AKS 002-999; SOFTWARE INSTALLATION WITH A PDL MASS STORAGE DEVICE

NOTE: When the data load sequence starts, the CDU shows the FMCS DATA LOADER page.

#### AKS 002-999

SUBTASK 34-61-00-760-011

- (6) Set the power switch on the PDL to the off position after all the software is loaded into the FMC.

### AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

SUBTASK 34-61-00-470-010

- (7) Set the system select switch on the data loader control panel to NORMAL.

#### AKS 002-999

SUBTASK 34-61-00-840-004

- (8) Do these steps to put the airplane back to its usual condition:

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

#### CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

- (b) Remove the ARINC 615 data loader, COM-1915, interface cable from the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.



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**AKS 002-999 (Continued)**

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**AKS 002-999; AIRPLANES WITH DUAL FMC**

SUBTASK 34-61-00-470-012

- (9) Do this task: FMC Software Crossload, TASK 34-61-00-470-806.

**AKS 002-999**

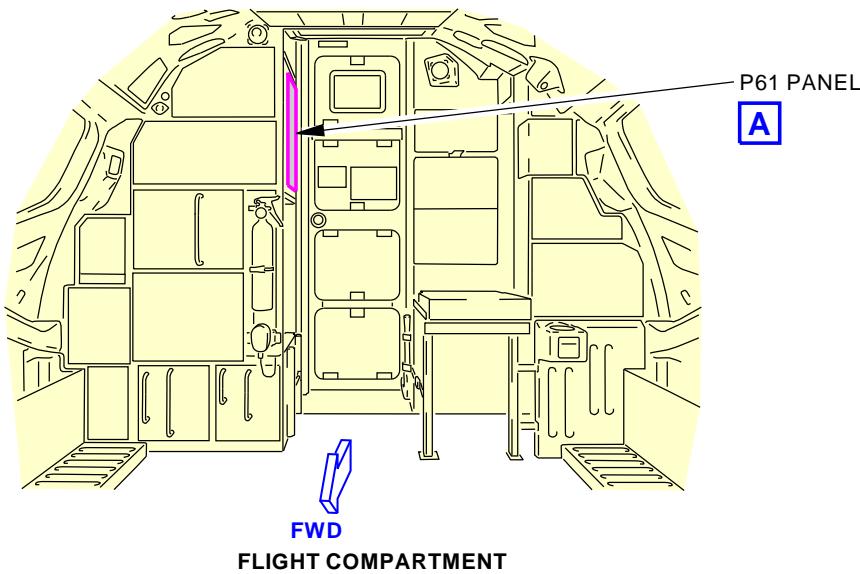
———— END OF TASK ————

EFFECTIVITY  
AKS ALL

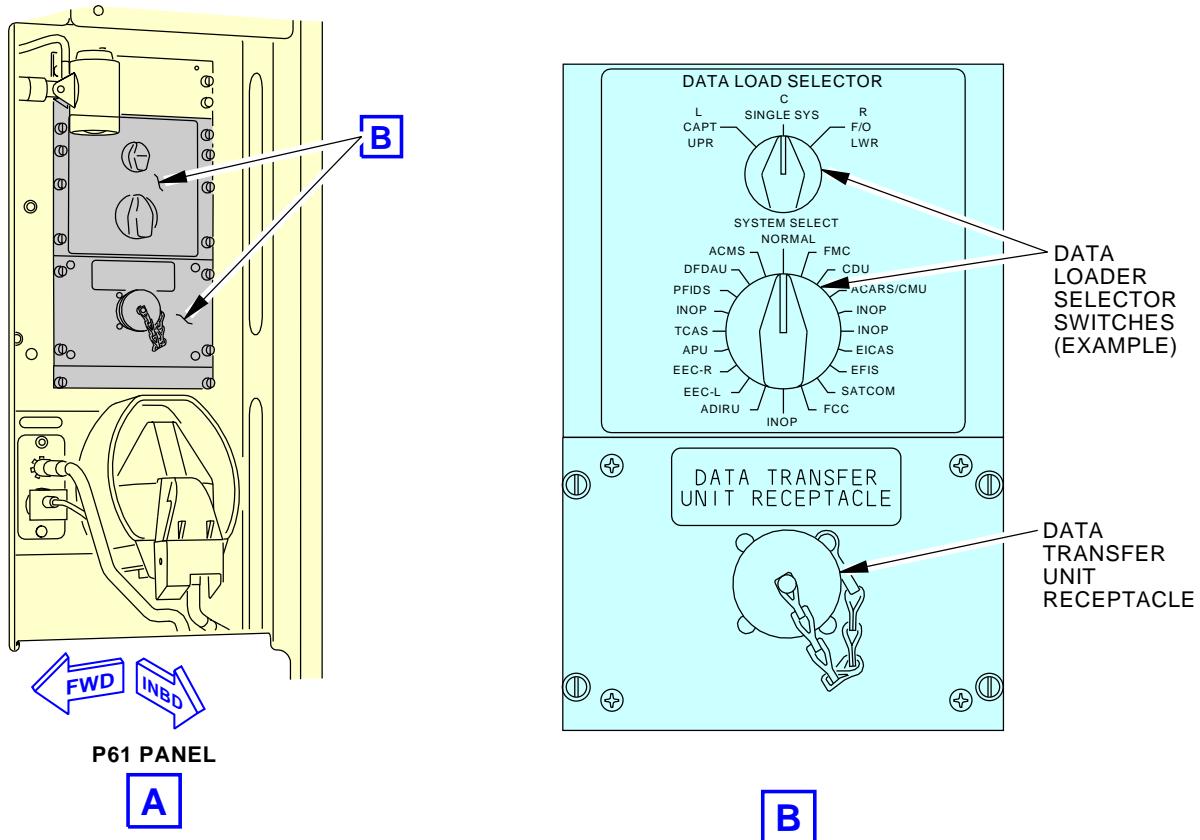
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FLIGHT COMPARTMENT



K69848 S0006577199\_V2

FMC Software installation  
Figure 201/34-61-00-990-812

EFFECTIVITY  
AKS 002-999; AIRPLANES WITH DATA TRANSFER  
UNIT RECEPTACLE AND TWO SELECTOR  
SWITCHES

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AKS ALL

**TASK 34-61-00-470-806**

**6. FMC Software Crossload**

**A. General**

- (1) This procedure tells you how to crossload software from one FMC to the other FMC. A crossload will install the software into the second FMC significantly faster than the data loader.  
**NOTE:** After an OP PROGRAM or DATABASE crossload is carried out, all previously entered performance factors, such as F-F Factor, must be manually entered into the FMC.
- (2) After a dual FMC power-up, the OP PROGRAM CROSSLOAD page or the DATABASE CROSSLOAD page is shown automatically on the CDU if the two FMCs have different software installed.
- (3) When the CROSSLOAD> prompt is shown on the FMCS BITE page, you can push the LSK to manually select the OP PROGRAM CROSSLOAD page or the DATABASE CROSSLOAD page.

**B. References**

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

**C. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**D. Procedure**

SUBTASK 34-61-00-760-007

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

SUBTASK 34-61-00-470-013

- (2) Do these steps to crossload the software:
  - (a) Make sure the CDU shows one of these two pages, the OP PROGRAM CROSSLOAD page or the DATABASE CROSSLOAD page.  
**NOTE:** The CROSSLOAD> prompt is not shown if an FMC is failed, or only one FMC is powered, or only one FMC is installed in a dual FMC configuration.  
**NOTE:** The OP PROGRAM CROSSLOAD page lets you install the operational program and databases into the other FMC. The DATABASE CROSSLOAD page lets you install only the databases into the other FMC.  
**NOTE:** If the OP PROGRAM INVALID page shows, you must set the FMC source select switch to the position shown on the CDU.
  - (b) Push the CDU LSK next to COPY FROM LEFT(RIGHT) to select the FMC you want to copy from.  
**NOTE:** If you see the message SET FMC SOURCE SELECT TO BOTH-ON-L(R), make sure the switch is in the correct position.
  - (c) Push the EXEC key on the CDU.
  - (d) The CROSSLOAD IN PROGRESS message shows during the FMC crossload.



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- (e) The CROSSLOAD COMPLETE message shows for a successful crossload.

NOTE: The CROSSLOAD FAIL message is shown if the FMC crossload fails. Possible causes for a failure are loss of communication between the FMC's, loss of power to one FMC, or failure of the FMC receiving the data. A second attempt may be made to do the crossload. Select the INDEX prompt to return to the FMC BITE page. Then select the CROSSLOAD> prompt to repeat the crossload operation.

NOTE: A database crossload failure causes the NEXT MISMATCH prompt to show with the CROSSLOAD COMPLETE message. The prompt can also show for mismatches in the analog input discretes or the performance factors. Select the NEXT MISMATCH prompt to continue.

SUBTASK 34-61-00-750-003

- (3) Do this task: FMC Software Configuration Check, TASK 34-61-00-750-801.

———— END OF TASK ————

**TASK 34-61-00-750-801**

**7. FMC Software Configuration Check**

**A. General**

- (1) This procedure tells you how to check the FMC software installation.
- (2) You must know the correct part number for the FMC software. For the FMC to be an approved installation, software with the correct part number must be installed.

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**C. Procedure**

SUBTASK 34-61-00-750-004

- (1) Do these steps to do a software configuration check of the FMC:

**AKS ALL; AIRPLANES WITH DUAL FMC**

- (a) Set the FMCS transfer switch to the NORMAL position.

**AKS ALL**

- (b) Make sure the CDU display shows the IDENT 1/2 page.
  - (c) Do these steps if the IDENT 1/2 page is not shown:
    - 1) Push the INIT/REF key on both CDUs.
    - 2) Push the LSK next to IDENT on both CDUs.
  - (d) Do a check of the FMC operational program and navigational database software:
    - 1) Make sure the correct part number for the operational program shows below OP PROGRAM on the CDU.
    - 2) Make sure the correct part number for the navigation database shows below NAV DATA on the CDU.
    - 3) Make sure the correct date range shows below ACTIVE on the CDU.
  - (e) Push the NEXT PAGE button on the CDU.
  - (f) Make sure the CDU display shows the IDENT 2/2 page.
  - (g) Do a check of this FMC software:



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- 1) Make sure the correct part number for the software options database shows below SW OPTIONS on the CDU.  
**NOTE:** You must install the software options database for the FMC to operate. If you did not install a software options database the CDU will show DEFAULT050 below SW OPTIONS.
- 2) Make sure the correct part number for the model/engine database shows below MODEL/ENGINE DATA on the CDU.  
**NOTE:** You must install the model/engine database for the FMC to operate. If INVALID shows on the CDU, the model/engine database was not installed. If PROGRAM PIN NOT IN MODEL/ENGINE DATABASE shows, the model/engine database installed does not match the airframe/engine program pin configuration.
- 3) Make sure the correct part number is shown for any installed optional databases (Perf Defaults, Datalink, Flight plan or Loadable Default).

SUBTASK 34-61-00-470-025

- (2) If a part number is not correct, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811

———— END OF TASK ————

**TASK 34-61-00-470-807**

**8. CDU Software Installation with an Airborne Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU)**

**A. General**

- (1) This procedure tells you how to install software into the CDU with an airborne data loader.

**B. References**

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

**C. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**D. Procedure**

SUBTASK 34-61-00-760-008

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

SUBTASK 34-61-00-760-009

- (2) Make sure that this circuit breaker is closed:

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 34-61-00-470-014

- (3) Use the ADL to install the CDU software.



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**AKS ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

SUBTASK 34-61-00-840-005

- (4) Do these steps to prepare for software installation:

- (a) Do these steps at the data loader control panel:
- 1) Set the upper switch to CAPT or F/O.
  - 2) Set the system select switch to CDU.

**AKS ALL**

SUBTASK 34-61-00-470-015

- (5) Do these steps to install the CDU software:

NOTE: When you install the operational program (OPS), any software options database (OPC) that was previously installed is deleted. If an OPC is required, you must repeat these steps to install the OPC.

- (a) Put the correct software disk into the disk drive of the data loader.  
NOTE: The data load sequence starts automatically.
- (b) Follow the prompts on the DATA LOADER page.
- (c) When the message LOAD COMPLETE shows, push the eject button on the data loader and remove the disk.

NOTE: After you eject the diskette from the data loader, the CDU DATA LOADER page will be removed from the display.

NOTE: If a failure occurs, the CDU will show LOAD FAILURE and DATA LOAD INOP and one of these messages:

CHECK DBL OR INTERFACE - data loader or interface  
wiring failure

EXCEEDS CDU MEMORY - data on disk is too large for  
CDU memory

RESET COUNT EXCEEDED - five load attempts have failed

OPS INCOMPATIBLE - data is not compatible with  
the CDU OPS

CHECK MEDIA - a portion of data on the disk  
is not able to load

**AKS ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

- (d) Set the system select switch on the data loader control panel to NORMAL.

**AKS ALL**

SUBTASK 34-61-00-470-032

- (6) Make sure the software part number is correct. Do this task: CDU Software Configuration Check (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU), TASK 34-61-00-750-802.

———— END OF TASK ————

EFFECTIVITY
AKS ALL

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**TASK 34-61-00-470-808**

**9. CDU Software Installation with a Portable Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU)**

**A. General**

- (1) This procedure tells you how to install software into the CDU with a portable data loader.
- (2) A portable data loader (PDL) is not a Boeing supplied part. Refer to the PDL supplier for instructions for operation. PDLs have a disk drive for software installation from disks. Some PDLs have an internal mass storage device. If the software is stored in the PDL, then disks are not necessary.

**B. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-811	Supply Electrical Power (P/B 201)

**C. Tools/Equipment**

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

<b>Reference</b>	<b>Description</b>
COM-1915	Data Loader - ARINC 615 Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 30100 Supplier: 0BAW0 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: P2K-615A-06 Supplier: 0BAW0 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 80000-03-01010203 Supplier: 0BAW0 Opt Part #: 80000-04-01020301 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 Opt Part #: 964-0400-020 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896

**D. Location Zones**

<b>Zone</b>	<b>Area</b>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**E. Procedure**

SUBTASK 34-61-00-760-010

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

SUBTASK 34-61-00-470-016

- (2) Use a portable data loader (PDL) to install the CDU software.



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AKS 002-999 (Continued)

SUBTASK 34-61-00-840-006

- (3) Do these steps to prepare for software installation:

**AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

- (a) Make sure the system select switch on the data loader control panel (P61) is set to NORMAL.

**AKS 002-999**

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**CAUTION:** MAKE SURE THE POWER SWITCH FOR THE PORTABLE DATA LOADER IS SET TO OFF BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE POWER SWITCH IS NOT OFF, DAMAGE TO THE PORTABLE DATA LOADER CAN OCCUR.

- (c) Set the power switch on the PDL to the off position.  
(d) Connect the ARINC 615 data loader, COM-1915, interface cable from the PDL to the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.  
(e) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

- (f) Do these steps at the data loader control panel:  
1) Set the upper switch to CAPT or F/O.  
2) Set the system select switch to CDU.

**AKS 002-999**

- (g) Set the power switch on the portable data loader to the on position.

**NOTE:** For more information on how to use the data loader, refer to the suppliers instructions for the portable data loader.

**AKS 002-999; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE**

SUBTASK 34-61-00-470-017

- (4) Do these steps to install the software:

**NOTE:** When you install the operational program (OPS), any software options database (OPC) that was previously installed is deleted. If an OPC is required, you must repeat these steps to install the OPC.

