CHAPTER

31

INDICATING/ RECORDING SYSTEMS

CHAPTER 31
INDICATING/RECORDING SYSTEMS

Subject/Page	Date	COC
31-EFFECTIVE PAGES		
1 thru 9	Feb 15/2025	
10	BLANK	
31-CONTENTS		
1	Oct 15/2024	
R 2	Feb 15/2025	
3	Oct 15/2024	
4	Oct 15/2024	
5	Oct 15/2024	
6	Oct 15/2024	
7	Feb 15/2024	
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9	Oct 15/2024	
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11	Feb 15/2023	
12	Oct 15/2024	
13	Oct 15/2024	
14	BLANK	
31-11-21		
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117	Oct 15/2024	
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31-11-21 (cont)		
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31-11-31		
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31-11-41		
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109	Oct 15/2024	
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31-11-41 (cont)		
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116	BLANK	
31-11-51		
101	Feb 15/2015	
102	Oct 15/2024	
103	Oct 15/2024	
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31-11-71		
101	Feb 15/2015	
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103	Oct 15/2024	
104	Oct 15/2024	

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Subject/Page	Date	COC
31-11-71 (cont)		
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31-11-81		
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31-11-91 (cont)		
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31-11-94		
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31-11-94 (cont)		
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111	Oct 15/2024	

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ECCN 9E991 BOEING PROPRIETARY - See title page for details

Subject/Page	Date	COC
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31-11-98		
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31-11-98 (cont)		
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31-25-11		
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402	Feb 15/2020	
403	Feb 15/2020	
31-25-11 (cont)		
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31-31-00		
R 201	Feb 15/2025	
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R 214	Feb 15/2025	
R 215	Feb 15/2025	
R 216	Feb 15/2025	
R 217	Feb 15/2025	
R 218	Feb 15/2025	
R 219	Feb 15/2025	
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506	Oct 15/2024	
507	Oct 15/2024	
508	Oct 15/2024	
R 509	Feb 15/2025	
510	Oct 15/2024	

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Subject/Page	Date	COC
31-31-00 (cont)		
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31-31-00 (cont)		
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579	Oct 15/2024	
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581	Oct 15/2024	
582	Oct 15/2024	
31-31-00 (cont)		
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584	Oct 15/2024	
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596	Oct 15/2024	
31-31-09		
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221	Feb 15/2021	

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31-31-09 (cont)		
222	Feb 15/2023	
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224	Oct 15/2024	
225	Feb 15/2021	
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229	Feb 15/2023	
230	Oct 15/2024	
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232	Jun 15/2023	
31-31-11		
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31-31-22		
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213	Oct 15/2024	
31-31-22 (cont)		
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232	Oct 15/2024	
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235	Oct 15/2024	
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31-31-22		
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408	Oct 15/2024	
31-31-24		
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202	Oct 15/2024	
203	Oct 15/2024	
204	Oct 15/2024	
31-31-24 (cont)		
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214	Oct 15/2024	
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31-31-24		
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403	Oct 15/2024	
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405	Oct 15/2024	
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31-31-28		
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403	Oct 15/2024	
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31-31-31		
401	Jun 15/2024	
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403	Jun 15/2024	
404	Jun 15/2024	
405	Oct 15/2022	
406	Feb 15/2020	

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31-31-31 (cont)		
407	Feb 15/2024	
408	Jun 15/2024	
409	Oct 15/2024	
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31-31-32		
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402	Oct 15/2017	
403	Oct 15/2015	
404	Jun 15/2016	
405	Feb 15/2024	
406	Jun 15/2019	
407	Jun 15/2019	
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410	Oct 15/2024	
R 411	Feb 15/2025	
412	Oct 15/2024	
413	Feb 15/2024	
414	Oct 15/2024	
31-31-41		
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403	Feb 15/2020	
404	Feb 15/2020	
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407	Feb 15/2024	
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411	Oct 15/2024	
412	Oct 15/2024	
413	Oct 15/2024	
31-31-41 (cont)		
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31-31-42		
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412	Oct 15/2024	
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414	Oct 15/2024	
415	Oct 15/2024	
416	Oct 15/2024	
31-31-43		
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31-31-51		
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403	Oct 15/2022	
31-31-51 (cont)		
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31-31-52		
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413	Oct 15/2024	
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419	Feb 15/2024	
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INDICATING/RECORDING SYSTEMS

Subject/Page	Date	COC
31-31-61		
401	Oct 15/2023	
402	Feb 15/2020	
403	Oct 15/2018	
404	Oct 15/2018	
405	Jun 15/2023	
406	Oct 15/2023	
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417	Feb 15/2024	
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31-31-81		
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31-33-01		
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31-33-01		
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31-33-01 (cont)		
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304	Jun 15/2018	
31-33-01		
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31-51-00		
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31-51-00		
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31-51-00 (cont)		
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31-51-01		
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31-51-02		
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410	Oct 15/2022	
31-51-02		
501	Oct 15/2024	
502	Oct 15/2024	

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31-51-02 (cont)		
503	Oct 15/2024	
504	Oct 15/2024	
505	Oct 15/2024	
506	Oct 15/2024	
507	Oct 15/2015	
R 508	Feb 15/2025	
509	Oct 15/2024	
510	Oct 15/2024	
R 511	Feb 15/2025	
R 512	Feb 15/2025	
513	Oct 15/2022	
514	BLANK	
31-51-03		
401	Oct 15/2022	
402	Oct 15/2022	
403	Feb 15/2021	
404	Jun 15/2021	
405	Feb 15/2021	
406	Feb 15/2021	
407	Jun 15/2024	
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409	Jun 15/2024	
410	Oct 15/2022	
411	Jun 15/2024	
412	BLANK	
31-51-04		
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402	Jun 15/2021	
403	Jun 15/2021	
404	Jun 15/2021	
405	Jun 15/2021	
406	BLANK	
31-62-00		
201	Feb 15/2015	
202	Feb 15/2015	
203	Oct 15/2015	
204	Feb 15/2015	
31-62-00		
501	Jun 15/2021	
502	Jun 15/2021	
503	Feb 15/2019	
504	Feb 15/2019	
505	Feb 15/2019	
506	Oct 15/2024	
R 507	Feb 15/2025	
508	Jun 15/2023	
509	Oct 15/2024	
510	Jun 15/2023	
511	Jun 15/2023	
512	Jun 15/2023	
513	Jun 15/2023	
514	Jun 15/2023	
515	Jun 15/2023	
516	Feb 15/2024	
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521	Jun 15/2023	
522	Oct 15/2024	
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524	Oct 15/2024	
525	Oct 15/2024	
526	Oct 15/2024	
527	Oct 15/2024	
528	Oct 15/2024	
529	Oct 15/2024	
R 530	Feb 15/2025	
R 531	Feb 15/2025	
532	Oct 15/2024	
533	Jun 15/2023	
534	Jun 15/2023	
31-62-11		
401	Jun 15/2022	
402	Oct 15/2023	
403	Oct 15/2019	
R 404	Feb 15/2025	
O 405	Feb 15/2025	
O 406	Feb 15/2025	
O 407	Feb 15/2025	
408	BLANK	
31-62-11		
701	Oct 15/2017	
702	Oct 15/2017	
703	Oct 15/2024	
704	Feb 15/2024	
31-62-12		
401	Jun 15/2021	
402	Oct 15/2020	
403	Oct 15/2015	
404	Feb 15/2024	
405	Feb 15/2024	
406	Jun 15/2021	
31-62-13		
401	Feb 15/2024	
402	Oct 15/2015	
403	Jun 15/2024	
404	Jun 15/2024	
31-62-14		
401	Oct 15/2017	
402	Oct 15/2015	
403	Oct 15/2024	
404	Oct 15/2018	
405	Feb 15/2016	
406	BLANK	
31-62-21		
201	Oct 15/2024	
202	Oct 15/2024	
203	Oct 15/2024	
204	Oct 15/2024	

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31-62-21 (cont)		
205	Oct 15/2024	
206	Oct 15/2024	
207	Oct 15/2024	
208	Oct 15/2024	
209	Oct 15/2024	
210	Oct 15/2024	
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212	Oct 15/2024	
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223	Oct 15/2024	
224	Oct 15/2024	
225	Oct 15/2024	
226	Oct 15/2024	
227	Oct 15/2024	
228	Oct 15/2024	
31-62-21		
R 401	Feb 15/2025	
R 402	Feb 15/2025	
403	Oct 15/2015	
R 404	Feb 15/2025	
R 405	Feb 15/2025	
R 406	Feb 15/2025	
407	Oct 15/2024	
408	BLANK	
31-62-21		
701	Jun 15/2021	
702	BLANK	
31-62-31		
401	Jun 15/2016	
402	Oct 15/2024	
403	Oct 15/2015	
404	Oct 15/2015	
405	Oct 15/2015	
406	Oct 15/2024	
407	Oct 15/2022	
408	Oct 15/2014	
409	Oct 15/2014	
410	Oct 15/2015	
31-62-41		
401	Oct 15/2014	
402	Oct 15/2014	
403	Jun 15/2021	
404	Jun 15/2021	
405	Oct 15/2015	
406	Oct 15/2024	
407	Oct 15/2022	
408	Oct 15/2020	
409	Oct 15/2015	
410	BLANK	

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CAPTAINS PANEL - COMPONENT LOCATION	31-11-21		101	LOM ALL
CENTER PANEL - COMPONENT LOCATION	31-11-31		101	LOM ALL
PILOTS' GLARESHIELD - COMPONENT LOCATION	31-11-41		101	LOM ALL
FIRST OFFICER'S PANEL - COMPONENT LOCATION	31-11-51		101	LOM ALL
PILOTS' CONTROL STAND - COMPONENT LOCATION	31-11-71		101	LOM ALL
FORWARD ELECTRONIC PANEL - COMPONENT LOCATION	31-11-81		101	LOM ALL
AFT ELECTRONIC PANEL - COMPONENT LOCATION	31-11-91		101	LOM ALL
FORWARD OVERHEAD PANEL - COMPONENT LOCATION	31-11-94		101	LOM ALL
AFT OVERHEAD PANEL - COMPONENT LOCATION	31-11-95		101	LOM ALL
AUXILIARY PANELS - COMPONENT LOCATION	31-11-98		101	LOM ALL
FORWARD CABIN ATTENDANTS' PANELS - COMPONENT LOCATION	31-15-11		101	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422, 425, 426
AFT CABIN ATTENDANTS' PANELS - COMPONENT LOCATION	31-15-21		101	LOM 402, 404, 406, 407, 411, 412, 415, 416, 422, 425
CLOCKS - ADJUSTMENT/TEST	31-25-00		501	LOM ALL
Clocks - System Test TASK 31-25-00-710-803			501	LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET BUTTON
Clocks - System Test TASK 31-25-00-710-804			504	LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET CONTROL KNOB
CLOCKS - REMOVAL/INSTALLATION	31-25-11		401	LOM ALL
Clock Removal TASK 31-25-11-000-801			401	LOM ALL
Clock Installation TASK 31-25-11-400-801			403	LOM ALL

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SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
FLIGHT DATA RECORDER (FDR) - MAINTENANCE PRACTICES	31-31-00		201	LOM ALL
Flight Data Recorder System - Deactivation TASK 31-31-00-040-801			201	LOM ALL
Flight Data Recorder System - Activation TASK 31-31-00-440-801			202	LOM ALL
Flight Data Recorder - Single State Analog Discrete Parameter Test TASK 31-31-00-700-801			203	LOM ALL
Copy the Data from the Solid State Flight Data Recorder with a Hand Held Download Unit TASK 31-31-00-970-803			208	LOM 402, 406, 407, 411, 412, 415, 420, 422-426
Copy of the Data from the SSFDR with the use of a Hand Held Multi-Purpose Portable Interface (HHMPI) or Portable Interface TASK 31-31-00-970-806			211	LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999
Copy of the Data from the Honeywell SSFDR with the Flight Data Recorder Download Unit TASK 31-31-00-970-807			214	LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042
Copy the Data from the Solid State Flight Data Recorder (SSFDR) with the Hand Held Multi Purpose Interface (HHMPI) TASK 31-31-00-970-808			217	LOM ALL; AIRPLANES WITH LOCKHEED FDR, FAIRCHILD FDR, AND HONEYWELL HFR5-D
Copy the Data from the Solid State Flight Data Recorder (SSFDR) with the Data Acquisition Ruggedized Tool (DART) TASK 31-31-00-970-809			220	LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23
FLIGHT DATA RECORDER SYSTEM - ADJUSTMENT/TEST	31-31-00		501	LOM ALL
Flight Data Recorder System - Operational Test TASK 31-31-00-710-801			501	LOM ALL

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SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
Flight Data Recorder System - System Test TASK 31-31-00-730-801			508	LOM ALL
UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES	31-31-09		201	LOM ALL
Underwater Locator Beacon Removal TASK 31-31-09-000-801			201	LOM ALL
Dukane Underwater Locator Beacon Battery - Replacement TASK 31-31-09-960-801			208	LOM ALL; FLIGHT DATA RECORDERS WITH DUKANE ULBS
Teledyne Benthos Underwater Locator Beacon Battery - Replacement TASK 31-31-09-960-802			214	LOM ALL; FLIGHT DATA RECORDERS WITH DATASONIC ULBS
L-3 Underwater Locator Beacon Battery - Replacement TASK 31-31-09-960-805			218	LOM ALL; FLIGHT DATA RECORDERS WITH L-3 ULBS
Underwater Locator Beacon Test with a 42A12 Test Set TASK 31-31-09-700-805			222	LOM ALL
Underwater Locator Beacon Test with a PL1 Test Set TASK 31-31-09-700-806			223	LOM ALL
Underwater Locator Beacon Test with a PL3 Test Set TASK 31-31-09-700-801			223	LOM ALL
Underwater Locator Beacon Test with a ATS-260 Test Set TASK 31-31-09-700-802			224	LOM ALL
Underwater Locator Beacon Test with a Seacom TS100 Test Set TASK 31-31-09-700-803			225	LOM ALL
Underwater Locator Beacon Test with a TS200 Test Set TASK 31-31-09-700-804			226	LOM ALL
L-3 Underwater Locator Beacon Off-Current Test TASK 31-31-09-700-807			227	LOM ALL
L-3 Underwater Locator Beacon Operational Test with 17TES0015 Test Set TASK 31-31-09-700-808			229	LOM ALL