**NOTE:** When the data load sequence starts, the CDU shows the DATA LOADER page.

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**AKS 002-999; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE (Continued)**

- (a) Put the correct software disk into the disk drive of the data loader.  
NOTE: The data load sequence starts automatically.
- (b) Follow the prompts on the DATA LOADER page.
- (c) When the message LOAD COMPLETE shows, push the eject button on the data loader and remove the disk.  
NOTE: Because of data loader incompatibility, LOAD COMPLETE may not be shown on the CDU after the completion of a successful data load. If the CURRENT RECORD on line 3 of the FMCS DATA LOADER page increments to the number shown for TOTAL RECORDS on line 5, then a successful data load occurred.  
NOTE: After you eject the diskette from the data loader, the CDU DATA LOADER page will be removed from the display.  
NOTE: If a failure occurs, the CDU will show LOAD FAILURE and DATA LOAD INOP and one of these messages:  
CHECK DBL OR INTERFACE - data loader or interface wiring failure  
EXCEEDS CDU MEMORY - data on disk is too large for CDU memory  
RESET COUNT EXCEEDED - five load attempts have failed  
OPS INCOMPATIBLE - data is not compatible with the CDU OPS  
CHECK MEDIA - a portion of data on the disk is not able to load

**AKS 002-999; SOFTWARE INSTALLATION WITH A PDL MASS STORAGE DEVICE**

SUBTASK 34-61-00-470-019

- (5) Follow the PDL supplier instructions to install the software.

NOTE: When you install the operational program (OPS), any software options database (OPC) that was previously installed is deleted. If an OPC is required, you must repeat these steps to install the OPC.

NOTE: When the data load sequence starts, the CDU shows the DATA LOADER page.

**AKS 002-999**

SUBTASK 34-61-00-760-012

- (6) Set the power switch on the PDL to the off position after all the software is loaded into the FMC.

**AKS 002-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

SUBTASK 34-61-00-470-020

- (7) Set the system select switch on the data loader control panel (P61) to NORMAL.

**AKS 002-999**

SUBTASK 34-61-00-470-033

- (8) Make sure the software part number is correct. Do this task: CDU Software Configuration Check (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU), TASK 34-61-00-750-802.

EFFECTIVITY	AKS ALL
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AKS 002-999 (Continued)

SUBTASK 34-61-00-840-007

- (9) Do these steps to put the airplane back to its usual condition:

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

- (b) Remove the interface cable from the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

— END OF TASK —

AKS ALL

**TASK 34-61-00-470-812**

**10. CDU Software Installation with an Enhanced Airborne Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU)**

**A. General**

- (1) This task provides instructions on how to install operational program software (OPS) into the HGS computer with an Enhanced Airborne Data Loader (eADL).
- (2) An enhanced airborne data loader (eADL) and a control display unit (CDU) are necessary for this procedure. A data loader control panel is also necessary. The data loader control panel is installed above the eADL on the P61 panel.
- (3) The eADL has two procedures for software installation:
  - (a) Floppy Disk Software Installation
  - (b) USB Flash Drive Software Installation
    - 1) This procedure uses the USB port on the front panel of the eADL to install software from a valid USB flash drive to the Mass Storage Device (MSD). After the software is installed on the MSD, the software is loaded to the LRU.
    - 2) The USB flash drive must be configured correctly. Use the USB stick creator tool specified in the eADL Operations Guide.
- (4) The airplane must be on the ground with the engines shutdown before you can install software.
- (5) To read about software installation times and data loaders, refer to this task: On-Airplane Software Installation, TASK 20-15-11-400-801.
- (6) Some airlines keep the circuit breaker for the data loader open when the data loader is not necessary. This increases the length of time that the data loader is serviceable.

EFFECTIVITY

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- (7) The word "media" refers to a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

**B. References**

<b>Reference</b>	<b>Title</b>
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)

**C. Location Zones**

<b>Zone</b>	<b>Area</b>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**D. Prepare for the Software Installation**

SUBTASK 34-61-00-470-039

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

SUBTASK 34-61-00-840-011

- (2) Set the SYSTEM SELECT switch on the data loader control panel (P61) to NORM or NORMAL.

SUBTASK 34-61-00-760-018

- (3) Make sure that this circuit breaker is closed:

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	9	C00923	DATA LOADER

SUBTASK 34-61-00-840-012

- (4) Set the upper switch on the data loader control panel (P61) to CAPT or F/O, then set the SYSTEM SELECT switch on the data loader control panel (P61) to CDU.

**E. Software Installation Procedure**

SUBTASK 34-61-00-470-040

- (1) Do these steps to install software from a floppy disk:

- (a) Wait until the display shows the eADL Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

- (b) Select "Target Page."

- 1) The eADL will show the Select Target System screen.

- (c) Select "Floppy Drive."

- 1) The eADL will show a Load Confirmation screen.

- (d) Carefully push the first disk (label up) into the disk drive.

- (e) Select "CONFIRM."

- 1) The eADL will show "LOADING" on the Transfer In Progress screen.

NOTE: It can take one to two minutes for the installation to start.

NOTE: If the disk set has more than one disk and the data of the first disk is completely transferred, the eADL will prompt you to insert the next diskette. Eject the first diskette, insert the next diskette and select "CONTINUE."



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- (f) In the Transfer In Progress screen, wait for the eADL to show "LOAD COMPLETE."
- (g) Select "MAIN" to go back to the main menu.
- (h) Eject the disk from the disk drive when the software installation is completed.

SUBTASK 34-61-00-470-041

- (2) Do these steps to install software from a USB flash drive to the eADL MSD:
  - (a) Put the USB flash drive into the eADL USB port.  
NOTE: The USB flash drive must be configured correctly by the USB stick creator tool as specified in the eADL Operations Guide.
  - (b) Make sure that the "eADL Main Menu" is shown.  
NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.  
NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.
  - (c) Select "Maintenance Page."
    - 1) This will show the "Maintenance Menu" screen.
  - (d) Select "Transfer Parts From USB."  
NOTE: If the error message "USB Is Not Mounted Or Is Not A Valid USB" is shown, select "GO BACK" and do the steps again.  
NOTE: Make sure the USB flash drive is configured correctly by the USB stick creator tool as specified in the eADL Operations Guide.
    - 1) The eADL screen will show "CONFIRM TO BEGIN TRANSFERRING."
    - 2) Select "CONFIRM."  
NOTE: The USB and MSD annunciators will turn yellow during the transfer procedure.  
NOTE: If the software is already on the eADL MSD, this message will show: "Skipping, the software part number already exists."
  - (e) When the software transfer is complete, the USB and MSD annunciators will turn green and this message will show:  
"Part Transfer Complete"  
NOTE: The annunciators will turn red if the transfer procedure is aborted or if there is a failure.
  - (f) Select "GO BACK" two times to go back to the main menu.

SUBTASK 34-61-00-470-042

- (3) Do these steps to install the software from the eADL MSD to the LRU:
  - (a) Make sure that the "eADL Main Menu" is shown.  
NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.  
NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.
  - (b) Select "Target Page."
    - 1) This will show the "Select Target System" screen.
  - (c) Select the LRU to receive the software.

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AKS ALL

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- 1) This will show the "Select Software Part" screen.
- (d) Push the "SELECT" button for the required software.  
**NOTE:** The listed software will appear as it was originally configured in the USB stick creator tool.
- (e) Make sure that the "Load Confirmation" screen shows.
- (f) Select "CONFIRM."
  - 1) This will show the "Transfer In Progress" screen.
  - 2) The "TRANSFER" annunciator will change to "LOADING" and turn yellow during the installation procedure.
  - 3) The "LOADING" annunciator will change to "COMPLETE" and turn green when the installation procedure is completed.
- (g) Select "MAIN" to go back to the main menu.

———— END OF TASK ————

**TASK 34-61-00-750-802**

**11. CDU Software Configuration Check (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU)**

**A. General**

- (1) This procedure tells you how to check the CDU software installation.

**B. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**C. Procedure**

SUBTASK 34-61-00-750-007

- (1) Do these steps to do a software configuration check of the CDU:

**AKS ALL; AIRPLANES WITH DUAL FMC**

- (a) Set the FMC source select switch to the NORMAL position.
- (b) On the MENU page, push the LSK next to FMC.

**AKS ALL**

- (c) Make sure the CDU shows the IDENT 1/2 page.
- (d) Do this step if the IDENT 1/2 page is not shown:
  - 1) Push the INIT/REF key on the applicable CDU.
- (e) Push these LSKs in sequence on the applicable CDU:
  - 1) MAINT
  - 2) FMCS

**AKS ALL; AIRPLANES WITH DUAL FMC**

- 3) FMC LEFT(RIGHT)

**AKS ALL**

- 4) LCD CDU
  - 5) CONFIG.
- (f) Make sure the CDU shows the CDU CONFIGURATION page.

EFFECTIVITY  
AKS ALL

**34-61-00**

D633A101-AKS

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- (g) Make sure the correct part number is shown below SOFTWARE P/N.

SUBTASK 34-61-00-470-026

- (2) If a part number is not correct, do this task: CDU Software Installation with an Airborne Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU), TASK 34-61-00-470-807 or CDU Software Installation with a Portable Data Loader (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU), TASK 34-61-00-470-808

————— END OF TASK ————

**TASK 34-61-00-470-809**

**12. Software Installation when the Airborne Data Loader is Inoperative**

**A. General**

- (1) This procedure tells you how to use a portable data loader (PDL) to load software when the airborne data loader (ADL) is inoperative.
- (2) A portable data loader (PDL) is not a Boeing supplied part. Refer to the PDL supplier for instructions for operation. PDLs have a disk drive for software installation from disks. Some PDLs have an internal mass storage device. If the software is stored in the PDL, then disks are not necessary.

**B. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
34-61-03-000-801	Airborne Data Loader Removal (P/B 401)
34-61-03-400-801	Airborne Data Loader Installation (P/B 401)

**C. Tools/Equipment**

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

Reference	Description
COM-261	Data Loader - ARINC 615 Part #: 11615-50 Supplier: 0D4J3 Part #: 30100 Supplier: 0BAW0 Part #: CEI-715-DL-2 Supplier: 0BPH5 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 964-0400-020 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896 Opt Part #: 964-0400-060 Supplier: 97896 Opt Part #: 964-0400-064 Supplier: 97896 Opt Part #: 964-0400-065 Supplier: 97896

**D. Procedure**

SUBTASK 34-61-00-000-001

- (1) Do this task: Airborne Data Loader Removal, TASK 34-61-03-000-801.

SUBTASK 34-61-00-760-013

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

SUBTASK 34-61-00-840-008

- (3) Do these steps to prepare for software installation:

EFFECTIVITY  
AKS ALL

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**AKS ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

- (a) Make sure the system select switch is set to NORMAL.

**AKS ALL**

**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

**CAUTION:** MAKE SURE THE POWER SWITCH FOR THE PORTABLE DATA LOADER IS SET TO OFF BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE POWER SWITCH IS NOT OFF, DAMAGE TO THE PORTABLE DATA LOADER CAN OCCUR.

- (c) Set the power switch on the PDL to the off position.
- (d) Connect the interface cable from the PDL to the aircraft wiring receptacle.
- (e) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

- (f) Set the position of the data loader control panel switch(es) to the unit that is to receive software from the PDL.
- (g) Set the power switch on the portable data loader to the on position.

SUBTASK 34-61-00-470-021

- (4) Do these steps to install the software:
  - (a) Follow the PDL supplier instructions to operate the data loader.
  - (b) Do the applicable airborne data loader procedure to complete the software installation.

SUBTASK 34-61-00-760-014

- (5) Set the power switch on the PDL to the off position after all the software is loaded into the FMC.

**AKS ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)**

SUBTASK 34-61-00-470-024

- (6) Set the system select switch to NORMAL.

**AKS ALL**

SUBTASK 34-61-00-840-009

- (7) Do these steps to put the airplane back to its usual condition:



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**CAUTION:** MAKE SURE THE CIRCUIT BREAKER FOR THE DATA LOADER IS OPEN BEFORE YOU CONNECT OR REMOVE THE INTERFACE CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

- (b) Remove the ARINC 615 data loader, COM-261, interface cable from the airplane wiring receptacle on the P61 panel.

SUBTASK 34-61-00-000-002

- (8) Do this task: Airborne Data Loader Installation, TASK 34-61-03-400-801.

————— END OF TASK ————

**TASK 34-61-00-810-801**

**13. FMC Diagnostic Data Transfer**

**A. General**

- (1) This procedure tells you how to transfer diagnostic data to a 3.5 inch diskette after an FMC failure occurs.

NOTE: A single diskette has sufficient capacity to hold data from both FMCs.

- (2) An airborne data loader (ADL) or portable data loader (PDL) is necessary for this procedure.

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**C. Procedure**

SUBTASK 34-61-00-700-014

- (1) Do a check of FMC INFLIGHT FAULTS (FIM 34-61 Task 801) to make sure an FMC failure occurred.

NOTE: You only get data for FMC failures from this procedure.

SUBTASK 34-61-00-750-008

- (2) Use the FMCPREP PC software to format the disk.

(a) You must make a copy of the FMCPREP software on the root directory of a PC hard drive.

(b) To format a disk, enter the text that follows on your PC:

> FMCPREP<DRIVE>:<Airline ID

where:

<drive> is the letter "A" or "B" of the PCs 3.5 inch disk drive.

Airline ID> is the name of the airline maintenance site (11 characters maximum).

example: FMCPREP B: Cincinnati

SUBTASK 34-61-00-750-009

- (3) Make sure the MAINT BITE INDEX 1/1 page shows on the CDU.

(a) If the MAINT BITE INDEX 1/1 page is not shown, do these steps:

- 1) Push the INIT REF key.

EFFECTIVITY  
AKS ALL

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- 2) Push the LSK adjacent to MAINT> to show the MAINT BITE INDEX 1/1 page.

SUBTASK 34-61-00-750-010

- (4) Push the LSK adjacent to FMC DOWNLOAD>.

SUBTASK 34-61-00-750-023

- (5) Follow the directions on the FMC DATA LOADER page.

- Select Capt Left System or F/O Right System on Data Load Select switch.
- Select FMC on the Data Load System Select switch.
- Select FMC Source on the Overhead Source Select Panel.

NOTE: When the FMC Source Select Switch is in the Both On Right Position the diagnostic data from the F/Os or Right FMC will be downloaded.

SUBTASK 34-61-00-750-012

- (6) Push the LSK adjacent to CONTINUE.

NOTE: If you push the LSK adjacent to PRESS HERE TO EXIT>, the FMC will do a cold start power-up.

SUBTASK 34-61-00-750-028

- (7) Do these steps to transfer FMC diagnostic data using the eADL

- Wait until the eADL display shows the eADL Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate buttons on the eADL front panel.

NOTE: If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

- Select "Target Page."

1) The eADL will show the Select Target System screen.

- Carefully push the formatted floppy disk into the data loader disk drive.

- Select "Floppy Drive."

1) The eADL will show a Load Confirmation screen:

CONFIRM TO START

SELECTED SOURCE IS

<Floppy Drive>

- Select "CONFIRM."

1) The eADL will show "LOADING" on the Transfer In Progress screen.

NOTE: The TRANSFER annunciator will change to LOADING and turn yellow during the download process. The download can take several minutes.

- In the Transfer In Progress screen, wait for the eADL to show "LOAD COMPLETE."

NOTE: The LOADING annunciator will change to COMPLETE and turn green if the upload process completes successfully.

NOTE: It will change to ABORTED or XMIT FAIL and turn red if the upload process is aborted or if it fails with an error.

- Select "MAIN" to go back to the main menu.

- Eject the disk from the disk drive when the downloading data is completed.

EFFECTIVITY
AKS ALL

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SUBTASK 34-61-00-750-013

- (8) Put the formatted disk into the data loader disk drive.

NOTE: If the disk is write protected, the FMC download will not continue from this page.  
Remove the disk and set the write-protected tab to the write position. Put the disk back into the data loader disk drive.

NOTE: The disk may only contain FMC download data.

SUBTASK 34-61-00-750-014

- (9) The FMC automatically starts the data transfer sequence.

NOTE: When the data transfer is complete, the FMC DATA LOADER page shows DOWNLOAD COMPLETE.

SUBTASK 34-61-00-750-015

- (10) Remove the disk and push the LSK adjacent to PRESS HERE TO EXIT>.

NOTE: If you push the LSK adjacent to PRESS HERE TO EXIT>, the FMC will do a cold start power-up.

SUBTASK 34-61-00-750-021

- (11) To download data from the second FMC, set the FMC Source Select Switch position to the other FMC and do the Diagnostic Data Transfer task again.

NOTE: A single diskette has sufficient capacity to hold data from both FMCs.

SUBTASK 34-61-00-750-022

- (12) After you make a copy of the data on the disk, send the disk to the vendor.

#### D. Data Transfer Failure Indications

SUBTASK 34-61-00-750-017

- (1) If the disk that you put into the data loader disk drive contains an FMC operational program or database, the FMC DATA LOADER page shows this message:

WARNING: DISK UNUSABLE

OFP OR DB DISK INSERTED

- (a) Replace the disk with a correctly formatted disk.

SUBTASK 34-61-00-750-018

- (2) If the disk that you put into the data loader disk drive is not write-protected and contains data (may be FMC diagnostic transfer data from the currently selected FMC) that is not an FMC operational program or database, the FMC DATA LOADER page shows this message:

WARNING: DISK UNUSABLE

DISK CONTAINS DATA

- (a) Remove the disk from the data loader disk drive.

- (b) Push the LSK adjacent to PRESS HERE TO RETRY>.

SUBTASK 34-61-00-750-019

- (3) If the disk that you put into the data loader disk drive is not write-protected and is not formatted by the FMCPREP software, the FMC DATA LOADER page shows this message:

WARNING: DISK UNUSABLE

FORMAT DISK USING THE

FMCPREP PC UTILITY

- (a) Remove the disk from the data loader disk drive.



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- (b) Push the LSK adjacent to PRESS HERE TO RETRY>.

SUBTASK 34-61-00-750-020

- (4) If the diagnostic data transfer is not successful for any other reason, the FMC DATALOADER page shows this message:

DEVICE NOT PRESENT

DISK WAS REMOVED OR

INTERFACE HAS FAILED

- (a) Push the LSK adjacent to PRESS HERE TO RETRY>.

———— END OF TASK ————

**TASK 34-61-00-400-801**

**14. Setting Zero Fuel Weight**

**A. General**

- (1) This procedure tells you how to enter a zero fuel weight (ZFW) using the Control Display Unit (CDU).

**B. References**

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

**C. Location Zones**

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

**D. Procedure**

SUBTASK 34-61-00-760-016

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

SUBTASK 34-61-00-869-001

- (2) Do these steps to set a zero fuel weight:
- Make sure the IDENT page shows on the CDU.
  - Push the INDEX page next to LSK 6L.
  - Push the PERF from the INIT/REF page.
  - Enter a zero fuel weight on the scratch pad.
  - Push the LSK 3L.

SUBTASK 34-61-00-869-002

- (3) Make sure the CDU display the zero fuel weight.

**E. Put the Airplane back to its usual condition**

SUBTASK 34-61-00-760-015

- (1) Remove electrical power if it is necessary Remove Electrical Power, TASK 24-22-00-860-812.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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FLIGHT MANAGEMENT COMPUTER SYSTEM - ADJUSTMENT/TEST

**1. General**

- A. This procedure contains scheduled maintenance task data.
- B. This procedure has these tasks:
  - (1) An operational test of the flight management computer system (FMCS).
  - (2) A system test of the FMCS.
  - (3) An adjustment of the FMCS performance factors.

**TASK 34-61-00-710-801**

**2. Flight Management Computer System - Operational Test**

**A. General**

- (1) The operational test does a quick check of the flight management computer system. The test makes sure that the system is serviceable.
- (2) You can do the tests in sequence or one at a time. The Prepare For Test steps must be done before each test or sequence of tests.

**AKS ALL; AIRPLANES WITH DUAL FMC AND MCDU**

- | (3) The two Multi-function Control Display Units (Left or Captain's MCDU and Right or First Officer's MCDU) are necessary for this procedure. This procedure uses two MCDUs to make sure the operational test is conducted from the two corresponding Flight Management Computers (Left and Right FMC).

**AKS ALL**

- (4) An FMC software option causes the CDU to normally show information in color. Default operation is white text on a black background.

**AKS ALL; AIRPLANES WITH DUAL FMC**

- (5) The FMCS transfer switch allows the operation of the Left FMC to be displayed on the two CDUs (or MCDUs if installed) when the transfer switch is in the NORMAL position. If the transfer switch is in the BOTH ON L or BOTH ON R position, the two CDUs (or MCDUs if installed) will display simultaneously the Left or Right Flight Management Computer output and software database configuration, respectively.

**AKS ALL**

**B. References**

Reference	Title
34-21-00-820-801	Air Data Inertial Reference System - Alignment from the FMC CDU (P/B 201)
34-21-00-820-802	Air Data Inertial Reference System - Alignment from the ISDU (P/B 201)
34-61-00-470-805	FMC Software Installation with a Portable Data Loader (P/B 201)
34-61-00-470-811	FMC Software Installation with an Enhanced Airborne Data Loader (P/B 201)

**C. Location Zones**

Zone	Area
211	Flight Compartment - Left

EFFECTIVITY  
**AKS ALL**

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**Zone      Area**

212      Flight Compartment - Right

**D. Prepare For Test**

SUBTASK 34-61-00-860-040

- (1) Do this task: Air Data Inertial Reference System - Alignment from the ISDU, TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, TASK 34-21-00-820-801.

**E. Procedure**

SUBTASK 34-61-00-710-025

- (1) Do this test of the operational program and databases:

- (a) Set the FMC transfer switch to the BOTH ON L position.
- (b) Push the INIT REF key on the two CDUs.
- (c) Push the line select key (LSK) adjacent to INDEX on the two CDUs.
- (d) Push the LSK adjacent to IDENT on the two CDUs.
- (e) Make sure the two CDUs show the IDENT 1/X page.
- (f) Make sure the part number of the OP PROGRAM is correct on the two CDUs.

NOTE: The applicable airline department has the correct part number for the OP PROGRAM.

- 1) If the OP PROGRAM is incorrect, then, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.

- (g) Make sure the part number of the NAV DATA is correct on the CDU.

NOTE: The applicable airline department has the correct part number for the NAV DATA.

- 1) If the NAV DATA is incorrect, then, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.

- (h) Make sure the date of the NAV DATA is correct on the two CDUs.

NOTE: You can find the dates for the active navigation database below ACTIVE.

- (i) Push the NEXT PAGE button on the two CDUs.

- (j) Make sure the part number of the PERF DEFAULTS is correct on the two CDUs.

NOTE: AIRPLANES WITH OP PROGRAM U10.3 AND SUBSEQUENT;

DEFAULT04P or DEFAULT05P will be shown if a customized PERF DEFAULTS diskette is not installed.

AIRPLANES WITH OP PROGRAM U10.2 AND PREVIOUS;

DEFAULT02P or DEFAULT03P will be shown if customized PERF DEFAULTS diskette is not installed.

- 1) If the PERF DEFAULTS is incorrect, then, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.

EFFECTIVITY  
AKS ALL

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- (k) Make sure the part number of the SW OPTIONS is correct on the two CDUs.  
NOTE: DEFAULTXXX will be shown if a customized software options database diskette is not installed.
- 1) If the SW OPTIONS part number is incorrect, then, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.
- (l) Make sure the part number of the MODEL/ENGINE DATA is correct on the two CDUs.  
NOTE: The applicable airline department has the correct part number for the MODEL/ENGINE DATA.
- 1) If the MODEL/ENGINE DATA part number is incorrect, then, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.

SUBTASK 34-61-00-710-026

- (2) Do this test of the FMCS sensor status:
- (a) Set the FMC transfer switch to the NORMAL position.
  - (b) Push the INIT REF key on the two CDUs.
  - (c) Push the line select key (LSK) adjacent to INDEX on the two CDUs.
  - (d) Push the LSK adjacent to MAINT on the two CDUs.
  - (e) Push the LSK adjacent to FMCS on the two CDUs.
  - (f) Push the LSK adjacent to L FMC on the Captain's CDU.
  - (g) Push the LSK adjacent to R FMC on the First Officer's CDU.
  - (h) Push the LSK adjacent to SENSORS on the two CDUs.
  - (i) Make sure the two CDUs agree with the data shown below (Table 501):

**Table 501/34-61-00-993-801**

LRU	LEFT	RIGHT
VOR	OK	OK
DME	OK	OK
ADIRS	OK	OK
MMR	OK	OK
DFCS	OK	----
FQIS	OK	----
CLOCK [L CDU] DUAL FMC	OK	----
CLOCK [R CDU] DUAL FMC	----	OK

- (j) Push the NEXT PAGE button on the two CDUs.
- (k) Make sure the status of CDS DEU LEFT and CDS DEU RIGHT is OK.
- (l) Push the INIT REF button on the two CDUs.

SUBTASK 34-61-00-710-027

- (3) Do this test of the FMCS fixed outputs:
- (a) Set the FMC transfer switch to the NORMAL position.

EFFECTIVITY  
AKS ALL

**34-61-00**



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- (b) Set the master dim and test switch to the BRT position.
- (c) Push the INIT REF key on the two CDUs.
- (d) Push the line select key (LSK) adjacent to INDEX on the two CDUs.
- (e) Push the LSK adjacent to MAINT on the two CDUs.
- (f) Push the LSK adjacent to FMCS on the two CDUs.
- (g) Push the LSK adjacent to L FMC on the Captain's CDU.
- (h) Push the LSK adjacent to R FMC on the First Officer's CDU.
- (i) Push the LSK adjacent to FIXED OUTPUTS on the two CDUs.
- (j) Turn the mode selector switch on the captain's and first officer's EFIS control panels to the MAP position.
- (k) Make sure that the captain's and first officer's EFIS display shows "FMC INTERFACE OK".
- (l) Make sure that the OFST, FAIL and MSG annunciators on the two CDUs come on.
- (m) Make sure that the Thrust Mode Annunciator on Engine Format above the N1 Display cycles through these thrust modes: CRZ, CLB, ---, CON, TO, GA.
- (n) Push the INIT REF button on the two CDUs.
- (o) Set the master dim and test switch back to the DIM position.

SUBTASK 34-61-00-860-045

- (4) Shut down the Air Data Inertial Reference System if no longer necessary.

———— END OF TASK ————

**TASK 34-61-00-730-801**

**3. Flight Management Computer System - System Test**

**A. General**

- (1) The system test does a complete check of the flight management computer system. The test makes sure that the system operates correctly.
- (2) You can do the tests in sequence or one at a time. All tests must be done to make sure system operates correctly. The Prepare For Test steps must be done before each test or sequence of tests.

**B. References**

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

**C. Location Zones**

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

**D. Access Panels**

Number	Name/Location
192CL	ECS Access Door



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Number	Name/Location
192CR	ECS Access Door

## E. Prepare For Test

SUBTASK 34-61-00-760-001

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

SUBTASK 34-61-00-800-001

- (2) Do this task: Flight Management Computer System - Operational Test, TASK 34-61-00-710-801.

## F. Procedure

SUBTASK 34-61-00-710-028

- (1) Do this test of the annunciators:

- (a) Set the FMC transfer switch to the NORMAL position.
- (b) Open this circuit breaker and install safety tag:

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	6	C01017	FMCS CMPTR 1

- (c) Make sure that the FMC P/RST annunciator on the captain's and first officer's autoflight status annunciator (ASA) comes on.
- (d) Set the master dim and test switch to the TEST position.

**AKS ALL; AIRPLANES WITH MULTI-PURPOSE CDUs**

- 1) Make sure that the MSG, CALL, FAIL, OFST, and EXEC annunciators on the two CDUs come on.

**AKS ALL**

- (e) Make sure that the FMC P/RST annunciator on the two ASAs is on.
- (f) If necessary, push the FMC P/RST annunciator on the captain's or first officer's ASA.
  - 1) Make sure that the FMC P/RST annunciator on the two ASAs goes off.
- (g) Set the master dim and test switch back to the DIM position.
- (h) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	6	C01017	FMCS CMPTR 1

NOTE: This circuit breaker must be closed for at least 15 seconds before you continue.

- (i) If the MENU page is shown on either CDU, push LSK 1L (FMC) on that CDU.
- (j) If necessary, push the CLR button on the CDU to remove all messages from the CDU scratchpad.
- (k) Do these steps to do a test of the annunciators for the right FMC:
  - 1) Set the FMC transfer switch to the NORMAL position.



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- 2) Open this circuit breaker and install safety tag:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01262	FMCS CMPTR 2

- 3) Make sure that the FMC P/RST annunciator on the captain's and first officer's autoflight status annunciator (ASA) comes on.
- 4) Set the master dim and test switch to the TEST position.
- a) Make sure that the MSG, CALL, FAIL, OFST, and EXEC annunciators on the two CDUs come on.
- 5) Make sure that the FMC P/RST annunciator on the two ASAs is on.
- 6) Push the FMC P/RST annunciator on the captain's or first officer's ASA.
- a) Make sure that the FMC P/RST annunciator on the two ASAs goes off.
- 7) Set the master dim and test switch back to the DIM position.
- 8) Remove the safety tag and close this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01262	FMCS CMPTR 2

NOTE: This circuit breaker must be closed for at least 15 seconds before you continue.

- 9) If the MENU page is shown on either CDU, push LSK 1L (FMC) on that CDU.
- 10) If necessary, push the CLR button on the CDU to remove all messages from the CDU scratchpad.

SUBTASK 34-61-00-730-001

- (2) Do this test of the pack valves:

- (a) Set the FMC transfer switch to the NORMAL position.
- (b) Push this sequence of keys on the two CDUs to show the FMCS ANALOG DISCRETE 1/4 page:
- 1) Push the INIT REF mode key on the two CDUs.
  - 2) Push line select key (LSK) adjacent to INDEX on the two CDUs.
  - 3) Push LSK 6R, adjacent to MAINT on the two CDUs.
  - 4) Push the LSK adjacent to FMCS on the two CDUs.
  - 5) Push the LSK adjacent to L FMC on the Captain's CDU.
  - 6) Push the LSK adjacent to R FMC on the First Officer's CDU.
  - 7) Push LSK 4L, adjacent to DISCRETES on the two CDUs.
- (c) Make sure the L PACK and R PACK switches, located on the P5 overhead panel, are in the OFF position.
- (d) Make sure the BLEED 1 and BLEED 2 switches are in the ON position.
- (e) Make sure the L PACK and R PACK valve discrete status to reflect OFF.
- (f) To get access to the left pack valve, open this access panel:

Number      Name/Location

192CL      ECS Access Door

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- (g) Remove connector D41500 from the left pack valve, V18.
- (h) Make sure the two CDUs agree with the data shown below (Table 502):

**Table 502/34-61-00-993-802**

Test Step	Switch Name	Switch Position	CDU Discrete Name	Discrete Status Left	Discrete Status Right
1	L PACK	AUTO	ECS PACK	ON	OFF
2	L PACK	HIGH	ECS PACK	ON	OFF

- (i) To get access to the right pack valve, open this access panel:

**Number      Name/Location**

192CR      ECS Access Door

- (j) Remove connector D41600 from the right pack valve, V19.