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Underwater Locator Beacon Installation TASK 31-31-09-400-801			230	LOM ALL
Underwater Locator Beacon Test with a TS500 Test Set TASK 31-31-09-700-809			232	LOM ALL
FLIGHT DATA RECORDER (FDR) - REMOVAL/INSTALLATION	31-31-11		401	LOM ALL
Flight Data Recorder Removal TASK 31-31-11-000-802			401	LOM ALL
Flight Data Recorder Installation TASK 31-31-11-400-802			404	LOM ALL
FLIGHT RECORDER/MACH AIRSPEED WARNING TEST MODULE - REMOVAL/INSTALLATION	31-31-12		401	LOM ALL
Flight Recorder/Mach Airspeed Warning Test Module Removal TASK 31-31-12-000-801			401	LOM ALL
Flight Recorder/Mach Airspeed Warning Test Module Installation TASK 31-31-12-400-801			403	LOM ALL
DIGITAL FLIGHT DATA ACQUISITION UNIT (DFDAU) - MAINTENANCE PRACTICES	31-31-22		201	LOM ALL
Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL) TASK 31-31-22-400-803			202	LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438
ACMS Data Output from the FDAU to an Airborne Data Loader (ADL) TASK 31-31-22-400-810			204	LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438
Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL) TASK 31-31-22-470-808			205	LOM 429-431, 440, 442-447, 450-460, 464-999
ACMS Data Output from the DFDAU to an Enhanced Airborne Data Loader (eADL) TASK 31-31-22-400-822			211	LOM 429-431, 440, 442-447, 450-460, 464-999
Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader TASK 31-31-22-470-801			214	LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

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ACMS Data Output from the FDAU with the use of the Portable Data Loader TASK 31-31-22-470-803			218	LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999
Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface TASK 31-31-22-400-809			221	LOM 432
Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface TASK 31-31-22-400-802			223	LOM 427-431, 437, 438, 443, 444, 450-452, 461-999
ACMS Data Output with the Use of the Teledyne FDAU TASK 31-31-22-400-813			226	LOM 427-432, 437, 438, 443, 444, 461-463, 466-999
Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface TASK 31-31-22-400-806			228	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460
ACMS Data Output from the FDAU to an AlliedSignal PCMCIA Card TASK 31-31-22-400-805			230	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426
ACMS Data Output from the FDAU to an Allied Signal PCMCIA Card TASK 31-31-22-400-818			231	LOM 433, 434, 439-442, 445-447, 453-460
ACMS In-Flight Output from the FDAU to an AlliedSignal PCMCIA Card TASK 31-31-22-400-819			232	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460
ACMS In-Flight Output from the FDAU to a Teledyne PCMCIA Card TASK 31-31-22-400-823			233	LOM 427-431, 450, 461-999
DFDAU Input Monitoring Maintenance Practices with DITS or Mnemonics TASK 31-31-22-970-801			234	LOM ALL

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DIGITAL FLIGHT DATA ACQUISITION UNIT (DFDAU) - REMOVAL/INSTALLATION	31-31-22		401	LOM ALL
Digital Flight Data Acquisition Unit (DFDAU) Removal TASK 31-31-22-000-801			401	LOM ALL
Digital Flight Data Acquisition Unit (DFDAU) Installation TASK 31-31-22-400-801			404	LOM ALL
QUICK ACCESS RECORDER - MAINTENANCE PRACTICES	31-31-24		201	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
WQAR Recording Media Removal TASK 31-31-24-000-802			201	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
WQAR Recording Media Installation TASK 31-31-24-400-802			202	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
Verify and Set the bipolar_rate Parameter to AUTO TASK 31-31-24-800-801			204	LOM 423, 424, 427-431, 439, 441
WQAR Software Load with the use of the Loadable Software Media Card TASK 31-31-24-400-803			206	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
WQAR Software Load with the use of the Compact Flash (CF) Card TASK 31-31-24-400-804			213	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
QUICK ACCESS RECORDER - REMOVAL/INSTALLATION	31-31-24		401	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
Quick Access Recorder (QAR) Removal TASK 31-31-24-000-801			401	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
Quick Access Recorder (QAR) Installation TASK 31-31-24-400-801			405	LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999
EVENT/PRINT SWITCH PANEL - REMOVAL/INSTALLATION	31-31-28		401	LOM 412, 415, 423, 424, 439, 441, 465-999
Event/Print Switch Panel Removal TASK 31-31-28-000-801			401	LOM 412, 415, 423, 424, 439, 441, 465-999

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AILERON POSITION TRANSMITTER - REMOVAL/INSTALLATION	31-31-31		401	LOM ALL
Aileron Position Transmitter Removal TASK 31-31-31-000-801			401	LOM ALL
Aileron Position Transmitter Installation TASK 31-31-31-400-801			406	LOM ALL
Aileron Position Transmitter Installation Test TASK 31-31-31-700-801			407	LOM ALL
CONTROL WHEEL POSITION SENSOR - REMOVAL/INSTALLATION	31-31-32		401	LOM ALL
Control Wheel Position Sensor Removal TASK 31-31-32-000-801			401	LOM ALL
Control Wheel Position Sensor Installation TASK 31-31-32-400-801			406	LOM ALL
Control Wheel Position Sensor Installation Test TASK 31-31-32-820-801			408	LOM ALL
RUDDER POSITION TRANSMITTER - REMOVAL/INSTALLATION	31-31-41		401	LOM ALL
Rudder Position Transmitter Removal TASK 31-31-41-000-801			401	LOM ALL
Rudder Position Transmitter Installation TASK 31-31-41-400-801			406	LOM ALL
Rudder Position Transmitter Installation Test TASK 31-31-41-700-801			407	LOM ALL
RUDDER PEDAL POSITION SENSOR - REMOVAL/INSTALLATION	31-31-42		401	LOM ALL
Rudder Pedal Position Sensor Removal TASK 31-31-42-000-801			401	LOM ALL
Rudder Pedal Position Sensor Installation TASK 31-31-42-400-801			408	LOM ALL
Rudder Pedal Position Sensor Installation Test TASK 31-31-42-700-801			410	LOM ALL

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RUDDER PEDAL FORCE TRANSMITTER ROD - REMOVAL/INSTALLATION	31-31-43		401	LOM ALL
Rudder Pedal Force Transmitter Rod Removal TASK 31-31-43-000-801			401	LOM ALL
Rudder Pedal Force Transmitter Rod Installation TASK 31-31-43-400-801			407	LOM ALL
Rudder Pedal Force Transmitter Installation Test TASK 31-31-43-700-801			408	LOM ALL
ELEVATOR POSITION TRANSMITTER - REMOVAL/INSTALLATION	31-31-51		401	LOM ALL
Elevator Position Transmitter Removal TASK 31-31-51-000-801			401	LOM ALL
Elevator Position Transmitter Installation TASK 31-31-51-400-801			407	LOM ALL
Elevator Position Transmitter Installation Test TASK 31-31-51-700-801			408	LOM ALL
CONTROL COLUMN POSITION SENSOR - REMOVAL/INSTALLATION	31-31-52		401	LOM ALL
Control Column Position Sensor Removal TASK 31-31-52-000-801			401	LOM ALL
Control Column Position Sensor Installation TASK 31-31-52-400-801			405	LOM ALL
Control Column Position Sensor Installation Test TASK 31-31-52-820-801			407	LOM ALL
BRAKE PRESSURE TRANSMITTER - REMOVAL/INSTALLATION	31-31-61		401	LOM ALL
Brake Pressure Transmitter - Removal TASK 31-31-61-000-801			401	LOM ALL
Brake Pressure Transmitter - Installation TASK 31-31-61-400-801			405	LOM ALL
Brake Pressure Transmitter - Installation Test TASK 31-31-61-820-801			407	LOM ALL

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FLIGHT DATA RECORDER ACCELEROMETER - REMOVAL/INSTALLATION	31-31-81		401	LOM ALL
Flight Data Recorder Accelerometer - Removal TASK 31-31-81-000-801			401	LOM ALL
Flight Data Recorder Accelerometer - Installation TASK 31-31-81-400-801			403	LOM ALL
PRINTER - MAINTENANCE PRACTICES	31-33-01		201	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
Printer - Deactivation TASK 31-33-01-040-801			201	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
Printer - Activation TASK 31-33-01-440-801			201	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
PRINTER - SERVICING	31-33-01		301	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
Printer Paper Installation TASK 31-33-01-400-802			301	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
PRINTER - REMOVAL/INSTALLATION	31-33-01		401	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
Printer Removal TASK 31-33-01-000-801			401	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
Printer Installation TASK 31-33-01-400-801			403	LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999
AURAL WARNING SYSTEM - MAINTENANCE PRACTICES	31-51-00		201	LOM ALL
Aural Warning System - Deactivation TASK 31-51-00-040-801			201	LOM ALL
Aural Warning System - Activation TASK 31-51-00-440-801			204	LOM ALL

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Aural Warning System - System Test TASK 31-51-00-730-801			502	LOM ALL
Landing Warning System Test TASK 31-51-00-730-802			502	LOM ALL
Takeoff Warning System Test TASK 31-51-00-730-803			513	LOM ALL
Autothrottle - Switchpack Test TASK 31-51-00-741-804			525	LOM ALL
FLAP LANDING WARNING SWITCH - REMOVAL/INSTALLATION	31-51-01		401	LOM ALL
Flap Landing Warning Switch Removal TASK 31-51-01-000-801			402	LOM ALL
Flap Landing Warning Switch Installation TASK 31-51-01-400-801			410	LOM ALL
Flap Landing Warning Switch Adjustment and Test TASK 31-51-01-820-801			413	LOM ALL
STABILIZER TAKEOFF WARNING SWITCHES - REMOVAL/INSTALLATION	31-51-02		401	LOM ALL
Stabilizer Takeoff Warning Switch Removal TASK 31-51-02-000-801			401	LOM ALL
Stabilizer Takeoff Warning Switch Installation TASK 31-51-02-400-801			409	LOM ALL
STABILIZER TAKEOFF WARNING SWITCHES - ADJUSTMENT/TEST	31-51-02		501	LOM ALL
Stabilizer Takeoff Warning Switches Adjustment TASK 31-51-02-820-801			501	LOM ALL
Stabilizer Takeoff Warning Switches Test TASK 31-51-02-700-801			508	LOM ALL

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SPEEDBRAKE TAKEOFF WARNING SWITCH - REMOVAL/INSTALLATION	31-51-03		401	LOM ALL
Speedbrake Takeoff Warning Switch - Removal TASK 31-51-03-000-801			401	LOM ALL
Speedbrake Takeoff Warning Switch - Installation TASK 31-51-03-400-801			407	LOM ALL
AURAL WARNING MODULE - REMOVAL/INSTALLATION	31-51-04		401	LOM ALL
Aural Warning Module Removal TASK 31-51-04-000-801			401	LOM ALL
Aural Warning Module Installation TASK 31-51-04-400-801			403	LOM ALL
COMMON DISPLAY SYSTEM - MAINTENANCE PRACTICES	31-62-00		201	LOM ALL
Common Display System - Deactivation TASK 31-62-00-040-801			201	LOM ALL
Common Display System - Activation TASK 31-62-00-440-801			204	LOM ALL
COMMON DISPLAY SYSTEM - ADJUSTMENT/TEST	31-62-00		501	LOM ALL
Common Display System - Operational Test TASK 31-62-00-710-801			501	LOM ALL
Common Display System - System Test TASK 31-62-00-730-801			508	LOM ALL
DISPLAY UNIT - REMOVAL/INSTALLATION	31-62-11		401	LOM ALL
Display Unit Removal TASK 31-62-11-000-801			401	LOM ALL
Display Unit Installation TASK 31-62-11-400-801			404	LOM ALL
DISPLAY UNIT - CLEANING/PAINTING	31-62-11		701	LOM ALL
How to Clean the Display Surface TASK 31-62-11-100-801			701	LOM ALL
How to Clean the Display Unit Light Sensor TASK 31-62-11-100-802			702	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
How to Clean the Holes on the Rear of the Display Unit TASK 31-62-11-100-803			703	LOM ALL
EFIS CONTROL PANEL - REMOVAL/INSTALLATION	31-62-12		401	LOM ALL
EFIS Control Panel Removal TASK 31-62-12-000-801			401	LOM ALL
EFIS Control Panel Installation TASK 31-62-12-400-801			404	LOM ALL
LIGHTING CONTROL MODULE - REMOVAL/INSTALLATION	31-62-13		401	LOM ALL
Lighting Control Module Removal TASK 31-62-13-000-801			401	LOM ALL
Lighting Control Module Installation TASK 31-62-13-400-801			403	LOM ALL
INSTRUMENT SWITCHING MODULE - REMOVAL/INSTALLATION	31-62-14		401	LOM ALL
Instrument Switching Module Removal TASK 31-62-14-000-801			401	LOM ALL
Instrument Switching Module Installation TASK 31-62-14-400-801			403	LOM ALL
DISPLAY ELECTRONIC UNIT - MAINTENANCE PRACTICES	31-62-21		201	LOM ALL
Display Electronic Unit Software - Installation with an Airborne Data Loader TASK 31-62-21-470-801			201	LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438
BITE Data Output from the DEUs to an Airborne Data Loader TASK 31-62-21-470-803			204	LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438
Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL) TASK 31-62-21-470-805			207	LOM 429-431, 440, 442-447, 450-460, 464-999
BITE Data Output from the DEUs to an enhanced Airborne Data Loader (eADL) TASK 31-62-21-470-806			212	LOM 429-431, 440, 442-447, 450-460, 464-999

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CHAPTER 31
INDICATING/RECORDING SYSTEMS

SUBJECT	CHAPTER SECTION SUBJECT	CONF	PAGE	EFFECT
Display Electronic Unit Software - Installation with a Portable Data Loader TASK 31-62-21-470-802			219	LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999
BITE Data Output from the DEUs to a Portable Data Loader TASK 31-62-21-470-804			224	LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999
DISPLAY ELECTRONIC UNIT - REMOVAL/INSTALLATION	31-62-21		401	LOM ALL
Display Electronic Unit Removal TASK 31-62-21-000-801			401	LOM ALL
Display Electronic Unit Installation TASK 31-62-21-400-801			404	LOM ALL
DISPLAY ELECTRONIC UNIT - CLEANING/PAINTING	31-62-21		701	LOM ALL
How to Clean the Cooling Air Inlet Screen for the Display Electronic Unit TASK 31-62-21-100-801			701	LOM ALL
COAXIAL COUPLER - REMOVAL/INSTALLATION	31-62-31		401	LOM ALL
Coaxial Coupler Removal TASK 31-62-31-000-801			401	LOM ALL
Coaxial Coupler Installation TASK 31-62-31-400-801			406	LOM ALL
REMOTE LIGHT SENSOR - REMOVAL/INSTALLATION	31-62-41		401	LOM ALL
Remote Light Sensor Removal TASK 31-62-41-000-801			401	LOM ALL
Remote Light Sensor Installation TASK 31-62-41-400-801			406	LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAINS PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Captains Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

484718 S0000144305_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 1 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D90231 S0000168043_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 2 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U30546 S0000189031_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 3 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632851 S0000300967_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 4 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632852 S0000300968_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 5 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824940 S0000322669_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 6 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998215 S0000390058_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 7 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1880699 S0000344833_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 8 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1891657 S0000347136_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 9 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1892416 S0000347285_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 10 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1903028 S0000350768_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 11 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996020 S0000389544_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 12 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1997701 S0000390010_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 13 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2102431 S0000447720_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 14 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2105277 S0000449401_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 15 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165829 S0000476481_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 16 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2187361 S0000485138_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 17 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2241968 S0000501410_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 18 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2242085 S0000501411_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 19 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367722 S0000541610_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 20 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2453171 S0000570168_V1

Captain's Panel - Component Location
Figure 101/31-11-21-990-802 (Sheet 21 of 21)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CENTER PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Center Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

484721 S0000144309_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 1 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P2

U30547 S0000189032_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 2 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P2

U30548 S0000189033_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 3 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

A

1632853 S0000300970_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 4 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1947954 S0000371161_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 5 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

1955078 S0000373799_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 6 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

1958641 S0000374863_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 7 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

1959514 S0000375412_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 8 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

1996025 S0000389561_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 9 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

A

1997730 S0000390013_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 10 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2015683 S0000398284_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 11 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2042210 S0000412969_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 12 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2102433 S0000447721_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 13 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2165830 S0000476482_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 14 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2241971 S0000501414_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 15 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2242086 S0000501416_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 16 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2367723 S0000541613_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 17 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824052 S0000653935_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 18 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P2

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824053 S0000653936_V1

Center Panel - Component Location
Figure 101/31-11-31-990-802 (Sheet 19 of 19)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PILOTS' GLARESHIELD - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Pilots' Glareshield.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D90240 S0000168048_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 1 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U30549 S0000189034_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 2 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998103 S0000390085_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 3 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1880745 S0000344839_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 4 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1880709 S0000344840_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 5 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1892419 S0000347297_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 6 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1903031 S0000350775_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 7 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996026 S0000389564_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 8 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1997783 S0000390038_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 9 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2015687 S0000398286_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 10 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2042211 S0000412970_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 11 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165831 S0000476483_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 12 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

2241972 S0000501419_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 13 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2242087 S0000501420_V1

Pilots' Glareshield - Component Location
Figure 101/31-11-41-990-802 (Sheet 14 of 14)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FIRST OFFICER'S PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the First Officer's Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

484765 S0000144314_V2

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 1 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D90241 S0000168050_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 2 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1551991 S0000280107_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 3 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1581791 S0000298270_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 4 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632854 S0000300972_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 5 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632855 S0000300973_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 6 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998178 S0000390059_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 7 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1890340 S0000346417_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 8 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1892423 S0000347303_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 9 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1903029 S0000350771_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 10 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996027 S0000389569_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 11 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1997804 S0000390048_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 12 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2102434 S0000447722_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 13 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2124083 S0000458083_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 14 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165833 S0000476484_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 15 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2187365 S0000485142_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 16 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2241978 S0000501422_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 17 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

P3

2242097 S0000501423_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 18 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2246573 S0000503240_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 19 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2333013 S0000531229_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 20 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2337797 S0000532842_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 21 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2362611 S0000540661_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 22 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367725 S0000541614_V1

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 23 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P3

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2427208 S0000561542_V2

First Officer's Panel - Component Location
Figure 101/31-11-51-990-802 (Sheet 24 of 24)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PILOTS' CONTROL STAND - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Pilots' Control Stand.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

484814 S0000144192_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 1 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U30551 S0000189037_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 2 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1891597 S0000347139_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 3 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1892427 S0000347310_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 4 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1903036 S0000350779_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 5 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996028 S0000389571_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 6 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998093 S0000390097_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 7 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998034 S0000390253_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 8 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2042213 S0000412973_V2

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 9 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2156677 S0000472543_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 10 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165834 S0000476485_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 11 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2241982 S0000501424_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 12 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2427209 S0000561543_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 13 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2427210 S0000561544_V2

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 14 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2435076 S0000564873_V2

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 15 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824111 S0000654205_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 16 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824112 S0000654206_V1

Pilots' Control Stand - Component Location
Figure 101/31-11-71-990-802 (Sheet 17 of 17)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD ELECTRONIC PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Forward Electronic Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

483172 S0000144089_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 1 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U30553 S0000189038_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 2 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996029 S0000389572_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 3 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998092 S0000390098_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 4 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998109 S0000390338_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 5 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2015688 S0000398287_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 6 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2127014 S0000459541_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 7 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2129844 S0000460888_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 8 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P9

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2132495 S0000462414_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 9 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2134564 S0000463147_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 10 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2135498 S0000463305_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 11 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2156680 S0000472544_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 12 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165836 S0000476487_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 13 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2187367 S0000485143_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 14 of 16)

EFFECTIVITY
LOM 432, 437, 438, 445, 450-452, 457, 461-463, 465-999

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2241989 S0000501430_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 15 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2242102 S0000501431_V1

Forward Electronic Panel - Component Location
Figure 101/31-11-81-990-802 (Sheet 16 of 16)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AFT ELECTRONIC PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Aft Electronic Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D90246 S0000168053_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 1 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

U30554 S0000189039_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 2 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1551964 S0000280113_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 3 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1581853 S0000298272_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 4 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632857 S0000300975_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 5 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824946 S0000322682_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 6 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

1824967 S0000322685_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 7 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1903038 S0000350781_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 8 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996031 S0000389573_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 9 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998088 S0000390099_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 10 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998123 S0000390341_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 11 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2015691 S0000398288_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 12 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2102436 S0000447724_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 13 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2105278 S0000449404_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 14 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

2115317 S0000453257_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 15 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2156682 S0000472545_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 16 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165838 S0000476488_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 17 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2187368 S0000485144_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 18 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2241994 S0000501438_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 19 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2246575 S0000503242_V2

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 20 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

P8

2362613 S0000540665_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 21 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367726 S0000541615_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 22 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367762 S0000541616_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 23 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2396162 S0000553540_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 24 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2424781 S0000560913_V2

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 25 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2427211 S0000561547_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 26 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2435078 S0000564874_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 27 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824114 S0000654181_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 28 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P8

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2824115 S0000654182_V1

Aft Electronic Panel - Component Location
Figure 101/31-11-91-990-807 (Sheet 29 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD OVERHEAD PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Forward Overhead Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D61026 S0000160220_V2

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 1 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

D61035 S0000160229_V2

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 2 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

1551967 S0000280123_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 3 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1581931 S0000298274_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 4 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632859 S0000300976_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 5 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824972 S0000322688_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 6 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824975 S0000322689_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 7 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

A

1998094 S0000390096_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 8 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2004255 S0000393627_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 9 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2015695 S0000398291_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 10 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2039695 S0000411936_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 11 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2188624 S0000485619_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 12 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2102437 S0000447725_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 13 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2129848 S0000460909_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 14 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2134567 S0000463149_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 15 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2156689 S0000472546_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 16 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165845 S0000476490_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 17 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2187369 S0000485145_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 18 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2213564 S0000493841_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 19 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

P5

A

2242040 S0000501452_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 20 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2246578 S0000503245_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 21 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

P5

A

2367764 S0000541619_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 22 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367727 S0000541617_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 23 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2371083 S0000542759_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 24 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

P5

A

2362614 S0000540668_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 25 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2396166 S0000553541_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 26 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2427212 S0000561548_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 27 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2427214 S0000561549_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 28 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

A

2435087 S0000564875_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 29 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

P5

A

2824120 S0000654201_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 30 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

P5

A

2824121 S0000654202_V1

Forward Overhead Panel - Component Location
Figure 101/31-11-94-990-802 (Sheet 31 of 31)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AFT OVERHEAD PANEL - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Aft Overhead Panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

D90259 S0000168076_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 1 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U30559 S0000189044_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 2 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1581992 S0000298278_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 3 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632861 S0000300977_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 4 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824981 S0000322704_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 5 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824991 S0000322705_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 6 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1930446 S0000364859_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 7 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1996096 S0000389577_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 8 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998078 S0000390115_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 9 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2015699 S0000398292_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 10 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2042630 S0000412980_V2

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 11 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2102438 S0000447726_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 12 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P5

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2103428 S0000448647_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 13 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2115320 S0000453258_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 14 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2156684 S0000472547_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 15 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2165846 S0000476491_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 16 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2242046 S0000501455_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 17 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367729 S0000541623_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 18 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367765 S0000541624_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 19 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2424783 S0000560915_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 20 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2427216 S0000561552_V2

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 21 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2435089 S0000564876_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 22 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824128 S0000654193_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 23 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824129 S0000654194_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 24 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P5

A

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2931975 S0000709109_V1

Aft Overhead Panel - Component Location
Figure 101/31-11-95-990-802 (Sheet 25 of 25)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AUXILIARY PANELS - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Auxiliary Panels.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D90267 S0000168081_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 1 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

U30561 S0000189047_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 2 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1551989 S0000280142_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 3 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1582047 S0000298279_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 4 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1824998 S0000322707_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 5 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

1997232 S0000389929_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 6 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

1998073 S0000390147_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 7 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

1998192 S0000390356_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 8 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2004257 S0000393628_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 9 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2015704 S0000398294_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 10 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2032366 S0000407927_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 11 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2124088 S0000458089_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 12 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2134569 S0000463150_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 13 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2156690 S0000472548_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 14 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2187370 S0000485146_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 15 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2273784 S0000512331_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 16 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2274085 S0000512481_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 17 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2276743 S0000513833_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 18 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2276694 S0000513806_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 19 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2278594 S0000514562_V2

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 20 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2332885 S0000531155_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 21 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2333027 S0000531248_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 22 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2362610 S0000540660_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 23 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS.
THE CUSTOMER'S CONFIGURATION COULD HAVE
INOP MARKERS INSTALLED.

2367730 S0000541625_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 24 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2396169 S0000553546_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 25 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2427217 S0000561556_V2

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 26 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2558803 S0000610647_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 27 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:
THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824132 S0000654203_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 28 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THIS GRAPHIC DOES NOT SHOW INOP MARKERS. THE CUSTOMER'S CONFIGURATION COULD HAVE INOP MARKERS INSTALLED.

2824133 S0000654204_V1

Auxiliary Panels - Component Location
Figure 101/31-11-98-990-806 (Sheet 29 of 29)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD CABIN ATTENDANTS' PANELS - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Forward Cabin Attendants' Panels.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P13

A

D90277 S0000168083_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 1 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P13

U30563 S0000189049_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 2 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1551994 S0000280143_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 3 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P13

A

1582084 S0000298280_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 4 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1632849 S0000300980_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 5 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

P13

A

1825017 S0000322710_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 6 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1825075 S0000322712_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 7 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1839009 S0000325577_V1

Forward Cabin Attendants' Panels - Component Location
Figure 101/31-15-11-990-802 (Sheet 8 of 8)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AFT CABIN ATTENDANTS' PANELS - COMPONENT LOCATION

1. **General**

   A. This procedure contains the component location for the Aft Cabin Attendants' Panels.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

413606 S0000136657_V1

Aft Cabin Attendants' Panels - Component Location
Figure 101/31-15-21-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A

P14

U30565 S0000189051_V1

Aft Cabin Attendants' Panels - Component Location
Figure 101/31-15-21-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1839010 S0000325578_V1

Aft Cabin Attendants' Panels - Component Location
Figure 101/31-15-21-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CLOCKS - ADJUSTMENT/TEST

1. General

A. This procedure has this task:

(1) A system test of the clocks.

B. There are two clocks on the airplane. One in the captain's instrument panel P1-1 and one in the first officer's instrument panel P3-3.

LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET BUTTON

TASK 31-25-00-710-803

2. Clocks - System Test

A. Location Zones

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

B. System Test

SUBTASK 31-25-00-860-100

(1) Set the battery switch, on the P5 overhead panel, to the ON position.

SUBTASK 31-25-00-860-018

(2) Open and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY
A	2	C00737	MISC CLOCK

SUBTASK 31-25-00-860-020

(3) Make sure that the time shows.

SUBTASK 31-25-00-860-021

(4) Make sure that the UTC-TIME indication shows.

SUBTASK 31-25-00-860-023

(5) Push the TIME/DATE button to show the UTC-DAY MO/YR.

SUBTASK 31-25-00-860-024

(6) Push the TIME/DATE button to show the MAN-TIME.

SUBTASK 31-25-00-860-025

(7) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-058

(8) Push the TIME/DATE button to show the UTC-TIME.

SUBTASK 31-25-00-860-026

(9) Push the TIME/DATE button to show the UTC-DAY MO/YR.

(a) Make sure that the date shows.

SUBTASK 31-25-00-860-027

(10) Push the TIME/DATE button to show the MAN-TIME.

(a) Make sure that the time shows.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET BUTTON (Continued)

SUBTASK 31-25-00-860-028

(11) Push the TIME/DATE button to show the MAN-DAY MO/YR.

(a) Make sure that the date shows.

SUBTASK 31-25-00-860-029

(12) Push the TIME/DATE button to show the MAN-TIME.

SUBTASK 31-25-00-860-030

(13) Push the SET button to allow for the setting of the hours digits.

(a) Push the + or - buttons to adjust the hours digits to 12:00.

SUBTASK 31-25-00-860-031

(14) Push the SET button to allow for the setting of the minutes digits.

(a) Push the + or - buttons to adjust the minutes digits to 12:10.

SUBTASK 31-25-00-860-032

(15) Push the SET button to complete the setting of time.

SUBTASK 31-25-00-860-033

(16) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY

SUBTASK 31-25-00-860-034

(17) Make sure that the displays are blank.

(a) Wait at least 2 minutes before continue to the next step.

SUBTASK 31-25-00-860-035

(18) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY

SUBTASK 31-25-00-860-036

(19) Make sure that the MAN-TIME has continued to increment the previous time set.

NOTE: The 2 minutes interruption of the clock display does not affect the clock operation.

SUBTASK 31-25-00-860-037

(20) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	2	C00737	MISC CLOCK

SUBTASK 31-25-00-860-038

(21) Make sure that the MAN TIME display continues to show time.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET BUTTON (Continued)

SUBTASK 31-25-00-860-039

(22) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	2	C00737	MISC CLOCK

SUBTASK 31-25-00-860-040

(23) Push the TIME/DATE button to show the MAN-TIME.