- (k) Make sure the two CDUs agree with the data shown below (Table 503):

**Table 503/34-61-00-993-803**

Test Step	Switch Name	Switch Position	CDU Discrete Name	Discrete Status Left	Discrete Status Right
1	R PACK	AUTO	ECS PACK	ON	ON
2	R PACK	HIGH	ECS PACK	ON	ON
3	R PACK	OFF	ECS PACK	ON	ON
4	L PACK	OFF	ECS PACK	ON	ON

- (l) Connect connector D41500 to the left pack valve, V18.

- (m) Connect connector D41600 to the right pack valve, V19.

- (n) Make sure the L PACK and R PACK valve discrete status to reflect OFF.

- (o) Close this access panel:

**Number      Name/Location**

192CL      ECS Access Door

- (p) Close this access panel:

**Number      Name/Location**

192CR      ECS Access Door

- (q) Make sure the two CDUs agree with the data shown below (Table 504):

**Table 504/34-61-00-993-804**

Test Step	Switch Name	Switch Position	CDU Discrete Name	Discrete Status Left	Discrete Status Right
1	L PACK	OFF	ECS PACK H/L	HI	HI
2	L PACK	AUTO	ECS PACK H/L	LO	HI
3	L PACK	HIGH	ECS PACK H/L	HI	HI
4	R PACK	OFF	ECS PACK H/L	HI	HI
5	R PACK	AUTO	ECS PACK H/L	HI	LO
6	R PACK	HIGH	ECS PACK H/L	HI	HI

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- (r) Put the L PACK and R PACK switches to the OFF position.

SUBTASK 34-61-00-730-002

- (3) Do this test of the isolation valve:
- Set the FMC transfer switch to the NORMAL position.
  - Make sure that the FMCS ANALOG DISCRETES 1/4 page is shown on the two CDUs.
    - If the FMCS ANALOG DISCRETES 1/4 page is not shown, push this sequence of keys on the CDU:
      - Push the INIT REF mode key on the two CDUs.
      - Push line select key (LSK) 6L, adjacent to INDEX on the two CDUs.
      - Push LSK 6R, adjacent to MAINT on the two CDUs.
      - Push the LSK adjacent to FMCS on the two CDUs.
      - Push the LSK adjacent to L FMC on the Captain's CDU.
      - Push the LSK adjacent to R FMC on the First Officer's CDU.
      - Push LSK 4L, adjacent to DISCRETES on the two CDUs.
  - Put the L PACK and R PACK switches on the Pilot's Forward Overhead Panel (P5) to the HIGH position.
  - Put the ISOLATION VALVE switch on the Pilot's Forward Overhead Panel (P5) to the CLOSE position.
    - Make sure the ISOL VALVE discrete on the two CDUs shows CL.
  - Put the ISOLATION VALVE switch to the OPEN position.
    - Make sure the ISOL VALVE discrete on the two CDUs shows OP.
  - Put the L PACK and R PACK switches on the Pilot's Forward Overhead Panel (P5) to the OFF position.

SUBTASK 34-61-00-730-003

- (4) Do this test of the anti-ice discretes:
- Set the FMC transfer switch to the NORMAL position.
  - Make sure that the FMCS ANALOG DISCRETES 1/4 page is shown on the two CDUs.
    - If the FMCS ANALOG DISCRETES 1/4 page is not shown, push this sequence of keys on the CDU:
      - Push the INIT REF mode key on the two CDUs.
      - Push line select key (LSK) 6L, adjacent to INDEX on the two CDUs.
      - Push LSK 6R, adjacent to MAINT on the two CDUs.
      - Push the LSK adjacent to FMCS on the two CDUs.
      - Push the LSK adjacent to L FMC on the Captain's CDU.
      - Push the LSK adjacent to R FMC on the First Officer's CDU.
      - Push LSK 4L, adjacent to DISCRETES on the two CDUs.
  - Put the L PACK and R PACK switches on the forward overhead panel (P5) to the HIGH position.
  - Make sure the ENG ANTI-ICE 1 and ENG ANTI-ICE 2 switches are set to the OFF position.
  - Make sure the WING ANTI-ICE switch is set to the OFF position.

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**WARNING:** MAKE SURE THAT THE GROUND LOCKS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Make sure the ground locks are installed in the nose and main landing gear (TASK 32-00-01-480-801).
- (g) Make sure EXISTING FAULTS shows on the PSEU control panel, M02601.
  - 1) If the PSEU control panel is off, push the ON/OFF button.
  - 2) If EXISTING FAULTS? does not show, push the MENU button.
    - a) Push the MENU button until EXISTING FAULTS? shows.
- (h) Push the DOWN ARROW button on the PSEU control panel three times.
  - 1) Make sure AIR/GND OVRD? shows on the PSEU control panel.
- (i) Push the YES button on the PSEU control display panel.
  - 1) Make sure SET SYS1 IN AIR? shows on the PSEU control panel.
- (j) Push the YES button on the PSEU control panel.
  - 1) Make sure ARE YOU SURE? shows on the PSEU control panel.
- (k) Push the YES button on the PSEU control panel.
  - 1) Make sure SYS1 IS IN AIR changes to SET SYS1 ON GND? on the PSEU control panel.

NOTE: The flight deck PSEU fault light will stay ON while the AIR/GND system is overridden.

  - 2) Make sure the OLEO SWITCH discrete on the two CDUs changes from GND to AIR.
- (l) Put the WING ANTI-ICE switch to the ON position.
  - 1) Make sure the WING A/ICE discrete on the two CDUs changes to ON.
- (m) Put the WING ANTI-ICE switch to the OFF position.
  - 1) Make sure the WING A/ICE discrete on the two CDUs changes to OFF.
- (n) Push the MENU button on the PSEU control panel.
  - 1) Make sure RESET OVRD? shows on the PSEU control panel.
- (o) Push the YES button on the PSEU control display panel.
  - 1) Make sure ARE YOU SURE? shows on the PSEU control panel.
- (p) Push the YES button on the PSEU control panel.
  - 1) Make sure OVRD RESET changes to AIR/GND OVRD? on the PSEU control panel.
  - 2) Make sure the OLEO SWITCH discrete on the two CDUs changes from AIR to GND.
- (q) Put the ENG ANTI-ICE 1 switch to the ON position.
  - 1) Make sure the COWL A/ICE LEFT discrete on the two CDUs changes to ON.
  - 2) Make sure the COWL A/ICE RIGHT discrete on the two CDUs shows OFF.
- (r) Put the ENG ANTI-ICE 1 switch to the OFF position.
  - 1) Make sure the COWL A/ICE LEFT discrete on the two CDUs changes to OFF.
- (s) Put the ENG ANTI-ICE 2 switch to the ON position.

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- 1) Make sure the COWL A/ICE LEFT discrete on the two CDUs shows OFF.
- 2) Make sure the COWL A/ICE RIGHT discrete on the two CDUs changes to ON.
- (t) Put the ENG ANTI-ICE 2 switch to the OFF position.
  - 1) Make sure the COWL A/ICE RIGHT discrete on the two CDUs changes to OFF.
- (u) Put the L PACK and R PACK switches to the OFF position.
- (v) Remove the ground locks in the nose and main landing gear, if no longer required:  
Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801

SUBTASK 34-61-00-730-004

- (5) Do this test of the air/ground discrete:
  - (a) Set the FMC transfer switch to the NORMAL position.
  - (b) If the FMCS ANALOG DISCRETES 1/4 page is not shown, push this sequence of keys on the CDU:
    - 1) Push the INIT REF mode key on the two CDUs.
    - 2) Push line select key (LSK) 6L, adjacent to INDEX on the two CDUs.
    - 3) Push LSK 6R, adjacent to MAINT on the two CDUs.
    - 4) Push the LSK adjacent to FMCS on the two CDUs.
    - 5) Push the LSK adjacent to L FMC on the Captain's CDU.
    - 6) Push the LSK adjacent to R FMC on the First Officer's CDU.
    - 7) Push LSK 4L, adjacent to DISCRETES.

**WARNING:** MAKE SURE THAT THE GROUND LOCKS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE GROUND LOCKS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (c) Make sure the ground locks are installed in the nose and main landing gear (TASK 32-00-01-480-801).
- (d) Make sure EXISTING FAULTS shows on the PSEU control panel, M02601.
  - 1) If the PSEU control panel is off, push the ON/OFF button.
  - 2) If EXISTING FAULTS? does not show, push the MENU button.
    - a) Push the MENU button until EXISTING FAULTS? shows.
- (e) Push the DOWN ARROW button on the PSEU control panel three times.
  - 1) Make sure AIR/GND OVRD? shows on the PSEU control panel.
- (f) Push the YES button on the PSEU control display panel.
  - 1) Make sure SET SYS1 IN AIR? shows on the PSEU control panel.
- (g) Push the YES button on the PSEU control panel.
  - 1) Make sure ARE YOU SURE? shows on the PSEU control panel.
- (h) Push the YES button on the PSEU control panel.
  - 1) Make sure SYS1 IS IN AIR changes to SET SYS1 ON GND? on the PSEU control panel.

NOTE: The flight deck PSEU fault light will stay ON while the AIR/GND system is overridden.

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- 2) Make sure the OLEO SWITCH discrete on the two CDUs changes from GND to AIR.
  - (i) Push the MENU button on the PSEU control panel.
    - 1) Make sure RESET OVRD? shows on the PSEU control panel.
  - (j) Push the YES button on the PSEU control display panel.
    - 1) Make sure ARE YOU SURE? shows on the PSEU control panel.
  - (k) Push the YES button on the PSEU control panel.
    - 1) Make sure OVRD RESET changes to AIR/GND OVRD? on the PSEU control panel.
    - 2) Make sure the OLEO SWITCH discrete on the two CDUs changes from AIR to GND.

SUBTASK 34-61-00-730-005

- (6) Do this test of the engine bleed discretes:
  - (a) Push the NEXT PAGE button on the two CDUs.
  - (b) Set the FMC transfer switch to the NORMAL position.
  - (c) Make sure that the FMCS ANALOG DISCRETES 3/4 page is shown on the two CDUs.
    - 1) If the FMCS ANALOG DISCRETES 3/4 page is not shown, push this sequence of keys on the CDU:
      - a) Push the INIT REF mode key on the two CDUs.
      - b) Push line select key (LSK) 6L, adjacent to INDEX on the two CDUs.
      - c) Push LSK 6R, adjacent to MAINT on the two CDUs.
      - d) Push the LSK adjacent to FMCS on the two CDUs.
      - e) Push the LSK adjacent to L FMC on the Captain's CDU.
      - f) Push the LSK adjacent to R FMC on the First Officer's CDU.
      - g) Push LSK 4L, adjacent to DISCRETES on the two CDUs.
    - 2) Push the NEXT PAGE button two times on the two CDUs.
  - (d) Make sure the BLEED 1 and BLEED 2 switches, located on the P5 forward overhead panel, are in the OFF position.
  - (e) Make sure the two CDUs agree with the data below (Table 505):

**Table 505/34-61-00-993-805**

Test Step	Switch Name	Switch Position	CDU Discrete Name	Discrete Status NO. 1	Discrete Status NO. 2
1	BLEED 1	ON	ENGINE BLEED	ON	OFF
2	BLEED 1	OFF	ENGINE BLEED	OFF	OFF
3	BLEED 2	ON	ENGINE BLEED	OFF	ON
4	BLEED 2	OFF	ENGINE BLEED	OFF	OFF

SUBTASK 34-61-00-730-006

- (7) Do this test of the program pins:
  - (a) Push the PREV PAGE button two times on the two CDUs.
  - (b) Set the FMC transfer switch to the NORMAL position.
  - (c) Make sure that the FMCS ANALOG DISCRETES 2/4 page is shown on the two CDUs.

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- 1) If the FMCS ANALOG DISCRETES 2/4 page is not shown, push this sequence of keys on the CDU:
  - a) Push the INIT REF mode key on the two CDUs.
  - b) Push line select key (LSK) 6L, adjacent to INDEX on the two CDUs.
  - c) Push LSK 6R, adjacent to MAINT on the two CDUs.
  - d) Push the LSK adjacent to FMCS on the two CDUs.
  - e) Push the LSK adjacent to L FMC on the Captain's CDU.
  - f) Push the LSK adjacent to R FMC on the First Officer's CDU.
  - g) Push LSK 4L, adjacent to DISCRETES on the two CDUs.
  - h) Push the NEXT PAGE button on the two CDUs.
- (d) Make sure the two CDUs agree with the data below (Table 506):

**Table 506/34-61-00-993-A18**

Discrete	State
JAA FLT RULES	ENABLE
KILOGRAM OPTION	ENABLE
MAG/TRUE	MAG
SRCE/DEST IDENT	*[1] * <sup>[2]</sup>
ASPIRATED TAT	DISABLE
°C/F DEFAULT	°C
PERF CODE	1

\*[1] The SOURCE/DEST IDENT shows LEFT on the left CDU.

\*[2] The SOURCE/DEST IDENT shows RIGHT on the right CDU.

- (e) Push the NEXT PAGE button on the two CDUs.
- (f) Set the FMC transfer switch to the NORMAL position.
- (g) Make sure the MODEL/ENG discrete on the two CDUs shows VALID.
- (h) Push the NEXT PAGE button on the two CDUs.
  - 1) Make sure the FMCS ANALOG DISCRETES 4/4 page is shown on the two CDUs.
- (i) Make sure the two CDUs agree with the data below (Table 507):

**Table 507/34-61-00-993-A19**

Discrete	State
VOR INHIBIT	DISABLE
FLIGHT NUMBER	ENABLE
TOGA RW POS UPD	ENABLE
TAKEOFF PROFILE	ENABLE
TAKEOFF SPEEDS	DISABLE
NAVAID SUPPRESS	ENABLE
SEL CRS INHIBIT	DISABLE

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**Table 507/34-61-00-993-A19 (Continued)**

Discrete	State
ACARS INSTALLED	ON

(j) Press LSK 6L, adjacent to INDEX.

SUBTASK 34-61-00-730-007

- (8) Do this test of the model/engine configuration:
  - (a) Set the FMC transfer switch to the NORMAL position.
  - (b) Make sure that the FMCS BITE page is shown on the two CDUs.
    - 1) If the FMCS BITE page is not shown, push this sequence of keys on the CDU:
      - a) Push the INIT REF mode key.
      - b) Push line select key (LSK) 6L, adjacent to INDEX.
      - c) Push LSK 6R, adjacent to MAINT.
      - d) Push the LSK adjacent to FMCS.
      - e) Push the LSK adjacent to L FMC on the Captain's CDU.

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- f) Push the LSK adjacent to R FMC on the First Officer's CDU.

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- (c) Push LSK 1R, adjacent to MODEL/ENG.
  - 1) Make sure the FMCS MODEL/ENG CFG 1/1 page is shown on the two CDUs.
- (d) Make sure the two CDUs agree with the data below (Table 508):

**Table 508/34-61-00-993-A20**

Parameter	Value
MODEL	737-800W*[1]
BRAKE OPT	CAT_C/N
ENGINE	CFM56-7B
ENGINE OPT	SAC or SAC/3 or SAC/3F
<b>AKS 007, 008, 011, 012, 014</b>	
ENG RATINGS FULL TO-1 TO-2 BUMP	24K 22K NONE NONE
<b>AKS 001-010, 013, 015-999</b>	
ENG RATINGS FULL BUMP	26K NONE

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**AKS 001-010, 013, 015-999 (Continued)**

**Table 508/34-61-00-993-A20 (Continued)**

Parameter	Value
<b>AKS 007, 008, 011, 012, 014</b>	
ENG RATINGS	24K
FULL	NONE
BUMP	
<b>AKS ALL</b>	

\*[1] The W.x indicates winglets are installed, and a one or two position tail skid (x=1 or 2) is also installed.

- (e) Push LSK 6L, adjacent to INDEX.