SUBTASK 31-25-00-860-041

(24) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-042

(25) Push the TIME/DATE button to show the UTC-TIME.

SUBTASK 31-25-00-860-043

(26) Push the TIME/DATE button to show the UTC-DAY MO/YR.

SUBTASK 31-25-00-860-044

(27) Push the TIME/DATE button to show the MAN-TIME.

(a) Make sure that the MAN-TIME display continues to show the manually set time.

SUBTASK 31-25-00-860-045

(28) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-046

(29) Push the SET button to allow for the setting of the DAY digits.

SUBTASK 31-25-00-860-047

(30) Push the + or - buttons to adjust the DAY digits to the current day.

SUBTASK 31-25-00-860-048

(31) Push the SET button to allow for the setting of the MON digits.

SUBTASK 31-25-00-860-049

(32) Push the + or - buttons to adjust the MON digits to the current month.

SUBTASK 31-25-00-860-050

(33) Push the SET button to allow for the setting of the YR digits.

SUBTASK 31-25-00-860-051

(34) Push the + or - buttons to adjust the YR digits to the current year.

SUBTASK 31-25-00-860-052

(35) Push the SET button to complete the setting of the date.

SUBTASK 31-25-00-860-053

(36) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-054

(37) Push the TIME/DATE button to show the UTC-TIME.

SUBTASK 31-25-00-860-055

(38) Push the TIME/DATE button to show the UTC-DAY MO/YR.

SUBTASK 31-25-00-860-056

(39) Make sure that the MAN-DAY MO/YR display continues to show manually set date.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET BUTTON (Continued)

SUBTASK 31-25-00-860-101

(40) Set the battery switch, on the P5 overhead panel, to the OFF position.

——— END OF TASK ———

LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET CONTROL KNOB

TASK 31-25-00-710-804

3. Clocks - System Test

A. Location Zones

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

B. System Test

SUBTASK 31-25-00-860-102

(1) Set the battery switch, on the P5 overhead panel, to the ON position.

SUBTASK 31-25-00-860-060

(2) Open and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY
A	2	C00737	MISC CLOCK

SUBTASK 31-25-00-860-062

(3) Make sure that the time shows.

SUBTASK 31-25-00-860-063

(4) Make sure that the UTC-TIME indication shows.

SUBTASK 31-25-00-860-064

(5) Push the TIME/DATE button to show the UTC-DAY MO/YR.

SUBTASK 31-25-00-860-065

(6) Push the TIME/DATE button to show the MAN-TIME.

SUBTASK 31-25-00-860-066

(7) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-067

(8) Push the TIME/DATE button to show the UTC-TIME.

SUBTASK 31-25-00-860-068

(9) Push the TIME/DATE button to show the UTC-DAY MO/YR.

(a) Make sure that the date shows.

SUBTASK 31-25-00-860-069

(10) Push the TIME/DATE button to show the MAN-TIME.

(a) Make sure that the time shows.

SUBTASK 31-25-00-860-070

(11) Push the TIME/DATE button to show the MAN-DAY MO/YR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the date shows.

SUBTASK 31-25-00-860-071

(12) Push the TIME/DATE button to show the MAN-TIME.

SUBTASK 31-25-00-860-072

(13) Push the SET control knob to allow for the setting of the hours digits.

(a) Turn the knob clockwise or counterclockwise to adjust the hour digits to 12:00.

SUBTASK 31-25-00-860-073

(14) Push the SET control knob to allow for the setting of the minute digits.

(a) Turn the knob clockwise or counterclockwise to adjust the minute digits to 12:10.

SUBTASK 31-25-00-860-074

(15) Push the SET control knob to complete the setting of time.

SUBTASK 31-25-00-860-075

(16) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY

SUBTASK 31-25-00-860-076

(17) Make sure that the displays are blank.

(a) Wait at least 2 minutes before continue to the next step.

SUBTASK 31-25-00-860-077

(18) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY

SUBTASK 31-25-00-860-078

(19) Make sure that the MAN-TIME has continued to increment the previous time set.

NOTE: The 2 minutes interruption of the clock display does not affect the clock operation.

SUBTASK 31-25-00-860-099

(20) Open this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	2	C00737	MISC CLOCK

SUBTASK 31-25-00-860-079

(21) Make sure that the MAN TIME display continues to show time.

SUBTASK 31-25-00-860-080

(22) Close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	2	C00737	MISC CLOCK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH GPS CLOCKS WITH SET CONTROL KNOB (Continued)

SUBTASK 31-25-00-860-081

(23) Push the TIME/DATE button to show the MAN-TIME.

SUBTASK 31-25-00-860-082

(24) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-083

(25) Push the TIME/DATE button to show the UTC-TIME.

SUBTASK 31-25-00-860-084

(26) Push the TIME/DATE button to show the UTC-DAY MO/YR.

SUBTASK 31-25-00-860-085

(27) Push the TIME/DATE button to show the MAN-TIME.

(a) Make sure that the MAN-TIME display continues to show the manually set time.

SUBTASK 31-25-00-860-086

(28) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-087

(29) Push the SET control knob to allow for the setting of the DAY digits.

SUBTASK 31-25-00-860-088

(30) Turn the knob clockwise or counterclockwise to adjust the DAY digits to the current day.

SUBTASK 31-25-00-860-089

(31) Push the SET control knob for the setting of the MON digits.

SUBTASK 31-25-00-860-090

(32) Turn the knob clockwise or counterclockwise to adjust the MON digits to the current month.

SUBTASK 31-25-00-860-091

(33) Push the SET control knob to allow for the setting of the YR digits.

SUBTASK 31-25-00-860-092

(34) Turn the knob clockwise or counterclockwise to adjust the YR digits to the current year.

SUBTASK 31-25-00-860-093

(35) Push the SET control knob to complete the setting of the date.

SUBTASK 31-25-00-860-094

(36) Push the TIME/DATE button to show the MAN-DAY and MO/YR.

SUBTASK 31-25-00-860-095

(37) Push the TIME/DATE button to show the UTC-TIME.

SUBTASK 31-25-00-860-096

(38) Push the TIME/DATE button to show the UTC-DAY MO/YR.

SUBTASK 31-25-00-860-097

(39) Make sure that the MAN-DAY MO/YR display continues to show manually set date.

SUBTASK 31-25-00-860-103

(40) Set the battery switch, on the P5 overhead panel, to the OFF position.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CLOCKS - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the left (captain's) and the right (first officer's) clocks.

(2) An installation of the left and right clocks.

B. The left clock is on the left instrument panel, P1-1, in the flight compartment. The right clock is on the right instrument panel, P3-3, also in the flight compartment.

TASK 31-25-11-000-801

2. Clock Removal

(Figure 401)

A. General

(1) There are four screws around each clock. There are two screws that hold the mounting clamp to the instrument panel (small screw pair). There are two screws that hold the clock to the mounting clamp (large screw pair).

B. Location Zones

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

C. Removal Procedure

SUBTASK 31-25-11-860-001

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY
A	2	C00737	MISC CLOCK

SUBTASK 31-25-11-020-001

CAUTION

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

(2) Remove the CLOCK [1]:

(a) Loosen the screws that hold the CLOCK [1] to the mounting clamp.

NOTE: The clock uses four clamp screws. There are two screws that hold the clock to the mounting clamp (large screw pair). There are two screws that hold the mounting clamp to the instrument panel (small screw pair).

(b) Pull the CLOCK [1] out of the instrument panel.

(c) Disconnect the electrical connector.

SUBTASK 31-25-11-860-002

(3) Put protective covers on the electrical connector.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

CLOCK
(EXAMPLE)

A

D66604 S0000163144_V3

Left and Right Clock Installation
Figure 401/31-25-11-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-25-11-400-801

3. Clock Installation

(Figure 401)

A. General

(1) There are four screws around each clock. There are two screws that hold the mounting clamp to the instrument panel (small screw pair). There are two screws that hold the clock to the mounting clamp (large screw pair).

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	CLOCK	31-25-11-04-020	LOM ALL

C. Location Zones

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

D. Installation Procedure

SUBTASK 31-25-11-860-003

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY
A	2	C00737	MISC CLOCK

SUBTASK 31-25-11-420-001

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

(2) Install the CLOCK [1]:

(a) Remove the protective covers from the electrical connector.

(b) Examine the electrical connector for bent or broken pins, dirt and damage.

(c) Connect the electrical connector.

(d) Put the CLOCK [1] into the instrument panel.

(e) Tighten the screws that hold the CLOCK [1] to the mounting clamp.

NOTE: The clock uses four clamp screws. There are two screws that hold the clock to the mounting clamp (large screw pair). There are two screws that hold the mounting clamp to the instrument panel (small screw pair).

E. Installation Test

SUBTASK 31-25-11-700-001

(1) Do the installation test:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY
A	2	C00737	MISC CLOCK

(b) Set the CLOCK [1] to the correct GreenWich Mean Time (GMT) and date.

(c) Let the CLOCK [1] operate for not less than two minutes.

(d) Make sure the CLOCK [1] shows the correct time.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER (FDR) - MAINTENANCE PRACTICES

1. **General**
   A. This procedure contains scheduled maintenance task data.
   B. This procedure contains:
      (1) Flight Data Recorder System Deactivation
      (2) Flight Data Recorder System Activation
      (3) A task to set Flight Data Recorder (FDR) single state analog discrete signals. The signals are set so they are recorded by the FDR.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426

(4) A task to make a copy of the data from the Allied Signal solid state flight data recorder (SSFDR) with the use of a hand held download unit (HHDLU).

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999

(5) A task to make a copy of the data from the Lockheed solid state flight data recorder with the use of a portable interface (PI)

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042

(6) A task to make a copy of the data from the Honeywell SSFDR with the use of a customer owned dedicated portable laptop with the Honeywell SSFDR download software.

LOM ALL; AIRPLANES WITH LOCKHEED FDR, FAIRCHILD FDR, AND HONEYWELL HFR5-D

(7) A task to make a copy of the flight data recorder data (FDR) from the Flight Data Systems hand held multi purpose interface (HHMPI)

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(8) Copy the data from the Solid State Flight Data Recorder (SSFDR) with the Data Acquisition Ruggedized Tool (DART).

LOM ALL

TASK 31-31-00-040-801

2. **Flight Data Recorder System - Deactivation**

   A. General
   (1) This procedure removes electrical power to the Flight Data Recorder System (FDRS).

   B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Flight Data Recorder System Deactivation

SUBTASK 31-31-00-860-739

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

D. Flight Data Recorder System - Tryout

NOTE: This tryout is to make sure that the FDRS in a zero energy state.

SUBTASK 31-31-00-860-740

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-710-051

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

(a) Make sure that the flight recorder OFF light is on.

(b) Make sure that all of the fault lights, on the Flight Data Acquisition Unit (FDAU) front panel, do not come on.

SUBTASK 31-31-00-710-052

(3) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

(a) Push one of the MASTER CAUTION lights on the P7 glareshield panel.

1) Make sure that the two MASTER CAUTION lights are off.

2) Make sure that the flight recorder OFF light is on.

——— END OF TASK ———

TASK 31-31-00-440-801

3. Flight Data Recorder System - Activation

A. General

(1) This procedure adds power to the flight data recorder system.

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Procedure

SUBTASK 31-31-00-860-738

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

END OF TASK

TASK 31-31-00-700-801

4. Flight Data Recorder - Single State Analog Discrete Parameter Test

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task includes the steps to set parameters recorded by the Flight Data Recorder (FDR) before the data is downloaded.

(2) Depending on the tool being used, only one Task Card needs to be completed for each schedule per the airplane.

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)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
29-21-00-000-802	Standby Hydraulic System Power Removal (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-11202	Smoke Generator - Lavatory/Crew Rest Smoke Detector (or 737 Cargo Area Type Smoke Detectors) Part #: HO-25S Supplier: 61908 Part #: SOLOA10 Supplier: 1WU32 Opt Part #: SOLOA3 Supplier: 1WU32 Opt Part #: SOLOA4 Supplier: 1WU32

D. Location Zones

Zone	Area
118	Electrical and Electronics Compartment - Right
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Prepare for the Task

SUBTASK 31-31-00-700-010

(1) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

G. Flight Data Recorder - Single State Analog Discrete Parameter Test

SUBTASK 31-31-00-700-008

(1) Do these steps to set the applicable overheat/fire discrete signals:

(a) Push the fire test switch, on the P8 overheat/fire detection panel, to the OVHT/FIRE position and hold for at least 4 seconds.

1) Make sure that these lights, on the P8 overheat/fire detection panel, are on:

a) ENG 1 fire handle light

b) ENG 2 fire handle light

c) Wheel Well light

d) APU fire light.

SUBTASK 31-31-00-700-012

(2) Push and hold the cargo smoke detection and fire suppression test button, on the P8-75 panel, for at least 4 seconds.

(a) Make sure that these lights, on the P8-75 panel, are on:

1) EXT FWD and EXT AFT green lights come on.

2) FWD and AFT red switchlights come on.

3) DISCH amber light comes on.

4) The DETECTOR FAULT light is off.

(b) Make sure that these lights, on the P7 pilot's lightshield, are on:

1) The Captain's and First Officer's FIRE WARN red lights come on.

(c) Make sure that the aural warning unit gives the bell sound.

LOM 427, 437, 438

SUBTASK 31-31-00-700-018

(3) For smoke detectors with self test, push and hold the self test button on one of the lavatory smoke detectors or on the forward lavatory smoke detector control panel for at least 4 seconds.

NOTE: The self test button is located on each individual smoke detector when there is no forward lavatory smoke detector panel. When there is a forward lavatory smoke detector panel, the self test button is located there.

(a) Make sure that the lavatory smoke detector horn comes on.

(4) For smoke detectors without self test, use a smoke generator, COM-11202, to generate smoke near one of the lavatory smoke detectors.

(a) Make sure that the lavatory smoke detector horn comes on.

LOM ALL

SUBTASK 31-31-00-700-013

(5) Do these steps to set the stall warning discrete signal:

(a) Push the NO. 1 STALL WARNING TEST switch.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the captains shaker operates.

(b) Push the NO. 2 STALL WARNING TEST switch.

1) Make sure that the first officers shaker operates.

SUBTASK 31-31-00-700-014

(6) Do these steps to set the applicable hydraulic system low pressure discrete signals:

(a) Make sure that the A and B hydraulic systems are not pressurized.

1) To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(b) Make sure that the STBY hydraulic system is not pressurized.