SUBTASK 34-61-00-730-008

- (9) Do this test of the software options:
  - (a) Set the FMC transfer switch to the NORMAL position.
  - (b) Make sure that the FMCS BITE page is shown on the two CDUs.
    - 1) If the FMCS BITE page is not shown, push this sequence of keys on the CDU:
      - a) Push the INIT REF mode key.
      - b) Push line select key (LSK) 6L, adjacent to INDEX.
      - c) Push LSK 6R, adjacent to MAINT.
      - d) Push the LSK adjacent to FMCS.
      - e) Push the LSK adjacent to L FMC on the Captain's CDU.
      - f) Push the LSK adjacent to R FMC on the First Officer's CDU.
  - (c) Push LSK 2R, adjacent to SW OPTIONS.
    - 1) Make sure the FMCS SW OPTIONS page is shown on the two CDUs.
  - (d) Make sure the two CDUs agree with the data below (Table 509):

**Table 509/34-61-00-993-A22**

Parameter	Value
<b>AKS 001, 005</b>	
OPTION CODE	08202C6103F0
<b>AKS 002-004</b>	
OPTION CODE	08202C7083F0
<b>AKS 007</b>	
OPTION CODE	08202C7183F0
<b>AKS 006</b>	
OPTION CODE	08202C79C3F0

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**AKS 006 (Continued)**

**Table 509/34-61-00-993-A22 (Continued)**

Parameter	Value
<b>AKS 001-007</b>	
DEFAULT RNP	
OCEANIC	12.0
ENROUTE	2.00
TERMINAL	1.00
APPROACH	0.30
<b>AKS ALL</b>	

- (e) Push LSK 6L, adjacent to INDEX.

SUBTASK 34-61-00-730-009

- (10) Do this test of the performance factors:
- (a) Set the FMC transfer switch to the NORMAL position.
  - (b) Make sure that the FMCS BITE page is shown on the two CDUs.
    - 1) If the FMCS BITE page is not shown, push this sequence of keys on the CDU:
      - a) Push the INIT REF mode key.
      - b) Push line select key (LSK) 6L, adjacent to INDEX.
      - c) Push LSK 6R, adjacent to MAINT.
      - d) Push the LSK adjacent to FMCS.
      - e) Push the LSK adjacent to L FMC on the Captain's CDU.
      - f) Push the LSK adjacent to R FMC on the First Officer's CDU.
  - (c) Push LSK 3R, adjacent to PERF FACTR.
    - 1) Make sure the FMCS PERF FACTORS 1/1 page is shown on the two CDUs.
  - (d) Make sure the two CDUs agree with the data below (Table 510):

NOTE: The values shown in the table below are factory defaults. If a different value is desired, do this task: FMCS Performance Factors - Adjustment (TASK 34-61-00-800-801).

**Table 510/34-61-00-993-A23**

Parameter	Value
DRAG FACTOR	+0.0
F-F FACTOR	+0.0
MNVR MARGIN	1.30
MIN CRZ TIME	1
MIN R/C	
CLB	300
CRZ	100
ENG OUT	100

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**G. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-00-760-002

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

———— END OF TASK ————

**TASK 34-61-00-800-801**

**4. FMCS Performance Factors - Adjustment**

**A. General**

- (1) This task gives steps to adjust these performance factors:
- (a) Drag factor
  - (b) F-F factor
  - (c) Maneuver margin
  - (d) Minimum cruise time
  - (e) Minimum rate of climb (climb) margin
  - (f) Minimum rate of climb (cruise) margin
  - (g) Minimum rate of climb (engine out) margin.
- (2) You can do these adjustments in sequence or one at a time. The Prepare For Adjustment steps must be done before each adjustment or sequence of adjustments.

NOTE: If a factor has had its entry capability disabled by a loadable performance defaults database, you cannot change its value using this procedure. You must load a new performance defaults database with the new factor value.

- (3) The Control Display Unit (CDU) is necessary for this procedure. You can use CDU No. 1 or CDU No. 2 to do this procedure.

NOTE: The term 'CDU' is generic, and is used interchangeably with 'MCDU' except for specific references.

**B. References**

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

**C. Location Zones**

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

**D. Prepare For Adjustment**

SUBTASK 34-61-00-760-003

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

SUBTASK 34-61-00-860-044

- (2) Set the FMC transfer switch to the NORMAL position.

SUBTASK 34-61-00-940-001

- (3) Push this sequence of keys on the CDU:

- (a) Push the INIT REF key.
- (b) Push line select key (LSK) 6L, adjacent to INDEX.



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- (c) Push LSK 6R, adjacent to MAINT.
- (d) Push the LSK adjacent to FMCS.
- (e) Push the LSK adjacent to L FMC on the Captain's CDU.
- (f) Push the LSK adjacent to R FMC on the First Officer's CDU.
- (g) Push LSK 3R, adjacent to PERF FACTR.
- (h) Push this sequence of keys on the CDU: "A", "R", "M".
- (i) Push LSK 6R, adjacent to ---.

**E. Procedure**

SUBTASK 34-61-00-820-001

- (1) Do this adjustment of the drag factor:

- (a) Push the sequence of keys for the new DRAG FACTOR value.

NOTE: Values between -9.9 and +9.9 (%) are permitted. The default value is +0.0 (%).

- (b) Push LSK 2L.

- 1) Make sure the new value of DRAG FACTOR is shown adjacent to LSK 2L.

SUBTASK 34-61-00-820-002

- (2) Do this adjustment of the f-f factor:

- (a) Push the sequence of keys for the new F-F FACTOR value.

NOTE: Values between -9.9 and +9.9 (%) are permitted. The default value is +0.0 (%).

- (b) Push LSK 3L.

- 1) Make sure the new value of F-F FACTOR is shown adjacent to LSK 3L.

SUBTASK 34-61-00-820-003

- (3) Do this adjustment of the maneuver margin:

- (a) Push the sequence of keys for the new MNVR MARGIN value.

NOTE: Values between 1.30 and 1.60 are permitted. The default value is 1.30.

- (b) Push LSK 4L.

- 1) Make sure the new value of MNVR MARGIN is shown adjacent to LSK 4L.

SUBTASK 34-61-00-820-004

- (4) Do this adjustment of the minimum cruise time:

- (a) Push the sequence of keys for the new MIN CRZ TIME value.

NOTE: Values between 1 and 20 (minutes) are permitted. The default value is 1.

- (b) Push LSK 5L.

- 1) Make sure the new value of MIN CRZ TIME is shown adjacent to LSK 5L.

SUBTASK 34-61-00-820-005

- (5) Do this adjustment of the minimum rate of climb (climb) margin:

- (a) Push the sequence of keys for the new MIN R/C CLB value.

NOTE: Values between 0 and 999 are permitted. The default value is 300.

- (b) Push LSK 3R.

- 1) Make sure the new value of MIN R/C CLB is shown adjacent to LSK 3R.

SUBTASK 34-61-00-820-006

- (6) Do this adjustment of the minimum rate of climb (cruise) margin:

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AKS ALL

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**737-600/700/800/900**  
**AIRCRAFT MAINTENANCE MANUAL**

- (a) Push the sequence of keys for the new MIN R/C CRZ value.  
NOTE: Values between 0 and 999 are permitted. The default value is 100.
- (b) Push LSK 4R.
  - 1) Make sure the new value of MIN R/C CRZ is shown adjacent to LSK 4R.

SUBTASK 34-61-00-820-007

- (7) Do this adjustment of the minimum rate of climb (engine out) margin:
  - (a) Push the sequence of keys for the new MIN R/C ENG OUT value.  
NOTE: Values between 0 and 500 are permitted. The default value is 100.
  - (b) Push LSK 5R.
    - 1) Make sure the new value of MIN R/C ENG OUT is shown adjacent to LSK 5R.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-00-860-039

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

———— END OF TASK ————



**34-61-00**

D633A101-AKS



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AIRCRAFT MAINTENANCE MANUAL

FMCS CONTROL DISPLAY UNIT - MAINTENANCE PRACTICES

**1. General**

- A. This procedure contains four tasks. The first task is the cleaning of the FMCS Control Display Units (CDU) cooling vent and surfaces. The second task is the cleaning of the CDU display. The third task is the removal of the CDU keyboard. The fourth task is the installation of the CDU keyboard.
- B. You can find the CDU(s) in the flight compartment on the forward electronic panel, P9. You can replace the keyboard when one of the keys does not operate.
- C. An FMC software option causes the CDU to normally show information in color. Default operation is white text on a black background.

**TASK 34-61-01-100-801**

**2. FMCS CDU Cooling Vent and Surfaces Cleaning**

Figure 201

**A. References**

Reference	Title
20-30-31-910-801	Cleaners and Polishes (P/B 201)
34-61-01-000-802	FMCS Control Display Unit (CDU) Removal (P/B 401)
34-61-01-400-802	FMCS Control Display Unit (CDU) Installation (P/B 401)

**B. Tools/Equipment**

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

Reference	Description
COM-2618	Cleaner - Vacuum Part #: 98606 Supplier: 08531 Part #: BP80 Supplier: \$0373 Part #: R80 Supplier: \$0373 Part #: RSV130 Supplier: \$1291 Opt Part #: 02146A Supplier: 0A5X2 Opt Part #: 44SPEC Supplier: 0Y8U0 Opt Part #: 655406-7M Supplier: 0Y8U0 Opt Part #: C-39485-41 Supplier: 16893 Opt Part #: C-39485-42 Supplier: 16893 Opt Part #: WD80 Supplier: \$0373

**C. Consumable Materials**

Reference	Description	Specification
B00673	Detergent - Liquid - Liqui-Nox	
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	BMS15-5 Class A

**D. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**E. Control Display Unit (CDU) Cooling Vent and Surfaces Cleaning**

SUBTASK 34-61-01-020-001

- (1) Do this task: FMCS Control Display Unit (CDU) Removal, TASK 34-61-01-000-802.

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AKS ALL

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**AIRCRAFT MAINTENANCE MANUAL**

**AKS ALL; AIRPLANES WITH LCD CDUS (P/N S242A600-XXXX)**

SUBTASK 34-61-01-100-003

(2) Clean the cooling vents:

- (a) Use a vacuum cleaner, COM-2618 to remove blockage from the LCD backlight cooling vents, top and bottom central chamber cooling vent, and the rear chamber vent.
- (b) Inspect for any loose debris and dust buildup that remains in the vent openings.
- (c) Do these steps if any debris and dust remain in the display unit vent openings. The display unit cover panels do not need to be removed for these steps.
  - 1) Use protective eyewear and dust mask as required.
  - 2) Blow pressurized air controlled at 40 to 90 psi through and around these display unit locations:
    - a) Rear chamber vent opening.
    - b) Top and bottom central chamber cooling vent. For the top vent the air should be blown toward the display unit keyboard.
    - c) LCD backlight cooling vents.
  - 3) Use the vacuum to remove dirt and dust debris.
  - 4) Repeat these cleaning steps as necessary since debris may dislodge and move into other areas of the display unit.
- (d) Inspect the LCD backlight cooling vents to make sure they are clear of debris. If significant amounts of debris still remain, this could result in a cooling airflow blockage and reduced display unit reliability.

NOTE: It is recommended that the unit be returned to the supplier for cleaning if significant debris remains after this procedure is completed.

**AKS ALL**

SUBTASK 34-61-01-160-001

(3) Do these steps to clean the CDU surfaces:

- (a) Remove dust and dirt with a vacuum cleaner, COM-2618.
- (b) Clean the surfaces with a paper towel or soft cloth moist with Liqui-Nox detergent, B00673, and water (TASK 20-30-31-910-801).
- (c) Remove the remaining detergent with a cotton wiper, G00034, moist with water.

SUBTASK 34-61-01-420-001

(4) Do this task: FMCS Control Display Unit (CDU) Installation, TASK 34-61-01-400-802.

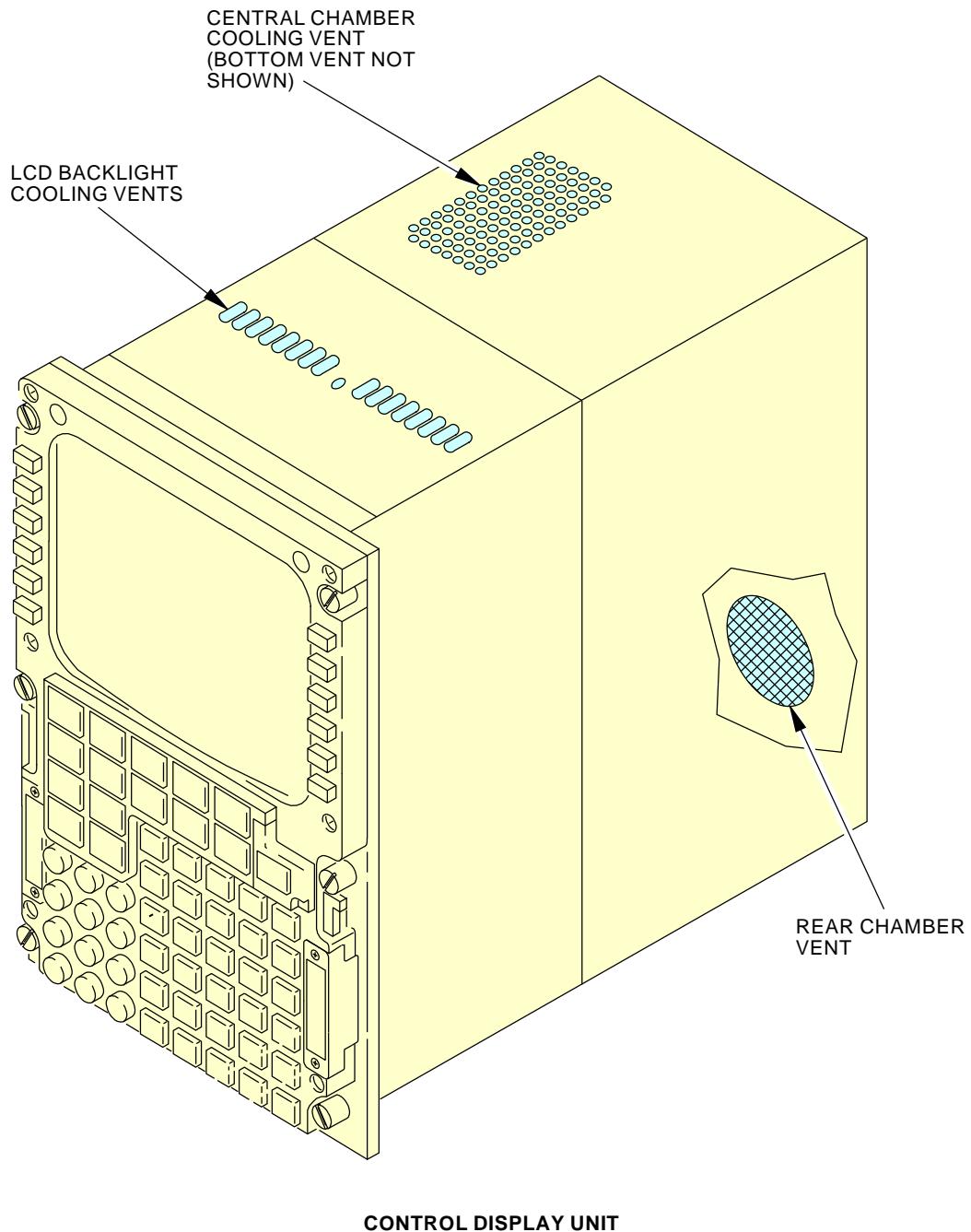
———— END OF TASK ————

EFFECTIVITY
AKS ALL

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U49343 S0000197517\_V3

**Control Display Unit - Cooling Vent Locations**  
Figure 201/34-61-01-990-804

EFFECTIVITY  
AKS ALL; AIRPLANES WITH LCD CDUS (P/N  
S242A600-XXXX)

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**TASK 34-61-01-100-802**

**3. FMCS CDU Display Cleaning**

**A. Consumable Materials**

<b>Reference</b>	<b>Description</b>	<b>Specification</b>
B50012	Cleaner - Optical Cleaning, Calotherm Solution - Supaspray	
B50013	Cloth - Calocoat Hi-Tech Lenscloth - Supacloth	
G02457	Cleaner - Wet/Dry Anti-Static Sachet - ALGLAS Visial ALG/CR 215	

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**C. Procedure**

SUBTASK 34-61-01-100-002

- (1) Clean the display surface of the FMCS control display unit (CDU) with the Supaspray cleaner, B50012, and the Supacloth cloth, B50013, or the ALGLAS Visial cleaner, G02457:
  - (a) Apply 2 or 3 sprays of the Supaspray to the Supacloth, or open the wet sachet.
  - (b) Use the moist cloth or the wet sachet to clean the display surface in a straight line from top to bottom.
  - (c) Gradually move from one side of the display surface to the other side while you clean from top to bottom.
  - (d) When the display surface is clean, use a clean, dry area of the cloth or the dry sachet in a straight line from top to bottom to dry the display surface.