1) To remove hydraulic pressure, do this task: Standby Hydraulic System Power Removal, TASK 29-21-00-000-802.

(c) Do these steps to set the low hydraulic pressure system A engine 1 discrete signal:

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

2) Remove connector D2684 from the system A engine 1 low pressure switch, S796.

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

4) Make sure that the ENG 1 LOW PRESSURE light of system A, on the P5 hydraulic pump panel, is off.

5) Wait at least 4 seconds.

NOTE: The test could take up to a few minutes.

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

7) Install connector D2684 to the system A engine 1 low pressure switch, S796.

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

9) Make sure that the ENG 1 LOW PRESSURE light of system A, on the P5 hydraulic pump panel, is on.

(d) Do these steps to set the low hydraulic pressure system B engine 2 discrete signal:

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

2) Remove connector D2686 from the system B engine 2 low pressure switch, S797.

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

4) Make sure that the ENG 2 LOW PRESSURE light of system B, on the P5 hydraulic pump panel, is off.

5) Wait at least 4 seconds.

NOTE: The test could take up to a few minutes.

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

7) Install connector D2686 to the system B engine 2 low pressure switch, S797.

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

9) Make sure that the ENG 2 LOW PRESSURE light of system B, on the P5 hydraulic pump panel, is on.

(e) Do these steps to set the standby hydraulic pressure transmitter discrete signal:

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WARNING MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT

1) Make sure that the FLT CONTROL hydraulic pressure system switches A and B, on the P5 panel, are not in the STBY RUD position.

2) Set the FLT CONTROL switch A, on the P5 panel, to the STBY RUD position.

   a) Make sure the STANDBY HYD low pressure light, on the P5 panel, is off.

      NOTE: The STANDBY HYD low pressure light may come on briefly when the FLT CONTROL switch is set to STBY RUD.

3) To get access to P92 panel, open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

WARNING WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

4) Open this circuit breaker and install safety tag:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

   a) Make sure that the STANDBY HYD low pressure light, on the P5 panel, is on.

5) Wait at least 4 seconds.

   NOTE: The test could take up to a few minutes.

6) Set the FLT CONTROL switch A, on the P5 panel, to the ON position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING

DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

7) Remove the safety tag and close this circuit breaker:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

SUBTASK 31-31-00-700-015

(7) Do these steps to set the cabin altitude > 10K discrete signal:

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

(b) Remove connector D776 from the cabin pressure switch (S128).

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

(d) Apply a ground to pin A of D776 connector.

1) Make sure that the aural warning horn in the flight compartment comes on.

(e) Wait at least 4 seconds.

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

(g) Remove the ground from pin A of D776 connector.

(h) Install connector D776 to the cabin pressure switch (S128).

H. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-00-700-009

(1) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, in the NORMAL position.

SUBTASK 31-31-00-410-010

(2) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-00-970-803

5. Copy the Data from the Solid State Flight Data Recorder with a Hand Held Download Unit

Figure 31-31-11-990-801

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task uses a handheld download unit, COM-913 (HHDLU) to make a copy of the flight data from an Solid-State Flight Data Recorder (SSFDR) while the Flight Data Recorder (FDR) is in the airplane.

(2) The copied data then can be analyzed at a different location by the applicable airline personnel or this service can be ordered through Flight Recorder Data Services found on MyBoeingFleet.

B. References

Reference	Title
25-21-45-000-801	Ceiling Panel - Removal (P/B 401)
25-21-45-400-801	Ceiling Panel - Installation (P/B 401)
31-31-11-990-801	Figure: Flight Data Recorder 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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
STD-1048	Stepladder - 6 foot (1.83m)

D. Location Zones

Zone	Area
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

E. Copy the Data from the Solid State Flight Data Recorder with a Hand Held Download Unit

SUBTASK 31-31-00-860-021

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-010-003

(2) To get access to the FDR in the aft passenger compartment, open the lowered ceiling panel Ceiling Panel - Removal, TASK 25-21-45-000-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-800-003

(3) Use a 6 foot (1.83m) stepladder, STD-1048, to access the flight data recorder [2].

SUBTASK 31-31-00-860-022

(4) Make sure that the power switch, on the handheld download unit, COM-913, is in the OFF position.

SUBTASK 31-31-00-420-004

(5) Connect the Hand-Held Down-load Unit (HHDLU) cable to the FDR.

SUBTASK 31-31-00-420-005

(6) Install the removable media into the HHDLU.

SUBTASK 31-31-00-860-023

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-860-024

(8) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-00-860-025

(9) Set the HHDLU to the ON position.

NOTE: When power is first applied to the HHDLU, the HHDLU display will not be on. After approximately 30 seconds. The HHDLU display will show the main menu.

(a) Make sure that the HHDLU display shows DNLD in the main menu.

SUBTASK 31-31-00-860-026

(10) Push the DNLD key.

(a) Make sure that the DOWNLOAD MENU shows on the display.

NOTE: The maximum quantity of flight data the HHDLU can make a copy of is 27.2 hours. If the file DOWNLOAD01.DLU already exists on the removable media, the HHDLU will change the filename until a filename that is not used is found. To change the time or filename, push the TIME or FILE key.

SUBTASK 31-31-00-860-681

(11) To change the file name do the following:

(a) Press the FILE key to display the file name editing menu.

(b) Press the left or right arrow keys to move the cursor to the character to be changed.

(c) Press the SEL key to enable the character modification display.

(d) Press the left or right arrow keys to scroll through the possible replacement characters to select the required file name character.

NOTE: Hold the left or right arrow keys down to scroll continuously.

(e) Press the CHNG key to accept the character modification.

NOTE: The HHDLU will return to the file name editing menu with the edited file name displayed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(f) Continue changing file name characters until required changes are complete.

(g) Press the DONE key to return to the file name editing menu when the new file name is complete.

1) Press the EXIT key to return to the file name editing menu without modifying the file name.

SUBTASK 31-31-00-860-685

(12) To select the amount of time downloaded from Digital Flight Data Recorder (DFDR) with HHDLU do the following:

(a) Press the TIME key.

(b) Press the left or right arrow keys to change how many hours of DFDR recorded data is required to be downloaded.

(c) Press the SEL key.

NOTE: To return to the Download Menu without accepting the displayed value, press EXIT. The Download Menu's TIME value will remain at its previous value.

SUBTASK 31-31-00-860-027

(13) Start the download.

NOTE: Handheld download units can have different buttons to start the downloading procedure. Examples are GO or START buttons.

(a) If the HHDLU display shows DISK FULL, do these steps:

1) Push a key.

a) Make sure that the DELETE FILE menu shows on the display.

2) Use the NEXT or PREV key to move up and down the filenames.

3) Push the DEL key to make a selection of the file to be erased.

a) Make sure that the CONFIRM DELETE menu shows on the display.

4) Push the YES key to erase the file.

5) Erase files until sufficient memory is available to make a copy of the flight data.

NOTE: After each file is erased, the HHDLU makes sure that the HHDLU has sufficient memory space. If there is sufficient memory, the HHDLU will start to make a copy.

SUBTASK 31-31-00-860-028

(14) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position after the copy procedure is complete.

NOTE: The copied data then can be analyzed at a different location by the applicable airline personnel or this service can be ordered through Flight Recorder Data Services found on MyBoeingFleet.

SUBTASK 31-31-00-420-009

(15) Remove the removable media from the HHDLU.

SUBTASK 31-31-00-860-372

(16) Set the power switch, on the handheld download unit, COM-913, to the OFF position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 407, 411, 412, 415, 420, 422-426 (Continued)

SUBTASK 31-31-00-860-029

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-020-003

(18) Disconnect the interface cable from the FDR.

SUBTASK 31-31-00-860-030

(19) Put the cover on the FDR Automatic Test Equipment (ATE) connector.

SUBTASK 31-31-00-860-031

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-410-003

(21) Close the lowered ceiling panel Ceiling Panel - Installation, TASK 25-21-45-400-801.

——— END OF TASK ———

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999

TASK 31-31-00-970-806

6. Copy of the Data from the SSFDR with the use of a Hand Held Multi-Purpose Portable Interface (HHMPI) or Portable Interface

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task uses the Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694, or handheld portable interface unit, COM-24229 (alternate) to copy the data from the 2100 series model Solid-State Flight Data Recorder (SSFDR) while the SSFDR is on the airplane.

(2) The Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694, puts the data on a Universal Serial Bus (USB) flash drive.

(3) The portable interface unit, COM-24229, puts the data on a removal PC card, Personal Computer Memory Card Interface Adapter (PCMCIA).

(4) The copied data then can be analyzed at a different location by the applicable airline personnel or this service can be ordered though Flight Recorder Data Services found on MyBoeingFleet.

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.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999 (Continued)

Reference	Description
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-24229	Unit - Interface, Portable (PI/1, PI/2) Part #: 17TES0043 Supplier: 06141 Opt Part #: 17TES0065 Supplier: 06141
STD-1048	Stepladder - 6 foot (1.83m)

C. Location Zones

Zone	Area
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

D. Copy of the Data from the SSFDR

SUBTASK 31-31-00-010-008

(1) To get access to the Flight Data Recorder (FDR) in the aft passenger compartment, open the lowered ceiling panel.

SUBTASK 31-31-00-800-005

(2) Use a 6 foot (1.83m) stepladder, STD-1048, to access the FDR.

SUBTASK 31-31-00-860-501

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-010-007

(4) Open the Ground Support Equipment (GSE) connector cover located on the front of the FDR.

SUBTASK 31-31-00-420-012

(5) Remove the end cap from the bottom of the Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694, or portable interface unit, COM-24229 (alternate).

SUBTASK 31-31-00-420-013

(6) If it is necessary, install the removable media into the interface unit..

SUBTASK 31-31-00-420-014

(7) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the FDR:

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-502

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-860-503

(9) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-00-860-504

(10) Make sure that the FDR main menu shows on the Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694, or portable interface unit, COM-24229 (alternate) display.

SUBTASK 31-31-00-860-505

(11) Make a copy of the FDR data with the portable interface unit, COM-24229, as follows:

NOTE: The arrow switches move the cursor. The SELECT switch makes a selection. The DELETE switch goes back one selection. The HOME/MENU switch causes the FDR main menu to show.

(a) COPY

(b) Use a maximum of 11 letters, numbers, and symbols to make a name (file ID) for the data copy.

(c) START

(d) START COPY.

NOTE: The portable interface unit, COM-24229, shows the remaining time to make the copy of the data.

SUBTASK 31-31-00-860-602

(12) Make a copy of the FDR data with the Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694, as follows:

(a) Use the Up and Down arrow buttons to select DOWNLOAD OPERATIONS from the main menu.

(b) Push the Right arrow button.

(c) Use the Up and Down arrow buttons to select the applicable download option:

1) FDR ALL

NOTE: FDR ALL option downloads all available data.

2) FDR Since Last

NOTE: FDR Since Last option downloads all the data recorded since the last download.

3) FDR Mark

NOTE: FDR Mark option downloads the data from a pre-recorded marker.

4) FDR Time.

NOTE: FDR Time option downloads data for a specified time.

(d) Push the Right arrow button for the applicable download option.

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(e) Select to store the data on the USB flash drive.

(f) Push the Right arrow button to start download.

(g) Push the OK button when download is completed.

SUBTASK 31-31-00-860-506

(13) After the copy procedure is completed, make sure that the FDR main menu shows on the display.

SUBTASK 31-31-00-860-507

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-020-005

(15) Disconnect the HHMPI cable from the FDR:

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

SUBTASK 31-31-00-420-015

(16) If it is necessary, remove the removable media from the interface unit.

SUBTASK 31-31-00-860-508

(17) Close the GSE connector cover on the FDR.

SUBTASK 31-31-00-860-509

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-860-510

(19) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-00-410-008

(20) Close the lowered ceiling panel.

——— END OF TASK ———

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042

TASK 31-31-00-970-807

7. Copy of the Data from the Honeywell SSFDR with the Flight Data Recorder Download Unit

NOTE: This procedure is a scheduled maintenance task.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042 (Continued)

A. General

(1) This task uses a customer owned dedicated portable laptop with the download unit, COM-12815, HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750, HHMPI interface cable (Honeywell SSDFDR), COM-13695, HHMPI interface cable (Honeywell HFR5-D), COM-13696, or HHMPI interface cable (L-3 Comm FA2100), COM-13697, to make a copy of the flight data from a Honeywell Solid-State Flight Data Recorder (SSFDR) while the Flight Data Recorder (FDR) is in the airplane.

(2) The copied data then can be analyzed at a different location by the applicable airline personnel or this service can be ordered through Flight Recorder Data Services found on MyBoeingFleet.

(3) The Hand Held Multi-Purpose Interface (HHMPI) interface cables are only applicable to the HHMPI.

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-12815	Download Unit - Flight Data Recorder Part #: 17TES0043 Supplier: 06141 Part #: 17TES0060 Supplier: 06141 Part #: 69001074-080 Supplier: 97896 Part #: 802-02XX Supplier: 1JSZ6 Part #: FDS40-0301 Supplier: Z7C70 Part #: UCR-2-3-1 Supplier: 1TLM9 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 802-0208 Supplier: 1JSZ6 Opt Part #: 964-0446-001 Supplier: 97896 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
STD-1048	Stepladder - 6 foot (1.83m)

C. Location Zones

Zone	Area
212	Flight Compartment - Right

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042 (Continued)

(Continued)

Zone	Area
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

D. Copy of the Data from the Honeywell SSFDR with the Flight Data Recorder Download Unit

SUBTASK 31-31-00-860-704

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465

SUBTASK 31-31-00-860-705

(2) To get access to the FDR in the aft passenger compartment, open the lowered ceiling panel.

SUBTASK 31-31-00-860-706

(3) Use a 6 foot (1.83m) stepladder, STD-1048, to access the flight data recorder [2].

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042

SUBTASK 31-31-00-860-707

(4) Connect the Flight Data Recorder Download Unit to the Honeywell SSFDR.

- download unit, COM-12815
- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

SUBTASK 31-31-00-860-708

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-860-709

(6) Set the switch, on the download unit, COM-12815, to the ON position.

SUBTASK 31-31-00-860-710

(7) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-00-860-711

(8) Run the Downloader program.

(a) Click the Download button.

1) Follow the prompts on the download unit, COM-12815, to complete data download.

(b) After the copy procedure is completed, click on the QUIT button.

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LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH HONEYWELL SSFDR 980-4700-042 (Continued)

SUBTASK 31-31-00-860-712

(9) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-00-860-713

(10) Set the switch, on the download unit, COM-12815, to the OFF position.