— END OF TASK —

**TASK 34-61-01-000-801**

**4. FMCS CDU Keyboard Removal**

(Figure 202)

**A. Location Zones**

<b>Zone</b>	<b>Area</b>
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**B. Procedure**

**AKS ALL; AIRPLANES WITH DUAL FMC AND MCDU**

SUBTASK 34-61-01-860-024

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

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1



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AKS ALL; AIRPLANES WITH DUAL FMC AND MCDU (Continued)

F/O Electrical System Panel, P6-1

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

AKS ALL; AIRPLANES WITH LCD CDUS (P/N S242A600-XXXX)

SUBTASK 34-61-01-000-001

- (2) Do these steps to remove the Control Display Unit (CDU) keyboard:
  - (a) Loosen the six captive screws that hold the keyboard to the front chassis.
  - (b) Carefully move the keyboard away from the front chassis to get access to the cable assembly.
  - (c) Remove and retain the display gasket.
  - (d) Unlock and disconnect cable assembly connector W1P1 from connector DS1J1.

AKS ALL

———— END OF TASK ————

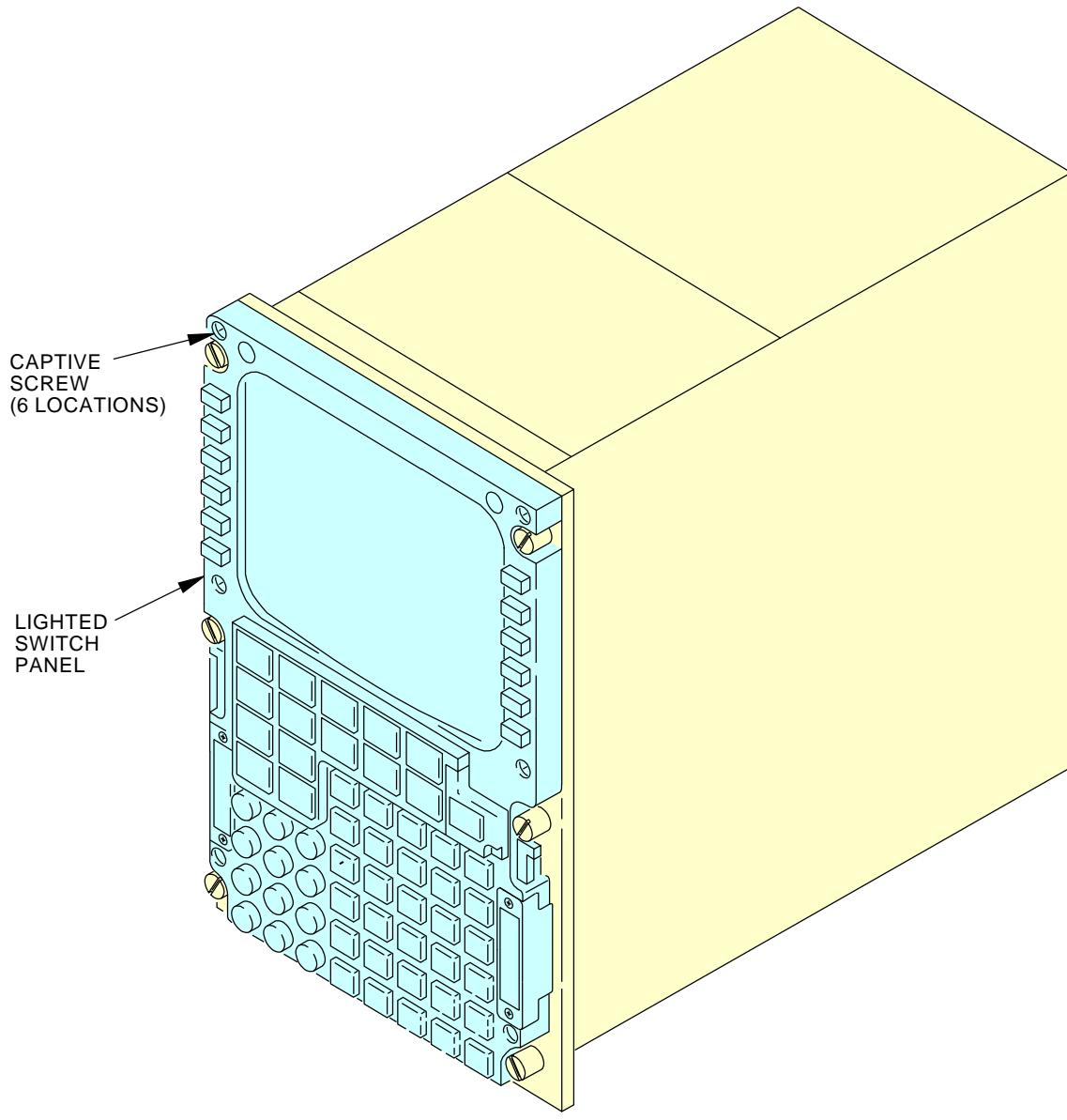
EFFECTIVITY

AKS ALL

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**CONTROL DISPLAY UNIT**

F54595 S0006577342\_V3

**Control Display Unit - Lighted Switch Panel Replacement**  
**Figure 202/34-61-01-990-801**

EFFECTIVITY  
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**TASK 34-61-01-400-801**

**5. FMCS CDU Keyboard Installation**

(Figure 202)

**A. References**

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-61-01-710-801	CDU Lamp Test (P/B 301)

**B. Location Zones**

Zone	Area
210	Subzone - Control Compartment - Body Station 178.00 to Body Station 259.50

**C. Procedure**

**AKS ALL; AIRPLANES WITH LCD CDUS (P/N S242A600-XXXX)**

SUBTASK 34-61-01-400-001

- (1) Do these steps to install the Control Display Unit (CDU) keyboard:

NOTE: Make sure you install a keyboard with the same part number as the one you removed.

- (a) Make sure the display gasket is correctly aligned.
- (b) Connect and lock cable assembly connector W1P1 to connector DS1J1.
- (c) Position keyboard on the front chassis.
- (d) Tighten the six captive screws that hold the keyboard to the front chassis.

**AKS ALL**

SUBTASK 34-61-01-860-026

- (2) Close these circuit breakers:

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

**D. CDU Keyboard Test**

SUBTASK 34-61-01-860-005

- (1) Prepare for the CDU keyboard test:

- (a) Make sure that the BAT switch on the Pilot's Forward Overhead Panel is in the ON position.
- (b) Set the STANDBY POWER switch on the Pilot's Forward Overhead Panel to the AUTO position.

SUBTASK 34-61-01-740-001

- (2) Do these steps to do the CDU keyboard test:

- (a) Push the INIT REF key on the CDU.
- (b) Push the line select key (LSK) adjacent to INDEX.

EFFECTIVITY
AKS ALL

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**AIRCRAFT MAINTENANCE MANUAL**

- (c) Push the LSK adjacent to MAINT.
- (d) Push the LSK adjacent to FMCS.

**AKS ALL; AIRPLANES WITH DUAL FMC**

- (e) Push the LSK adjacent to FMC LEFT (RIGHT).

**AKS ALL**

- (f) Push the LSK adjacent to CDU TEST or LCD CDU.
- (g) Push the LSK adjacent to KEY TEST.
- (h) Make sure that the CDU display shows the legends of all the keys the same as on the CDU keyboard.
  - 1) Push each key on the CDU.
  - 2) Make sure that the same key legend on the CDU display comes on.

**AKS ALL; AIRPLANES WITH LCD CDUS (P/N S242A600-XXXX)**

- (i) Push the LSK adjacent to INDEX to go back to the CDU MAINT BITE INDEX page.
- (j) Push the LSK adjacent to EXIT to go back to the FMCS BITE page.

**AKS ALL**

- (k) Do this task: CDU Lamp Test, TASK 34-61-01-710-801.

**E. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-01-860-027

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

———— END OF TASK ————



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AIRCRAFT MAINTENANCE MANUAL  
FMCS CONTROL DISPLAY UNIT - SERVICING

**1. General**

**AKS ALL; AIRPLANES WITH LCD CDUS (P/N S242A600-XXXX)**

- A. This procedure contains the task for the CDU lamp test.
- B. You can find the FMCS control display units (CDUs) in the flight compartment on the forward electronic panel, P9. The CDU has four annunciators (DSPY or CALL, FAIL, MSG, and OFST) and a lighted EXEC key. Two of the annunciators are on the left of the CDU (DSPY or CALL/FAIL), and two are on the right of the CDU(MSG/OFST).
- C. The CDU has lamps for the annunciators and the EXEC key that are not line replaceable. This requires replacement of the keyboard or the CDU.

**AKS ALL**

**TASK 34-61-01-710-801**

**2. CDU Lamp Test**

**A. References**

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

**B. Location Zones**

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

**C. Procedure**

**SUBTASK 34-61-01-860-008**

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

**SUBTASK 34-61-01-710-002**

- (2) Do the CDU Lamp Test:
  - (a) Hold the LIGHTS switch in the TEST position. You can find the LIGHTS switch on the pilots' center instrument panel (P2).
  - (b) Make sure that the DSPY (or CALL), FAIL, MSG, OFST, and EXEC lights on the two CDUs come on.
  - (c) Set the LIGHTS switch to the BRT or DIM position if it is necessary.

**D. Put the Airplane Back to Its Usual Condition**

**SUBTASK 34-61-01-860-018**

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

———— END OF TASK ————



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AIRCRAFT MAINTENANCE MANUAL

FMCS CONTROL DISPLAY UNIT - REMOVAL/INSTALLATION

**1. General**

- A. This procedure contains two tasks:
  - (1) The first task is for the removal of the flight management computer system (FMCS) control display unit (CDU)
  - (2) The second task is for the installation of the FMCS CDU.
- B. You can find the FMCS CDU No. 1 on the left corner of the Pilots' Forward Electronics Panel, P9. You can find the CDU No. 2 on the right corner of the Pilots' Forward Electronics Panel, P9.
- C. Six quick-release fasteners hold the CDU in position. An electrical connector attaches the electrical cable to a connector (J1) on the rear panel of the CDU.
- D. An FMC software option causes the CDU to normally show information in color. Default operation is white text on a black background.

**TASK 34-61-01-000-802**

**2. FMCS Control Display Unit (CDU) Removal**

(Figure 401)

**A. References**

Reference	Title
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)

**B. Location Zones**

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

**C. Prepare for the Removal**

SUBTASK 34-61-01-860-006

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

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	15	C01239	FMCS MCDU 2

SUBTASK 34-61-01-480-001

**WARNING:** MAKE SURE THAT THE GROUND LOCKS ARE INSTALLED IN ALL OF THE LANDING GEAR. IF THE GROUND LOCKS ARE NOT INSTALLED, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the ground locks are installed in the nose and main landing gear (TASK 32-00-01-480-801).

SUBTASK 34-61-01-020-005

- (3) If you remove the CDU [1] No.2, put the control lever for the landing gear in the OFF position.

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AKS ALL

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D. Procedure

SUBTASK 34-61-01-860-007

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

**CAUTION:** DO NOT LET THE CDU PUSH AGAINST OR FALL ON OTHER COMPONENTS ON THE AISLE STAND. THIS CAN OCCUR WHEN YOU DISCONNECT THE CONNECTOR FROM THE REAR OF THE CDU. DAMAGE TO EQUIPMENT CAN OCCUR.

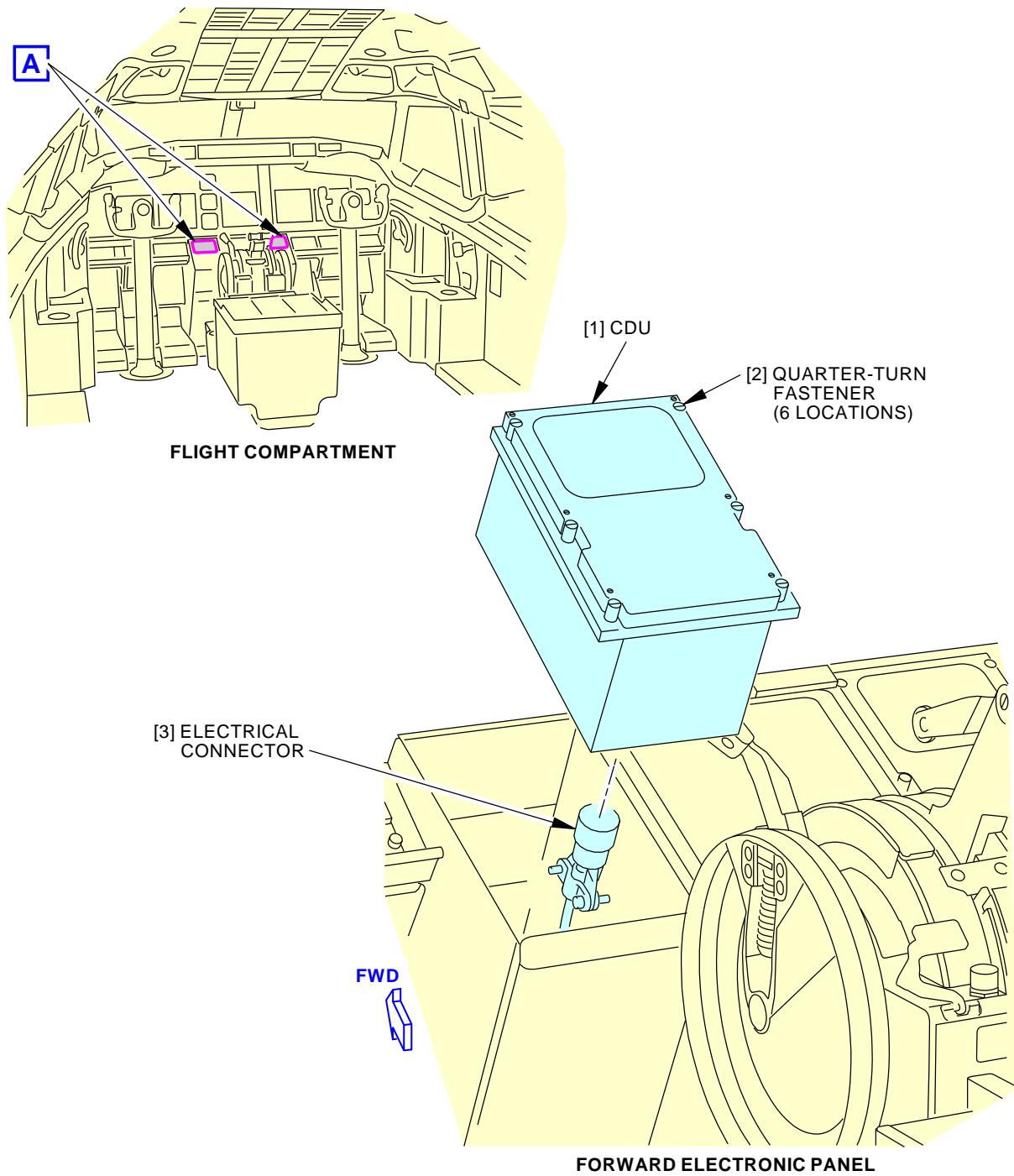
- (1) Do these steps to remove the CDU [1]:
  - (a) Loosen the six quick-release fasteners [2] on the front of the CDU [1].
  - (b) Pull the CDU [1] out of the panel until you can get access to the electrical connector [3].
  - (c) Disconnect the electrical connector [3].
  - (d) Remove the CDU [1] from the panel.
  - (e) Put a protective cover on the electrical connector [3].