SUBTASK 31-31-00-860-714

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-860-715

(12) Disconnect the download unit, COM-12815, from the FDR.

NOTE: The copied data then can be analyzed at a different location by the applicable airline personnel or this service can be ordered through Flight Recorder Data Services found on MyBoeingFleet.

SUBTASK 31-31-00-860-716

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-860-717

(14) Close the lowered ceiling panel.

END OF TASK

LOM ALL; AIRPLANES WITH LOCKHEED FDR, FAIRCHILD FDR, AND HONEYWELL HFR5-D

TASK 31-31-00-970-808

8. Copy the Data from the Solid State Flight Data Recorder (SSFDR) with the Hand Held Multi Purpose Interface (HHMPI)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task uses the Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694, with the HHMPI interface cable (L-3 Comm FA2100), COM-13697, HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750, HHMPI interface cable (Honeywell SSDFDR), COM-13695, or HHMPI interface cable (Honeywell HFR5-D), COM-13696, to copy data from the Solid-State Flight Data Recorder (SSFDR) while the SSFDR is on the airplane.

(2) The Hand Held Multi-Purpose Interface (HHMPI) can store SSFDR data on the HHMPI internal memory, Secure Digital (SD) card, compact flash card or a removal PC card, Personal Computer Memory Card Interface Adapter (PCMCIA).

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(3) A reasonability assessment of the stored data can then can be done at a different location by the applicable airline personnel or this service can be ordered through Flight Recorder Data Services found on MyBoeingFleet.

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-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
STD-1048	Stepladder - 6 foot (1.83m)

C. Location Zones

Zone	Area
212	Flight Compartment - Right
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

D. Prepare to copy the SSFDR data

SUBTASK 31-31-00-860-720

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

LOM ALL

SUBTASK 31-31-00-010-009

(2) To get access to the Flight Data Recorder (FDR) in the aft passenger compartment, open the lowered ceiling panel.

SUBTASK 31-31-00-800-006

(3) Use a 6 foot (1.83m) stepladder, STD-1048, to access the FDR.

LOM ALL; AIRPLANES WITH LOCKHEED FDR, FAIRCHILD FDR, AND HONEYWELL HFR5-D

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-840-010

(4) Make sure the HHMPI is OFF.

SUBTASK 31-31-00-840-011

(5) Connect the HHMPI cable to the SSFDR.

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

SUBTASK 31-31-00-840-012

(6) Install the removable media into the HHMPI if required.

SUBTASK 31-31-00-860-721

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-840-013

(8) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

E. Copy the Data from the Solid State Flight Data Recorder (SSFDR) with the Hand Held Multi Purpose Interface (HHMPI)

SUBTASK 31-31-00-970-001

(1) Select aircraft type, model and tail number if required.

SUBTASK 31-31-00-970-002

(2) Select the memory device to store the data.

NOTE: A file download onto the HHMPI's Internal Memory will not appear if an SD memory card is connected. The SD card will override the internal memory function. Remove the SD storage card if access to the internal memory is required.

SUBTASK 31-31-00-970-003

(3) Make sure DOWNLOAD ALL DATA initializes.

(a) Press the C button to cancel the download.

SUBTASK 31-31-00-970-004

(4) Press the OK button when download has completed.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-00-860-722

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

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LOM ALL; AIRPLANES WITH LOCKHEED FDR, FAIRCHILD FDR, AND HONEYWELL HFR5-D (Continued)

SUBTASK 31-31-00-840-014

(2) Disconnect the HHMPI cable from the SSFDR.

NOTE: A reasonability assessment of the stored data can then can be done at a different location by the applicable airline personnel or this service can be ordered through Flight Recorder Data Services found on MyBoeingFleet.

SUBTASK 31-31-00-070-001

(3) Remove the media if required.

SUBTASK 31-31-00-860-723

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-840-015

(5) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

LOM ALL

SUBTASK 31-31-00-410-009

(6) Close the lowered ceiling panel.

——— END OF TASK ———

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

TASK 31-31-00-970-809

9. Copy the Data from the Solid State Flight Data Recorder (SSFDR) with the Data Acquisition Ruggedized Tool (DART)

A. General

(1) This task gives the instructions on how to use the Data Acquisition Ruggedized Tool (DART) to make a copy of the Solid State Flight Data Recorder (SSFDR) data.

(2) The copied data then can be analyzed at a different location by the applicable airline personnel.

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-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23 (Continued)

(Continued)

Reference	Description
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6

C. Location Zones

Zone	Area
220	Subzone - Passenger Compartment - Body Station 259.50 to 360.00

D. Prepare for the Copy of the SSFDR Data

SUBTASK 31-31-00-700-019

(1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

SUBTASK 31-31-00-860-797

(2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

SUBTASK 31-31-00-840-017

(3) Connect the DART interface cable, COM-23713, to the SSFDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

SUBTASK 31-31-00-840-018

(4) Connect the DART interface cable, COM-23711, to the SSFDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-00-840-019

(5) Connect the DART interface cable, COM-23712, to the SSFDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-00-860-798

(6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.

SUBTASK 31-31-00-700-020

(7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

SUBTASK 31-31-00-860-799

(8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.

SUBTASK 31-31-00-860-J01

(9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.

E. Make a Copy of the SSFDR Data

SUBTASK 31-31-00-700-021

(1) Push the F2 button to open the DOWNLOAD RECORDER screen on the DART screen.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23 (Continued)

SUBTASK 31-31-00-970-005

(2) Select Download Type.

(a) Use the Up and Down arrow buttons to select FDR Data.

(b) Push the Enter button.

SUBTASK 31-31-00-970-006

(3) Select the applicable download option:

- For the DOWNLOAD ALL option, push F2 button.
- For the DOWNLOAD X MINUTES option (if applicable), push F3 button.
- For the DOWNLOAD SINCE LAST option (if applicable), push F4 button.

SUBTASK 31-31-00-700-022

(4) If the DOWNLOAD X MINUTES option is selected, do these steps:

(a) Use the Up and Down arrow buttons to specify the desired download minutes.

(b) Push the Enter button.

(c) Push the F4 button to select START DOWNLOAD.

SUBTASK 31-31-00-700-023

(5) Enter the aircraft tail number.

(a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.

(b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.

(c) Push F4 button to select OK.

SUBTASK 31-31-00-700-024

(6) Enter the Recorder Part Number and Recorder Serial Number.

(a) Use F2 and F3 buttons to navigate between different fields on the DOWNLOAD INFORMATION screen.

(b) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.

(c) Push the Enter button to add the selected alphanumeric digit to the Recorder Part Number or Recorder Serial Number text entry area.

(d) Push F4 button to select OK.

SUBTASK 31-31-00-700-025

(7) Push F3 to advance to the Reason For Download options.

SUBTASK 31-31-00-970-007

(8) Select the applicable Reason For Download option.

(a) Use the Up and Down arrow buttons to select the Reason For Download.

(b) Push the Enter button.

SUBTASK 31-31-00-700-026

(9) Push the F4 button to select START DOWNLOAD.

(a) Make sure that the DART screen shows the progress bar at the center of the screen.

NOTE: When download is complete, the file name displays at the top of the UPLOADED DATA screen and OK displays in the file name.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23 (Continued)

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-00-700-027

(1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

SUBTASK 31-31-00-840-020

(2) Disconnect the DART interface cable, COM-23713, from the SSFDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

SUBTASK 31-31-00-840-021

(3) Disconnect the DART interface cable, COM-23711, from the SSFDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-00-840-022

(4) Disconnect the DART interface cable, COM-23712, to the SSFDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-00-700-028

(5) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) An operational test of the flight data recorder system.

(2) A system test of the flight data recorder system.

TASK 31-31-00-710-801

2. Flight Data Recorder System - Operational Test

A. References

Reference	Title
31-31-11-000-802	Flight Data Recorder Removal (P/B 401)
31-31-11-400-802	Flight Data Recorder Installation (P/B 401)
31-31-22-000-801	Digital Flight Data Acquisition Unit (DFDAU) Removal (P/B 401)
31-31-22-400-801	Digital Flight Data Acquisition Unit (DFDAU) Installation (P/B 401)
31-31-22-400-802	Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface (P/B 201)
31-31-22-400-803	Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL) (P/B 201)
31-31-22-400-806	Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface (P/B 201)
31-31-22-400-809	Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface (P/B 201)
31-31-22-470-801	Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader (P/B 201)
31-31-22-470-808	Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL) (P/B 201)
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)
WDM 31-35-02	Wiring Diagram Manual
WDM 34-61-23	Wiring Diagram Manual

B. Location Zones

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

C. Prepare for the Test

SUBTASK 31-31-00-860-042

(1) Make sure that the engines are off.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Software Verification Test

SUBTASK 31-31-00-020-006

(1) Do these steps to do a software configuration check of the Flight Data Acquisition Unit (FDAU):

NOTE: Make sure that you know the correct software part number for the FDAU. For the FDAU to be an approved installation, the correct software part number must be installed.

(a) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

(b) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the applicable position.

a) Digital Flight Data Acquisition Unit (DFDAU) position for the FDAU mandatory software.

b) Airplane Condition And Monitoring System (ACMS) position for the FDAU non-mandatory software.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999; LOM 404 POST SB 737-23-1484; AIRPLANES WITH DFDAU TO MCDU WIRING

(c) Do these steps at the Control Display Unit (CDU):

NOTE: You cannot do the software configuration check on the CDU if the wiring between the CDU and the DFDAU is not installed. Refer to WDM 31-35-02 and WDM 34-61-23.

1) Select the MENU key on the CDU.

2) Select the Line Select Key (LSK) adjacent to the DFDAU or ACMS prompt on the CDU.

3) Select the LSK adjacent to the STATUS or REPROGRAMMING prompt on the CDU.

4) Select the LSK adjacent to the VERSIONS or INFORMATION prompt on the CDU.

NOTE: The Versions/Information Page will be displayed.

5) Make sure that the software part number information displayed on the CDU for the DFDAU Mandatory is correct.

6) Make sure that the software part number information displayed on the CDU for the DFDAU Non-Mandatory is correct.

7) If the part number information is not correct, install the correct software.

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a) Do this task: Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface, TASK 31-31-22-400-806 or Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface, TASK 31-31-22-400-809 or Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL), TASK 31-31-22-400-803 or Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader, TASK 31-31-22-470-801 or Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface, TASK 31-31-22-400-802 or Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL), TASK 31-31-22-470-808.

LOM 404, 420, 426; AIRPLANES WITH DFDAU TO CDU WIRING

(d) Do these steps at the CDU:

NOTE: The software configuration check on the CDU is not applicable if the wiring between the CDU and DFDAU is not installed. Refer to WDM 31-35-02 and WDM 34-61-23.

1) Select the INIT REF key from the CDU.

2) Select the LSK adjacent to the INDEX prompt from the CDU.

3) Select the LSK adjacent to the SEL CONFIG prompt from the CDU.

a) Make sure that the correct software part number shows on the CDU.

4) If the part number is not correct, then do one of these tasks:

a) Do this task: Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface, TASK 31-31-22-400-806 or Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL), TASK 31-31-22-400-803.

b) Or replace the FDAU:

<1> Digital Flight Data Acquisition Unit (DFDAU) Removal, TASK 31-31-22-000-801

<2> Digital Flight Data Acquisition Unit (DFDAU) Installation, TASK 31-31-22-400-801.

5) When the software configuration check is complete, select the MENU key on the CDU.

LOM ALL; AIRPLANES WITHOUT DFDAU TO MCDU/CDU WIRING

(e) Do the FDAU software configuration check at the FDAU.

NOTE: This step is applicable if the wiring between the DFDAU and CDU is not installed. Refer to WDM 31-35-02 and WDM 34-61-23.

1) Refer to the supplier data for instructions.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Flight Data Recorder (FDR) Maintenance Flag and Flight Data Acquisition Unit (FDAU) BITE Test

SUBTASK 31-31-00-710-027

(1) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

(b) Make sure that all of the fault lights, on the FDAU front panel, are off.

SUBTASK 31-31-00-710-028

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

SUBTASK 31-31-00-710-029

(3) Remove the Flight Data Recorder (FDR) (TASK 31-31-11-000-802).

SUBTASK 31-31-00-860-338

(4) Remove safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

(a) Make sure that the Digital Flight Data Recorder (DFDR) light on the FDAU front panel comes on.

SUBTASK 31-31-00-710-030

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

SUBTASK 31-31-00-860-339

(6) Install the FDR (TASK 31-31-11-400-802).

SUBTASK 31-31-00-860-340

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-00-710-031

(8) Remove the FDAU (TASK 31-31-22-000-801).

SUBTASK 31-31-00-710-032

(9) Remove safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

(a) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, is in the TEST position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

SUBTASK 31-31-00-860-341

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

SUBTASK 31-31-00-860-342

(11) Install the FDAU (TASK 31-31-22-400-801).

SUBTASK 31-31-00-860-343

(12) Remove safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR
C	9	C00109	FLIGHT RECORDER AC

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

SUBTASK 31-31-00-860-344

(13) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

F. Flight Data Recorder Activation by the FLIGHT RECORDER TEST Switch Test

SUBTASK 31-31-00-710-001

(1) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-00-710-002

(2) Push one of the MASTER CAUTION lights on the P7 glareshield panel.

(a) Make sure that the two MASTER CAUTION lights are off.

(b) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

SUBTASK 31-31-00-710-003

(3) Put the FLIGHT RECORDER TEST switch, on the P5 flight recorder panel, to the TEST position.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

SUBTASK 31-31-00-710-048

(4) Put the FLIGHT RECORDER TEST switch, on the P5 flight recorder panel, to the NORMAL position.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

(b) Make sure that the two MASTER CAUTION lights are on.

SUBTASK 31-31-00-860-432

(5) Push one of the MASTER CAUTION lights.

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G. Flight Data Recorder Activation by the Engine Running Relay (Oil Pressure Switch Test)

SUBTASK 31-31-00-860-741

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1
E	3	C01321	ENGINE FUEL ENGINE 2 HPSOV CONT
E	5	C01320	ENGINE FUEL ENGINE 1 HPSOV CONT

SUBTASK 31-31-00-710-034

(2) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, is set to the NORMAL position.

SUBTASK 31-31-00-710-004

(3) Put the engine 1 start lever to the IDLE position.

SUBTASK 31-31-00-710-005

(4) Wait for a minimum of 5 minutes.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

(b) Make sure that the two MASTER CAUTION lights are off.

SUBTASK 31-31-00-710-006

(5) Put the engine 1 start lever to the CUTOFF position.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

(b) Make sure that the two MASTER CAUTION lights come on.