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-61-01**

D633A101-AKS



F47844 S0006577351\_V2

**CDU Installation**  
Figure 401/34-61-01-990-802

EFFECTIVITY  
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AIRCRAFT MAINTENANCE MANUAL

**TASK 34-61-01-400-802**

**3. FMCS Control Display Unit (CDU) Installation**

(Figure 401)

**A. References**

<b>Reference</b>	<b>Title</b>
24-22-00-860-812	Remove Electrical Power (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)
34-61-00-750-802	CDU Software Configuration Check (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU) (P/B 201)

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-61-01-420-003

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

**CAUTION:** AIR DUCT OBSTRUCTIONS IN THE CDU MOUNTING PEDESTAL CAN DAMAGE CDU OR CAUSE CDU SHUTOFF DUE TO OVERHEATING.

(1) Do these steps to install the CDU [1]:

- (a) Remove the protective cover from the electrical connector [3].
- (b) Examine the electrical connector [3] for bent or broken pins, dirt, and damage.
- (c) Inspect the interior of the CDU mounting pedestal and remove any loose materials or tools which might obstruct the air duct or cause damage.
- (d) Connect the electrical connector [3] to the CDU [1].
- (e) Carefully lower the CDU [1] into the panel.
- (f) Tighten the six quick-release fasteners [2].

SUBTASK 34-61-01-860-020

(2) Close these circuit breakers:

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
D	15	C01239	FMCS MCDU 2



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**AIRCRAFT MAINTENANCE MANUAL**

**AKS ALL; AIRPLANES WITH LCD CDUS (P/N S242A600-XXXX)**

SUBTASK 34-61-01-470-001

- (3) Make sure the software part number is correct. Do this task: CDU Software Configuration Check (AIRPLANES WITH LIQUID CRYSTAL DISPLAY CDU), TASK 34-61-00-750-802.

**AKS ALL**

**D. Installation Test**

**AKS ALL; AIRPLANES WITH MULTI-PURPOSE CDUs**

SUBTASK 34-61-01-710-003

- (1) Do an installation test of the multi-purpose control display unit:
  - (a) Make sure that the MCDU shows <FMC on the MENU page.
  - (b) Set the MASTER DIM and TEST switch to the TEST position.
  - (c) Make sure that the CALL, FAIL, MSG, OFST, and EXEC lights on the MCDU are on.

**AKS ALL**

**E. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-01-440-001

- (1) Remove the ground locks in the nose and main landing gear if no longer required (Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801).

SUBTASK 34-61-01-860-022

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

———— END OF TASK ————



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AIRCRAFT MAINTENANCE MANUAL

FMCS COMPUTER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure contains these tasks:
  - (1) A removal of the FMCS computer
  - (2) An installation of the FMCS computer.
- B. You can find the FMCS computer in the main equipment center on the E5-2 shelf.

**TASK 34-61-02-000-801**

**2. FMCS Computer Removal**

(Figure 401)

**A. References**

<u>Reference</u>	<u>Title</u>
20-10-07-000-801	E/E Box Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
118	Electrical and Electronics Compartment - Right

**C. Access Panels**

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

**D. FMCS Computer Removal**

SUBTASK 34-61-02-860-019

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

SUBTASK 34-61-02-010-001

- (2) To get access to the main equipment center, open this access panel:

**Number      Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-61-02-860-004

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

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

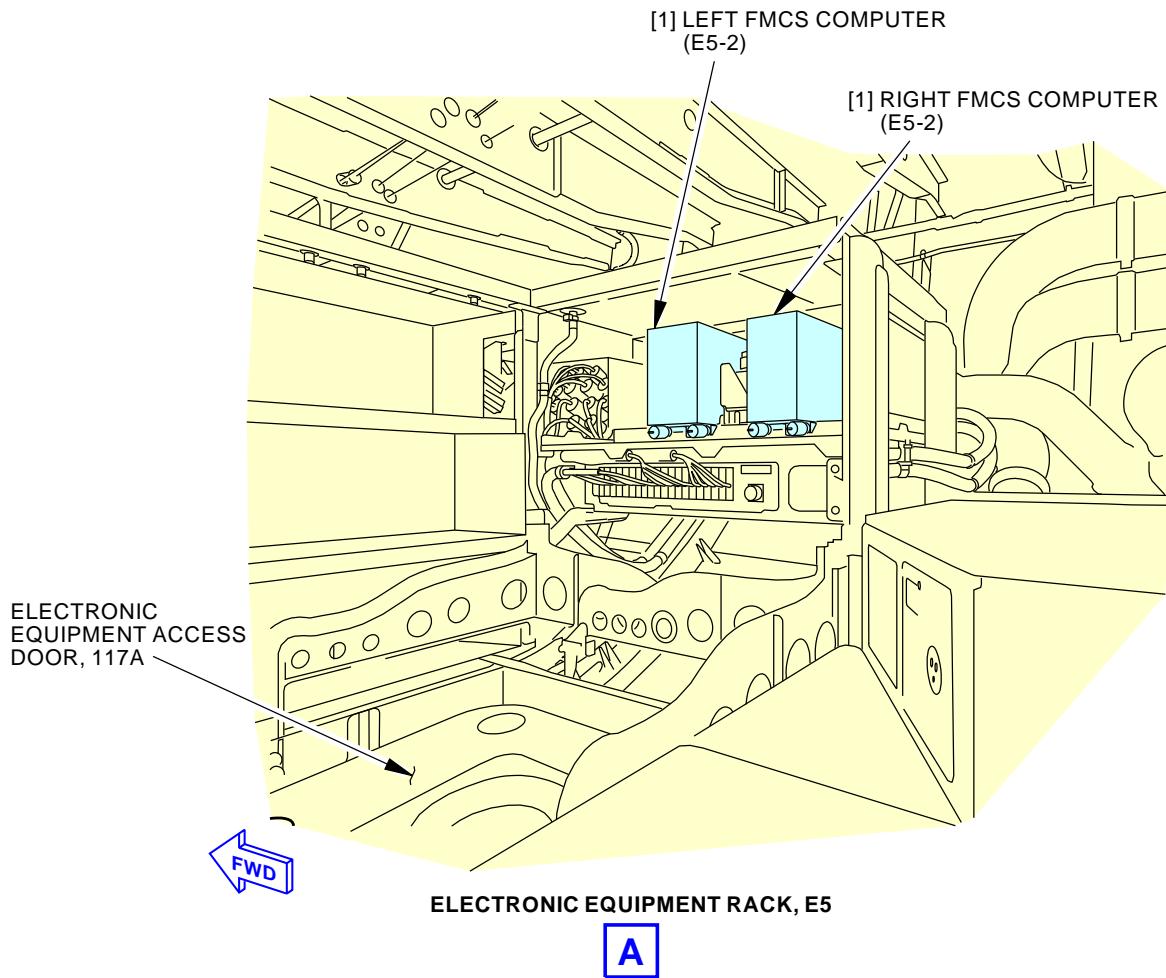
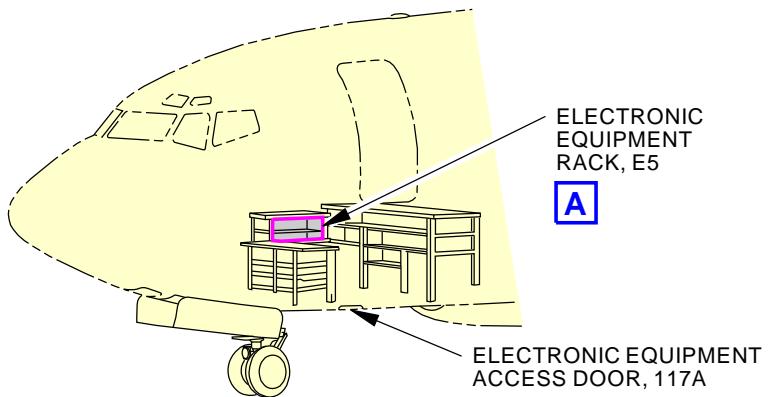
———— END OF TASK ————

EFFECTIVITY  
AKS ALL

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**FMCS - Computer Installation**  
Figure 401/34-61-02-990-801

EFFECTIVITY  
AKS ALL

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**TASK 34-61-02-400-801**

**3. FMCS Computer Installation**

(Figure 401)

**A. References**

<b>Reference</b>	<b>Title</b>
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-61-00-710-801	Flight Management Computer System - Operational Test (P/B 501)

**B. Location Zones**

<b>Zone</b>	<b>Area</b>
118	Electrical and Electronics Compartment - Right

**C. Access Panels**

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

**D. Installation Procedure**

SUBTASK 34-61-02-860-021

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

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

SUBTASK 34-61-02-860-008

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

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

SUBTASK 34-61-02-010-002

- (3) Close this access panel:

**Number**      **Name/Location**

117A      Electronic Equipment Access Door

SUBTASK 34-61-02-860-023

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

**CAPT Electrical System Panel, P18-2**

<b>Row</b>	<b>Col</b>	<b>Number</b>	<b>Name</b>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

EFFECTIVITY  
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**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2

**E. Installation Test**

SUBTASK 34-61-02-710-003

- (1) Do this task: Flight Management Computer System - Operational Test, TASK 34-61-00-710-801.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-02-860-024

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

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-61-02**



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AIRBORNE DATA LOADER - REMOVAL/INSTALLATION

**1. General**

- A. This procedure contains two tasks. The first task is for the removal of the airborne data loader (ADL). The second task is for the installation of the ADL.
- B. You can find the ADL in the control cabin on the P61 Panel.
- C. Quick-release fasteners hold the ADL in position. One electrical connector attaches an electrical cable to the rear of the ADL.

**TASK 34-61-03-000-801**

**2. Airborne Data Loader Removal**

**A. References**

<u>Reference</u>	<u>Title</u>
20-40-12-000-802	ESDS Handling for Metal Encased Unit Removal (P/B 201)

**B. Location Zones**

<u>Zone</u>	<u>Area</u>
211	Flight Compartment - Left
212	Flight Compartment - Right

**C. Procedure**

SUBTASK 34-61-03-860-001

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

SUBTASK 34-61-03-020-006

**CAUTION:** ESDS COMPONENTS AND UNITS MUST BE PROTECTED FROM STATIC DISCHARGE DAMAGE AT ALL TIMES.

- (2) Do this task ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802 as part of the removal procedure for the ADL.

SUBTASK 34-61-03-020-001

- (3) Release the quick-release fasteners on the front of the ADL.

SUBTASK 34-61-03-010-004

- (4) Pull the ADL out of P61 Control Panel. Disconnect the electrical connector on the rear of the ADL.

SUBTASK 34-61-03-020-003

- (5) Remove the ADL.

———— END OF TASK ————

**TASK 34-61-03-400-801**

**3. Airborne Data Loader Installation**

**A. References**

<u>Reference</u>	<u>Title</u>
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)

EFFECTIVITY  
AKS ALL

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(Continued)

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

**B. Location Zones**

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

**C. Procedure**

SUBTASK 34-61-03-860-002

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

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 34-61-03-420-007

**CAUTION:** ESDS COMPONENTS AND UNITS MUST BE PROTECTED FROM STATIC DISCHARGE DAMAGE AT ALL TIMES.

- (2) Do this task ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802 as part of the installation procedure for the ADL.

SUBTASK 34-61-03-210-001

- (3) Examine the ADL connect for dust, loose or bent pins.

SUBTASK 34-61-03-410-001

- (4) Connect the electrical connector to the rear of the ADL.

SUBTASK 34-61-03-420-006

- (5) Put the ADL in its position on the P61 Panel.

NOTE: Install the unit with the lever at the top of the ADL.

SUBTASK 34-61-03-410-002

- (6) Tighten the quick-release fasteners on the front of the ADL.

**D. Prepare for the Airborne Data Loader Installation Test**

SUBTASK 34-61-03-860-003

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

**E. Airborne Data Loader Installation Test**

SUBTASK 34-61-03-860-004

- (1) Put the ADL selector switch to the NORMAL position.

SUBTASK 34-61-03-860-005

- (2) Open the door on the ADL to gain access to the diskette drive. Remove the plastic diskette (if installed) from the diskette drive.

EFFECTIVITY  
AKS ALL

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SUBTASK 34-61-03-860-006

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	9	C00923	DATA LOADER

SUBTASK 34-61-03-710-001

- (4) Make sure the PWR indicator comes on when power is applied.
- (a) Make sure the remaining indicators on the ADL come on and then go off.
  - (b) The data loader does an internal self test when power is applied. Check that the HEAT and FAIL indicators do not come on and that the Main Menu is displayed.
  - (c) The HEAT indicator comes on when power is applied and the unit internal temperature is below the operating temperature of approximately 5°F (-15°C). When this occurs, the unit will not function correctly until the internal temperature reaches operational level.
  - (d) The FAIL indicator comes on if the internal Built-in Test (BIT) circuitry detects a fault which reduces the integrity of the ADL.

**F. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-03-860-009

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

———— END OF TASK ————



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FMCS TRANSFER RELAYS - REMOVAL/INSTALLATION

**1. General**

- A. This procedure contains these tasks:
  - (1) Flight Management Computer System (FMCS) Transfer Relay Removal.
  - (2) FMCS Transfer Relay Installation.
- B. There are two FMCS transfer relays installed on the E5-2 shelf in the electrical and electronics compartment.

**TASK 34-61-04-000-801**

**2. FMCS Transfer Relay Removal**

(Figure 401)

**A. General**

- (1) This task includes the steps to remove the FMCS transfer relay.
- (2) The removal procedure is the same for both FMCS transfer relays.

**B. References**

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)

**C. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. Prepare for the Removal**

SUBTASK 34-61-04-860-001

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

**CAPT Electrical System Panel, P18-2**

Row	Col	Number	Name
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

Row	Col	Number	Name
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2
E	15	C01263	FMCS XFR

SUBTASK 34-61-04-010-001

- (2) To get access to the main equipment center, open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

EFFECTIVITY

AKS ALL

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SUBTASK 34-61-04-010-002

- (3) To remove the FMCS transfer relay bracket, do this task: E/E Box Removal, TASK 20-10-07-000-801.