SUBTASK 31-31-00-860-044

(6) Push one of the MASTER CAUTION lights.

SUBTASK 31-31-00-860-045

(7) Put the engine 2 start lever to the IDLE position.

SUBTASK 31-31-00-710-007

(8) Wait for a minimum of 5 minutes.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

(b) Make sure that the two MASTER CAUTION lights are off.

SUBTASK 31-31-00-710-008

(9) Put the engine 2 start lever to the CUTOFF position.

(a) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

(b) Make sure that the two MASTER CAUTION lights come on.

SUBTASK 31-31-00-860-046

(10) Push one of the MASTER CAUTION lights.

SUBTASK 31-31-00-860-742

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2

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(Continued)

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	4	C00359	FUEL SPAR VALVE ENG 1
E	3	C01321	ENGINE FUEL ENGINE 2 HPSOV CONT
E	5	C01320	ENGINE FUEL ENGINE 1 HPSOV CONT

H. Flight Data Recorder Activation by the AIR Switch Test

SUBTASK 31-31-00-860-743

(1) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 31-31-00-710-009

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.

(2) Push the ON/OFF key to turn on the Proximity Switch Electronic Unit (PSEU) in the forward electronics equipment bay.

SUBTASK 31-31-00-710-035

(3) Push the ARROW DOWN key until AIR/GND OVRD? shows on the PSEU display.

SUBTASK 31-31-00-710-036

(4) Push the YES key on the PSEU.

SUBTASK 31-31-00-710-037

(5) Push the ARROW DOWN key until SET SYS 2 IN AIR? shows on the PSEU display.

SUBTASK 31-31-00-710-038

(6) Push the YES key on the PSEU.

SUBTASK 31-31-00-710-039

(7) Push the YES key when the PSEU display shows ARE YOU SURE?.

(a) Make sure that the SYS #2 IN AIR? light on the PSEU comes on.

(b) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

SUBTASK 31-31-00-710-040

(8) Push the YES key when the PSEU display shows SET SYS 2 ON GND?.

SUBTASK 31-31-00-710-041

(9) Push the YES key when the PSEU display shows ARE YOU SURE?.

(a) Make sure that the SYS #2 IN AIR? light on the PSEU is off.

(b) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

SUBTASK 31-31-00-710-042

(10) Push the ON/OFF key to turn off the PSEU.

SUBTASK 31-31-00-710-043

(11) Push the YES key when the PSEU display shows TURN OFF DISPLAY?.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-744

(12) Do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, TASK 32-09-00-840-802.

——— END OF TASK ———

TASK 31-31-00-730-801

3. Flight Data Recorder System - System Test

A. General

(1) The system test has procedures to do a check of the inputs to the Flight Data Recorder System (FDRS). You can do the tests out of sequence and you can do each test independently.

(2) The tests in this procedure are written to the standard Boeing application software. If customized software is installed, part of the test may not look the same. Installation of the Boeing application software may be necessary.

B. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
27-51-00-860-803	Extend the Trailing Edge Flaps (P/B 201)
27-51-00-860-804	Retract the Trailing Edge Flaps (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
29-21-00-000-802	Standby Hydraulic System Power Removal (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (P/B 201)
31-31-81-000-801	Flight Data Recorder Accelerometer - Removal (P/B 401)
31-31-81-400-801	Flight Data Recorder Accelerometer - Installation (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
77-31-03-000-801-F00	Airborne Vibration Monitor (AVM) Signal Conditioner Removal (P/B 401)
77-31-03-400-801-F00	Airborne Vibration Monitor (AVM) Signal Conditioner 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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896

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(Continued)

Reference	Description
COM-920	Test Set - ATC (Modes A, C, & S)
	Part #: ARTS-7000 Supplier: 0RDZ5
	Part #: AVX-10K Supplier: 51190
	Part #: TR-210 Supplier: 92606
	Part #: TR-220 Supplier: 92606
	Opt Part #: ATC-601 Supplier: 51190
	Opt Part #: ATC-601-2 Supplier: 51190
	Opt Part #: IFR 6000 Supplier: 51190
	Opt Part #: T-48D Supplier: 92606
	Opt Part #: T-49C Supplier: 92606
	Opt Part #: TR-211 Supplier: 92606
COM-1562	Analyzer - Data Bus, ARINC 429
	Part #: 01-1001-05 Supplier: 0Z3C6
	Part #: 01-1001-12 Supplier: 0Z3C6
	Part #: 403557 Supplier: CG603
	Part #: 800-0630 Supplier: 1JSZ6
	Part #: DT400H-01 Supplier: 0Z3C6
	Part #: UA1410 Supplier: 0H231
	Opt Part #: 01-1001-10 Supplier: 0Z3C6
	Opt Part #: 01-1404-00 Supplier: 41364
	Opt Part #: 1116-4000-21 Supplier: A0197
	Opt Part #: 429EBP Supplier: 41364
	Opt Part #: 429EX Supplier: 41364
	Opt Part #: 702125-01 Supplier: CG603
	Opt Part #: DT400H Supplier: 0Z3C6
	Opt Part #: MODEL 429HBA Supplier: 5J927
	Opt Part #: TYPE 030/026 Supplier: $0494
COM-1807	Tester - DFDAU
	Part #: TS-UA1401-01 Supplier: 0H231
	Opt Part #: 2229738-7 Supplier: 98571
	Opt Part #: 2229738-8 Supplier: 98571
	Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI)
	Part #: 17TES0043 Supplier: 06141
	Part #: FDS40-0301 Supplier: Z7C70
	Opt Part #: 17TES0065 Supplier: 06141
	Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI)
	Part #: FDS40-0301 Supplier: Z7C70
	Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only)
	Part #: FDS40-0203 Supplier: Z7C70
	Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only)
	Part #: FDS40-0232 Supplier: Z7C70
	Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100)
	Part #: FDS40-0202 Supplier: Z7C70
	Opt Part #: FDS400-202 Supplier: Z7C70

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(Continued)

Reference	Description
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1680	Protractor Assembly - Control Column Part #: A27021-29 Supplier: 81205 Part #: G76002-42 Supplier: 81205 Opt Part #: 4MIT65B80307-1 Supplier: 81205 Opt Part #: F52485-500 Supplier: 81205 Opt Part #: G76002-19 Supplier: 81205 Opt Part #: G76002-37 Supplier: 81205
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205
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

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. Prepare for the System Test

SUBTASK 31-31-00-710-033

(1) Do this task: Flight Data Recorder System - Operational Test, TASK 31-31-00-710-801.

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SUBTASK 31-31-00-710-049

(2) Use one of the Portable Testers listed below to perform the test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, in the TEST position.

5) Select LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

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(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the Teledyne portable tester, COM-1807.

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

3) Use the portable tester adapter cable, SPL-1808, to connect the Teledyne portable tester, COM-1807, to the system test plug.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

5) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

6) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

7) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

8) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) Do the steps below to prepare the handheld download unit, COM-913, for the system test.

NOTE: These steps are only applicable to airplanes with a Honeywell SSFDR installed.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the power button on the handheld download unit, COM-913.

6) Set the DSDU switch.

NOTE: This is only for the HHDLU.

7) Set the BASE switch.

NOTE: This is only for the HHDLU.

8) Run the EHHDLU program.

NOTE: This is only for the EHHDLU.

9) Push the MONITOR button.

NOTE: This is only for the EHHDLU.

10) Set the recorder type.

NOTE: This is only for the EHHDLU.

11) Set the WORD and SUBFRAME as specified.

NOTE: For SUBFRAME 0, select ALL.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709:

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.

7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23 (Continued)

8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen as follows:
    a) For the applicable test, select Octal or Binary DATA FORMAT.
    b) Select the applicable DATA RATE.
    c) Select Normal DISPLAY MODE.
    d) Select the applicable SYNC TYPE.
    e) For the applicable test, select YES or NO for the SUPER FRAME.
12) Push F4 button to select NEXT.
13) On the Data Word Definition screen, set the WORD, SUBFRAME, and SUPER FRAME (if required) as specified.

    NOTE: For SUBFRAME 0, select ALL.
14) Push F4 button to START MONITORING.
15) If necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM 429-431, 437, 438, 443, 444, 461-464

G. Control Display Unit Verification Test

SUBTASK 31-31-00-730-085

(1) Push the MENU key on the two CDUs.
    (a) Make sure that the ACMS prompt is one of the menu selections on the CDU's MENU page.

SUBTASK 31-31-00-730-086

(2) Make a selection of ACMS on the left CDUs.
    (a) Make sure that the TEST APPLICATION shows on the left CDU.

SUBTASK 31-31-00-730-087

(3) Make a selection of ACMS on the right CDU.
    (a) Make sure that the TEST APPLICATION does not show on the right CDU.

SUBTASK 31-31-00-860-491

(4) Push the MENU key on the left CDU.

SUBTASK 31-31-00-860-492

(5) Make a selection of FMC on the left CDU.

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LOM 429-431, 437, 438, 443, 444, 461-464 (Continued)

SUBTASK 31-31-00-730-088

(6) Make a selection of ACMS on the right CDU.

(a) Make sure that the TEST APPLICATION shows on the right CDU.

SUBTASK 31-31-00-730-089

(7) Push the MENU key on the left CDU.

SUBTASK 31-31-00-730-090

(8) Make a selection of ACMS on the left CDU.

(a) Make sure that the TEST APPLICATION does not show on the left CDU.

SUBTASK 31-31-00-860-493

(9) Push the MENU key on the right CDU.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-425, 433, 434, 439-442, 453, 454; LOM 404 POST SB 737-23-1484

H. Control Display Unit (CDU) Verification Test

SUBTASK 31-31-00-865-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-425, 433, 434, 439-442, 453, 454			
A	7	C01238	FMCS MCDU 1
LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-425, 433, 434, 439-442, 453, 454; LOM 404 POST SB 737-23-1484			
C	8	C00544	FLIGHT RECORDER POSITION SENSOR
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	15	C01239	FMCS MCDU 2

SUBTASK 31-31-00-730-063

(2) Push the MENU key on the two CDU's.

(a) Make sure that the ACMS prompt is one of the menu selections on the two CDU's MENU page.

SUBTASK 31-31-00-730-064

(3) Make a selection of ACMS on the left CDU.

(a) Make sure that the ACMS MAIN MENU shows on the left CDU.

SUBTASK 31-31-00-730-065

(4) Make a selection of ACMS on the right CDU.

(a) Make sure that the ACMS MENU does not show on the right CDU.

SUBTASK 31-31-00-860-348

(5) Push the MENU key on the two CDU's.

SUBTASK 31-31-00-860-349

(6) Make a selection of FMC on the left CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-425, 433, 434, 439-442, 453, 454; LOM 404 POST SB 737-23-1484 (Continued)

SUBTASK 31-31-00-730-066

(7) Make a selection of ACMS on the right CDU.

(a) Make sure that the ACMS MAIN MENU shows on the right CDU.

SUBTASK 31-31-00-730-069

(8) Push the MENU key on the left CDU.

SUBTASK 31-31-00-730-067

(9) Make a selection of ACMS on the left CDU.

(a) Make sure that the ACMS MENU does not show on the left CDU.

SUBTASK 31-31-00-860-350

(10) Push the MENU key on the right CDU.

SUBTASK 31-31-00-860-633

(11) Push the FMC key on the right CDU.

LOM 402, 406, 407, 412, 415, 420, 422-425, 433, 434, 439-442, 445-447, 453-460

I. Printer Interface Test

SUBTASK 31-31-00-860-363

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	15	C01239	FMCS MCDU 2
D	16	C01262	FMCS CMPTR 2
E	5	C01216	PRINTER

(2) Select the MENU key from the left and the right CDUs.

SUBTASK 31-31-00-860-364

(3) Select the DFDAU or ACMS prompt from the left or the right CDU.

SUBTASK 31-31-00-860-472

(4) Select the SOFTWARE PART NUMBER prompt from the left or right CDU.

NOTE: If the SOFTWARE PART NUMBER prompt is not available, go to a screen that allows printing.

SUBTASK 31-31-00-860-365

(5) Select the PRINT prompt from the CDU.

(a) Make sure that the printer prints the “SOFTWARE PART NUMBER”.

1) If printing from a screen other than the SOFTWARE PART NUMBER screen, make sure that the printer prints information similar to that shown on the CDU.

NOTE: The content of the message is not important.

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LOM 427-432, 437, 438, 443, 444, 461-463, 466-999

J. Printer Interface Test

SUBTASK 31-31-00-860-473

(1) Select the MENU key from the left and the right CDUs.

SUBTASK 31-31-00-860-474

(2) Select the ACMS prompt from the left or the right CDU.

SUBTASK 31-31-00-860-475

(3) Select the DEVICE INTERFACE prompt from the CDU.

SUBTASK 31-31-00-860-476

(4) Select the PRINTER prompt from the CDU.

SUBTASK 31-31-00-860-477

(5) Select the PRINT prompt from the CDU.

(a) Make sure that the printer prints a message.

NOTE: The content of the message is not important.

LOM ALL

K. AIR/GROUND Logic Discrete Signal Test

SUBTASK 31-31-00-710-018

(1) Set the tester to subframe 0, word 7.

SUBTASK 31-31-00-730-002

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.

(2) Do these steps to do air mode simulation:

(a) Push the ON/OFF key on the PSEU.

(b) Select the following commands:

NOTE: Use the ARROW DOWN and ARROW UP keys to move up and the menu, then push the YES key to select the command.

1) AIR/GND OVRD?

2) SET SYS #2 IN AIR?

3) ARE YOU SURE?

(c) Make sure that the SYS #2 IN AIR light on the PSEU comes on.

(d) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-730-003

(3) Do these steps to return the airplane to the ground mode:

(a) Select the following commands:

NOTE: Use the ARROW DOWN and ARROW UP keys to move up and the menu, then push the YES key to select the command.

1) SET SYS #2 ON GROUND?

2) ARE YOU SURE?

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(b) Make sure that the SYS #2 IN AIR light on the PSEU goes out.

(c) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-730-004

(4) Set the tester to subframe 0, word 7.

SUBTASK 31-31-00-710-021

(5) Put a deactuator from the proximity sensor test set, SPL-1690, between the face and the steel target of the nose gear air/ground sensors, S1014 and S1015.

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-710-022

(6) Remove the deactuator.

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-710-044

(7) Set the tester to subframe 0, word 5.

SUBTASK 31-31-00-730-071

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.

(8) Do these steps to do air mode simulation:

(a) Push the ON/OFF key on the PSEU.

(b) Select the following commands:

NOTE: Use the ARROW DOWN and ARROW UP keys to move up and the menu, then push the YES key to select the command.