**F. FMCS Transfer Relay Removal**

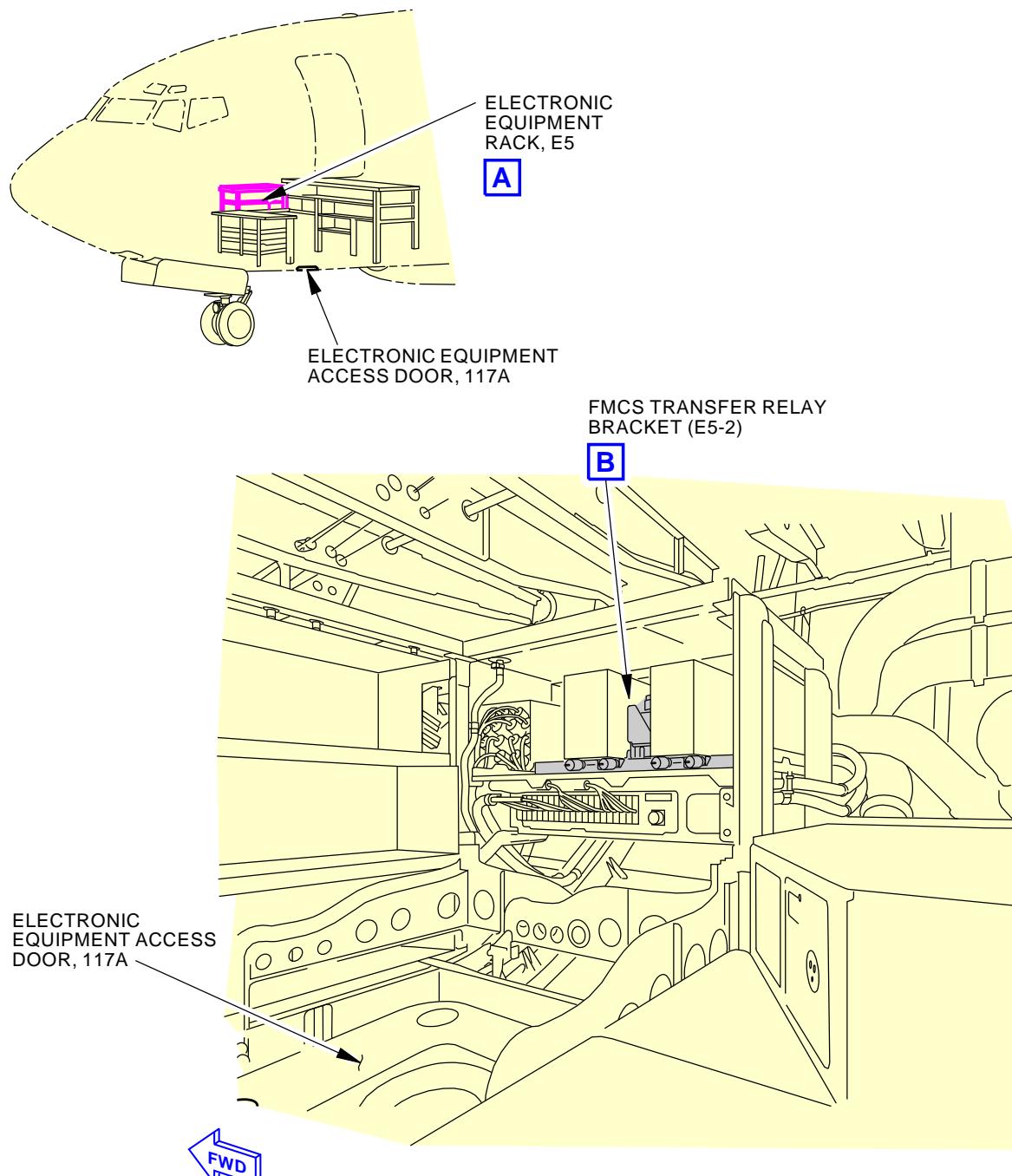
SUBTASK 34-61-04-020-002

- (1) Do these steps to remove the FMCS transfer relay:
  - (a) Disconnect the electrical connector from the FMCS transfer relay.
  - (b) Remove the screws from the bracket.
  - (c) Remove the FMCS transfer relay.

———— END OF TASK ————

EFFECTIVITY  
AKS ALL

**34-61-04**



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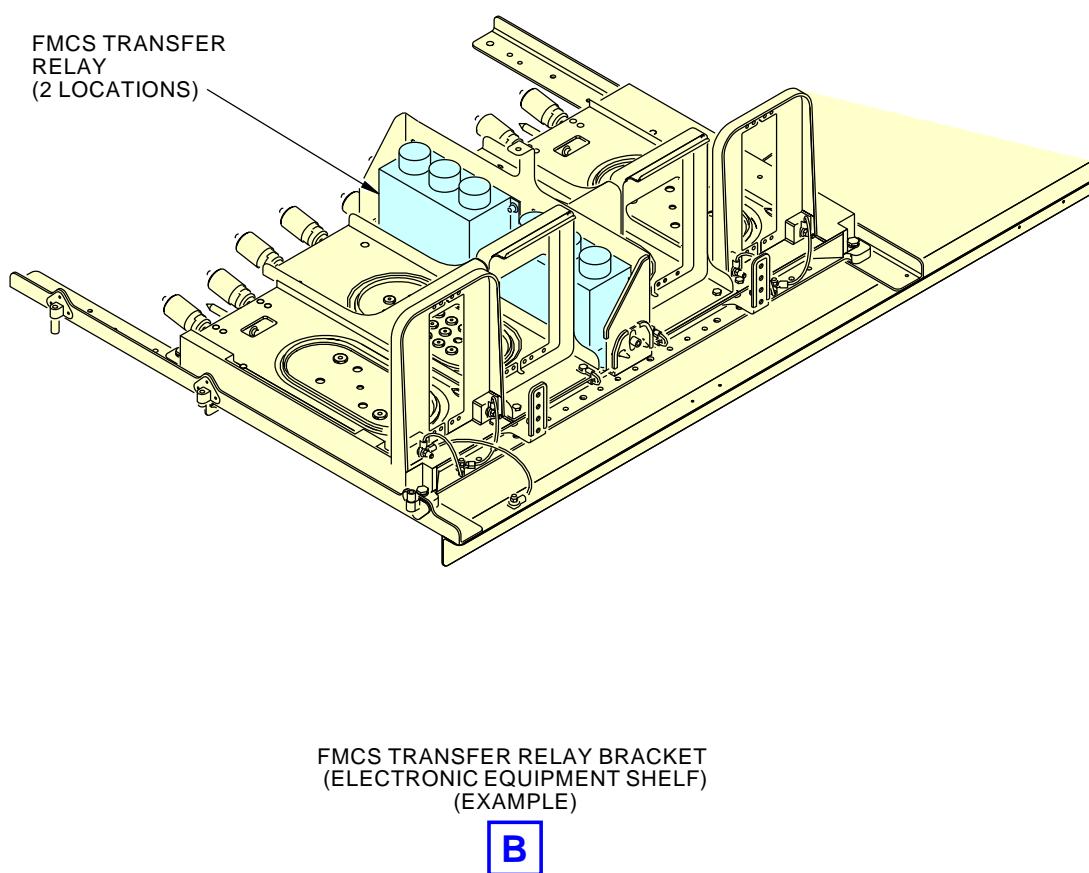
**FMCS Transfer Relay Installation**  
**Figure 401/34-61-04-990-801 (Sheet 1 of 2)**

EFFECTIVITY  
**AKS ALL**

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FMCS Transfer Relay Installation  
Figure 401/34-61-04-990-801 (Sheet 2 of 2)

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**TASK 34-61-04-400-801**

**3. FMCS Transfer Relay Installation**

(Figure 401)

**A. General**

- (1) This task includes the steps to install the FMCS transfer relay.
- (2) The installation procedure is the same for both FMCS transfer relays.

**B. References**

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
24-22-00-860-811	Supply Electrical Power (P/B 201)
24-22-00-860-812	Remove Electrical Power (P/B 201)
34-61-00-470-805	FMC Software Installation with a Portable Data Loader (P/B 201)
34-61-00-470-811	FMC Software Installation with an Enhanced Airborne Data Loader (P/B 201)
34-61-00-710-801	Flight Management Computer System - Operational Test (P/B 501)

**C. Location Zones**

Zone	Area
118	Electrical and Electronics Compartment - Right

**D. Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

**E. FMCS Transfer Relay Installation**

SUBTASK 34-61-04-420-001

- (1) Do these steps to install the FMCS transfer relay:
  - (a) Put the FMCS transfer relay in the bracket.
  - (b) Install the screws.
  - (c) Connect the applicable electrical connectors to the FMCS transfer relay.

SUBTASK 34-61-04-410-001

- (2) To install the FMCS transfer relay bracket, do this task: E/E Box Installation, TASK 20-10-07-400-801.

**F. Prepare for the FMCS Transfer Relay Installation Test**

SUBTASK 34-61-04-860-002

- (1) Supply the electrical power (Supply Electrical Power, TASK 24-22-00-860-811).

SUBTASK 34-61-04-860-003

- (2) Make sure the BAT switch on the pilots' forward overhead panel is in the ON position.

SUBTASK 34-61-04-860-004

- (3) Make sure the STANDBY POWER switch on the pilots' forward overhead panel is in the AUTO position.

SUBTASK 34-61-04-860-005

- (4) Make sure the FMC SOURCE SELECT SWITCH on the pilots' forward overhead panel is in the NORMAL position.

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SUBTASK 34-61-04-860-006

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2
E	15	C01263	FMCS XFR

**G. FMCS Transfer Relay Installation Test**

SUBTASK 34-61-04-710-001

- (1) Do these steps for the annunciator test:

- (a) Make sure the FMC SOURCE SELECT SWITCH is set to the NORMAL position.

NOTE: If the MENU page is displayed on either CDU, press the LSK adjacent to FMC on that CDU.

- (b) Push the CLR Key on the CDUs to remove the alert level message from the CDU scratchpad.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1

- (d) Make sure the FMC P/RST annunciator lights on the captain's (P1) and first officer's (P3) instrument panels come on.

- (e) Push the FMC P/RST annunciator lights on the autoflight status annunciators (ASAs) and make sure that the lights go off.

- (f) Set the FMC SOURCE SELECT SWITCH to the BOTH ON R position.

NOTE: If the MENU page is displayed on either CDU, press the LSK adjacent to FMC on that CDU.

- (g) Push the CLR Key on the CDUs to remove the alert level message from the CDU scratchpad.

- (h) Make sure that the FMC P/RST annunciator lights on the captain's and first officer's ASAs are off.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01262	FMCS CMPTR 2

- (j) Make sure the FMC P/RST annunciator lights on the captain's and first officer's ASAs come on.

- (k) Push the FMC P/RST annunciator lights on the ASAs and make sure that the lights go off.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1

- (m) After 15 seconds, set the FMC SOURCE SELECT SWITCH to the BOTH ON L position.

NOTE: If the MENU page is displayed on either CDU, press the LSK adjacent to FMC on that CDU.

- (n) Push the CLR Key on the CDUs to remove the alert level message from the CDU scratchpad.
- (o) Make sure that the FMC P/RST annunciator lights on the captain's and first officer's ASAs are off.
- (p) Remove the safety tag and close this circuit breaker:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01262	FMCS CMPTR 2

- (q) After 15 seconds, set the FMC SOURCE SELECT SWITCH to the NORMAL position.
- (r) Make sure that the FMC P/RST annunciator lights on the captain's and first officer's ASAs are still off.
- (s) Open this circuit breaker and install safety tag:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1

- (t) Put the MASTER DIM and TEST switch in the TEST position.
- (u) Make sure that the MSG, CALL, FAIL, OFST, and EXEC annunciator lights on the CDUs come on.
- (v) Make sure that the FMC P/RST annunciator lights on the captain's and first officer's ASAs come on.
- (w) Push the FMC P/RST annunciator lights on the ASAs and make sure that the lights go off.
- (x) Remove the safety tag and close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1

**H. Operational Program, Navigation Database, and Fixed Outputs Checks**

**SUBTASK 34-61-04-710-002**

- (1) If it is necessary, do the "Prepare for Test" steps from Flight Management Computer System - Operational Test, TASK 34-61-00-710-801.

**SUBTASK 34-61-04-710-003**

- (2) Do these steps to examine the operational program and navigation database:
- Set the FMC SOURCE SELECT SWITCH to the BOTH ON L position.
  - Push the INIT REF key on the two CDUs.
  - Push the line select key (LSK) adjacent to INDEX on the two CDUs.



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- (d) Push the LSK adjacent to IDENT on the two CDUs.
- (e) Make sure the two CDUs show the IDENT 1/X page.
- (f) Make sure the part number of the OP PROGRAM is correct on the two CDUs.

NOTE: The applicable airline department has the correct part number for the OP PROGRAM.

- 1) If the OP PROGRAM is incorrect, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.

- (g) Make sure the part number of the NAV DATA is correct on the CDU.

NOTE: The applicable airline department has the correct part number for the NAV DATA.

- 1) If the NAV DATA is incorrect, do this task: FMC Software Installation with a Portable Data Loader, TASK 34-61-00-470-805 or FMC Software Installation with an Enhanced Airborne Data Loader, TASK 34-61-00-470-811.

- (h) Make sure the date of the NAV DATA is correct on the two CDUs.

NOTE: You can find the dates for the active navigation database below ACTIVE.

SUBTASK 34-61-04-710-004

- (3) Do these steps to do a test of the FMCS fixed outputs.

- (a) Make sure that the captain's and first officer's MAIN PANEL CDUs switches are set to NORM.
- (b) Make sure that the captain's and first officer's LOWER CDUs switches are set to NORM.
- (c) Select MAP mode on the captain's and first officer's EFIS control panels.
- (d) Set the N1 SET switch to AUTO.
- (e) Make sure that the FMC SOURCE SELECT SWITCH is set to NORMAL.
- (f) Push the INIT REF key on the two CDUs.
- (g) Push the line select key (LSK) adjacent to INDEX on the two CDUs.
- (h) Push the LSK adjacent to MAINT on the two CDUs.
- (i) Push the LSK adjacent to FMCS on the two CDUs.
- (j) Push the LSK adjacent to L FMC on the captain's CDU.
- (k) Push the LSK adjacent to R FMC on the first officer's CDU.
- (l) Push the LSK adjacent to FIXED OUTPUTS on the two CDUs.
- (m) Make sure that the captain's and first officer's EFIS display shows "FMC INTERFACE OK".
- (n) Make sure that the OFST, FAIL, and MSG annunciator lights on the two CDUs come on.
- (o) Make sure that the FMC P/RST annunciator lights on the two CDUs come on.
- (p) Open this circuit breaker and install safety tag:

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01262	FMCS CMPTR 2

- (q) Make sure that the thrust mode annunciator on engine format above the N1 display cycles through these thrust modes: CRZ, CLB, -- -, CON, TO, GA.

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

**F/O Electrical System Panel, P6-1**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01262	FMCS CMPTR 2

NOTE: Wait at least 15 seconds after closing the circuit breaker.

- (s) Set the FMC SOURCE SELECT SWITCH to BOTH ON R.

NOTE: If the MENU page is displayed on either CDU, press the LSK adjacent to FMC on that CDU.

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

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1

- (u) Push the LSK adjacent to R FMC on the first officer's CDU.

- (v) Push the LSK adjacent to FIXED OUTPUTS on the first officer's CDU.

- (w) Make sure that the thrust mode annunciator on engine format above the N1 display cycles through these thrust modes: CRZ, CLB, -- -, CON, TO, GA.

- (x) Close this circuit breaker:

**CAPT Electrical System Panel, P18-2**

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
A	6	C01017	FMCS CMPTR 1

NOTE: Wait at least 15 seconds after closing the circuit breaker.

- (y) Push the LSK adjacent to INDEX on the first officer's CDU.

- (z) Set the FMC SOURCE SELECT SWITCH to NORMAL.

NOTE: If the MENU page is displayed on either CDU, press the LSK adjacent to FMC on that CDU.

**I. Put the Airplane Back to Its Usual Condition**

SUBTASK 34-61-04-410-002

- (1) Close this access panel:

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

SUBTASK 34-61-04-860-009

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

———— END OF TASK ————



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