1) AIR/GND OVRD?

2) SET SYS #1 IN AIR?

3) ARE YOU SURE?

(c) Make sure that the SYS #1 IN AIR light on the PSEU comes on.

(d) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-730-072

(9) Do these steps to return the airplane to the ground mode:

(a) Select the following commands:

NOTE: Use the ARROW DOWN and ARROW UP keys to move up and the menu, then push the YES key to select the command.

1) SET SYS #1 ON GROUND?

2) ARE YOU SURE?

(b) Make sure that the SYS #1 IN AIR light on the PSEU goes out.

(c) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-730-005

(10) Set the tester to subframe 0, word 5.

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SUBTASK 31-31-00-710-023

(11) Put a deactuator from the proximity sensor test set, SPL-1690, between the face and the steel target of the main gear air/ground sensors, S1010 and S1011.

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-710-024

(12) Remove the deactuator.

(a) Make sure that bit 1 on the tester is a 1.

L. Autothrottle Digital Data Bus Signal Test

SUBTASK 31-31-00-860-592

(1) Do the following steps from the FMC CDU:

(a) Push the LSK next to FMC.

1) Make sure that the display shows the IDENT 1/2 PAGES.

(b) Push the LSK next to INDEX.

1) Make sure that the display shows the INIT/REF INDEX 1/1 PAGE.

(c) Push the LSK next to TAKEOFF.

1) Make sure that the display shows the TAKEOFF REF 1/2 PAGES.

(d) Push the NEXT PAGE page key.

(e) Enter into the scratchpad a forward slash symbol (/) and the outside air temperature (OAT).

NOTE: The total air temperature (TAT) value that is shown on the Primary Engine Display can be used as the OAT value.

(f) Push the LSK next to the OAT.

1) Make sure that the display shows the OAT value that was entered.

(g) Push the MENU key to return to the main menu.

SUBTASK 31-31-00-860-054

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(2) Set the tester to subframe 0, word 160.

LOM 427-434, 437-447, 450-999

(3) Set the tester to subframe 0, word 158.

LOM ALL

SUBTASK 31-31-00-860-055

(4) Put the A/T switch, on the P7 mode control panel, to the ARM position.

(a) Make sure that the A/T warning light, on the P1 panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) Make sure that the bit 4 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(c) Make sure that the bit 10 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-056

(5) Push the A/T disconnect switch on the thrust reverser lever.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the A/T warning light, P1, flashes.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) Make sure that the bit 4 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(c) Make sure that the bit 10 on the tester is a 0.

LOM ALL

M. Autothrottle Warning Discrete Signal Test

SUBTASK 31-31-00-860-593

(1) Do the following steps from the FMC CDU:

(a) Push the LSK next to FMC.

1) Make sure that the display shows the IDENT 1/2 PAGES.

(b) Push the LSK next to INDEX.

1) Make sure that the display shows the INIT/REF INDEX 1/1 PAGE.

(c) Push the LSK next to TAKEOFF.

1) Make sure that the display shows the TAKEOFF REF 1/2 PAGES.

(d) Push the NEXT PAGE page key.

(e) Enter into the scratchpad a forward slash symbol (/) and the outside air temperature (OAT).

NOTE: The total air temperature (TAT) value that is shown on the Primary Engine Display can be used as the OAT value.

(f) Push the LSK next to the OAT.

1) Make sure that the display shows the OAT value that was entered.

(g) Push the MENU key to return to the main menu.

SUBTASK 31-31-00-860-057

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(2) Set the tester to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(3) Set the tester to subframe 0, word 222.

LOM ALL

SUBTASK 31-31-00-860-058

(4) Put the A/T switch, on the P7 mode control panel, to the ARM position.

(a) Make sure that the A/T Warning light, on the P1 panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) Make sure that the bit 7 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(c) Make sure that the bit 10 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-059

(5) Push the A/T disconnect switch on the thrust reverser lever.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the A/T warning light, on the P1 panel, flashes.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) Make sure that the bit 7 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(c) Make sure that the bit 10 on the tester is a 0.

LOM ALL

N. Cabin Altitude > 10K ft Discrete Signal Test

SUBTASK 31-31-00-860-060

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 304.

LOM ALL

SUBTASK 31-31-00-710-025

(3) Remove connector, D776, from the cabin pressure switch (S128).

SUBTASK 31-31-00-730-006

(4) Apply a ground to pin A of D776 connector.

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-730-007

(5) Remove the ground from pin A of D776 connector.

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-420-008

(6) Install connector, D776, to the cabin pressure switch, S128.

O. Fire Warning Discrete Signal Test

SUBTASK 31-31-00-730-008

(1) Do these steps to do a check of the wheel well fire discrete:

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	22	C00407	FIRE PROTECTION DETECTION ENG 2
A	23	C00403	FIRE PROTECTION DETECTION APU
A	24	C00405	FIRE PROTECTION DETECTION ENG 1

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) Set the tester to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(c) Set the tester to subframe 0, word 222.

LOM ALL

(d) Put the fire test switch, on the P8 overheat/fire detection panel, to the OVHT/FIRE position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the wheel well light, on the P8 overheat/fire detection panel, is on.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 3 on the tester is a 1.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 5 on the tester is a 1.

LOM ALL

(e) Release the fire test switch.

1) Make sure that the wheel well light, on the P8 overheat/fire detection panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 3 on the tester is a 0.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 5 on the tester is a 0.

LOM ALL

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	19	C00388	FIRE PROTECTION DET OVHT WW WING BODY

(g) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	23	C00403	FIRE PROTECTION DETECTION APU

SUBTASK 31-31-00-860-061

(2) Do these steps to do a check of the APU fire discrete:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that the tester is set to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(b) Make sure that the tester is set to subframe 0, word 222.

LOM ALL

(c) Put the fire test switch, on the P8 overheat/fire detection panel, to the OVHT/FIRE position.

1) Make sure that the APU fire light, on the P8 overheat/fire detection panel, is on.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 4 on the tester is a 1.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 6 on the tester is a 1.

LOM ALL

(d) Release the fire test switch.

1) Make sure that the APU fire light, on the P8 overheat/fire detection panel, is off.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 4 on the tester is a 0.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 6 on the tester is a 0.

LOM ALL

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	23	C00403	FIRE PROTECTION DETECTION APU

(f) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	24	C00405	FIRE PROTECTION DETECTION ENG 1

SUBTASK 31-31-00-860-062

(3) Do these steps to do a check of the engine 1 fire discrete:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that the tester is set to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(b) Make sure that the tester is set to subframe 0, word 222.

LOM ALL

(c) Push the fire test switch, on the P8 overheat/fire detection panel, to the OVHT/FIRE position.

1) Make sure that the ENG 1 fire handle light, on the P8 overheat/fire detection panel, is on.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 9 on the tester is a 1.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 8 on the tester is a 1.

LOM ALL

(d) Release the fire test switch.

1) Make sure that the ENG 1 fire handle light, on the P8 overheat/fire detection panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 9 on the tester is a 0.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 8 on the tester is a 0.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	24	C00405	FIRE PROTECTION DETECTION ENG 1

(f) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	22	C00407	FIRE PROTECTION DETECTION ENG 2

SUBTASK 31-31-00-730-009

(4) Do these steps to do a check of the engine 2 fire discrete:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that the tester is set to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(b) Make sure that the tester is set to subframe 0, word 222.

LOM ALL

(c) Push the fire test switch, on the P8 overheat/fire detection panel, to the OVHT/FIRE position.

1) Make sure that the ENG 2 fire handle light, on the P8 overheat/fire detection panel, is on.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 8 on the tester is a 1.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 7 on the tester is a 1.

LOM ALL

(d) Release the fire test switch.

1) Make sure that the ENG 2 fire light, on the P8 overheat/fire detection panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 8 on the tester is a 0.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 7 on the tester is a 0.

LOM ALL

(e) Remove safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	19	C00388	FIRE PROTECTION DET OVHT WW WING BODY
A	23	C00403	FIRE PROTECTION DETECTION APU
A	24	C00405	FIRE PROTECTION DETECTION ENG 1

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P. Fuel Cutoff Discrete Signal Test

SUBTASK 31-31-00-860-063

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

SUBTASK 31-31-00-860-064

(2) Make sure that pneumatic pressure is off for both engines.

SUBTASK 31-31-00-860-065

(3) Make sure that the fire handles are in the NORMAL position.

SUBTASK 31-31-00-730-010

(4) Do these steps to do a check of the engine 1 fuel cutoff discrete:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Set the tester to subframe 0, word 107.

LOM 427-434, 437-447, 450-999

(b) Set the tester to subframe 0, word 301.

LOM ALL

(c) Put the engine 1 start lever to the IDLE position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

1) Make sure that bit 2 on the tester is a 0.

LOM 427-434, 437-447, 450-999

2) Make sure that the bit 1 on the tester is a 0.

LOM ALL

(d) Put the engine 1 start lever to the CUTOFF position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

1) Make sure that bit 2 on the tester is a 1.

LOM 427-434, 437-447, 450-999

2) Make sure that the bit 1 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-066

(5) Do these steps to do a check of the engine 2 fuel cutoff discrete:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Set the tester to subframe 0, word 107.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999

(b) Set the tester to subframe 0, word 301.

LOM ALL

(c) Put the engine 2 start lever to the IDLE position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

1) Make sure that bit 1 on the tester is a 0.

LOM 427-434, 437-447, 450-999

2) Make sure that the bit 2 on the tester is a 0.

LOM ALL

(d) Put the engine 2 start lever to the CUTOFF position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

1) Make sure that bit 1 on the tester is a 1.

LOM 427-434, 437-447, 450-999

2) Make sure that the bit 2 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-067

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

Q. Hydraulic System Low Pressure Discretes Signal Test

SUBTASK 31-31-00-860-068

(1) Make sure that the A and B hydraulic systems are not pressurized.

(a) To remove hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-31-00-860-069

(2) Make sure that the STBY hydraulic system is not pressurized.

(a) To remove hydraulic pressure, do this task: Standby Hydraulic System Power Removal, TASK 29-21-00-000-802.

SUBTASK 31-31-00-730-011

(3) Do these steps to do a check of the low hydraulic pressure discrete of system A engine 1:

LOM 402, 406, 407, 411

(a) Set the tester to subframe 0, word 170 (Dataframe 3, 3A or 3B).

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LOM 404, 412, 415, 416, 420, 422-426

(b) Set the tester to subframe 0, word 26 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

(c) Set the tester to subframe 0, word 190 (Dataframe 7).

LOM ALL

(d) Remove connector, D2684, from the system A engine 1 low pressure switch, S796.

1) Make sure that the ENG 1 LOW PRESSURE light of system A, on the P5 hydraulic pump panel, is off.

2) Make sure that bit 1 on the tester is a 1.

(e) Install connector, D2684, to the system A engine 1 low pressure switch, S796.

1) Make sure that the ENG 1 LOW PRESSURE light of system A, on the P5 hydraulic pump panel, is on.

2) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-070

(4) Do these steps to do a check of the low hydraulic pressure discrete for system B engine 2:

LOM 402, 406, 407, 411

(a) Set the tester to subframe 0, word 170 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(b) Set the tester to subframe 0, word 26 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

(c) Set the tester to subframe 0, word 191 (Dataframe 7).

LOM ALL

(d) Remove connector, D2686, from the system B engine 2 low pressure switch, S797.

1) Make sure that the ENG 2 LOW PRESSURE light of system B, on the P5 hydraulic pump panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 2 on the tester is a 1.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 1 on the tester is a 1.

LOM ALL

(e) Install connector, D2686, to the system B engine 2 low pressure switch, S797.

1) Make sure that the ENG 2 LOW PRESSURE light of system B, on the P5 hydraulic pump panel, is on.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that bit 2 on the tester is a 0.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 1 on the tester is a 0.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-071

(5) Do these steps to do a check of the low hydraulic pressure discrete signal of system B electric 1:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Set the tester to subframe 0, word 173 (Dataframe 3, 3A, 3B or 3C).

LOM 427-434, 437-447, 450-999

(b) Set the tester to subframe 0, word 191 (Dataframe 7).

LOM ALL

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(c) Put the system B ELEC 1 switch, on the P5 hydraulic pump panel, to the ON position.

1) Make sure that the ELEC 1 LOW PRESSURE light of system B, on the P5 hydraulic pump panel, is off.

2) Make sure that the bit 2 on the tester is a 1.

(d) Put the system B ELEC 1 switch, on the P5 hydraulic pump panel, to the OFF position.

1) Make sure that the ELEC 1 LOW PRESSURE light of system B, on the P5 hydraulic pump panel, is on.

2) Make sure that the bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-073

(6) Do these steps to do a check of the low hydraulic pressure discrete signal of the system A electric 2:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Set the tester to subframe 0, word 173 (Dataframe 3, 3A, 3B or 3C).

LOM 427-434, 437-447, 450-999

(b) Set the tester to subframe 0, word 190 (Dataframe 7).

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(c) Put the system A ELEC 2 switch on the hydraulic pump panel, P5, to the ON position.

1) Make sure that the ELEC 2 LOW PRESSURE light of system A, on the P5 hydraulic pump panel, is off.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that the bit 1 on the tester is a 1.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 2 on the tester is a 1.

LOM ALL

(d) Put the system A ELEC 2 switch, on the P5 hydraulic pump panel, to the OFF position.

1) Make sure that the ELEC 2 LOW PRESSURE light of system A, on the P5 hydraulic pump panel, is on.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

2) Make sure that the bit 1 on the tester is a 0.

LOM 427-434, 437-447, 450-999

3) Make sure that the bit 2 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-730-012

(7) Do these steps to do a check of the low hydraulic pressure discrete signal of the Standby Hydraulic System:

LOM 402, 406, 407, 411

(a) Set the tester to subframe 0, word 171 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(b) Set the tester to subframe 0, word 214 (Dataframe 3C).

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LOM 427-434, 437-447, 450-999

(c) Set the tester to subframe 0, word 192 (Dataframe 7).

LOM ALL

(d) To get access to P92 panel, open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

WARNING WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

(e) Make sure that this circuit breaker is closed:

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

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.

CAUTION MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(f) Put the system A FLT CONTROL switch, on the P5 flight control panel, to the STBY RUD position.

1) Make sure that the LOW PRESSURE light of the standby hydraulic system, on the P5 flight control panel, is off.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Make sure that the bit 1 on the tester is a 1.

WARNING	WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING	DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

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

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

1) Make sure that the LOW PRESSURE light of the standby hydraulic system, on the P5 flight control panel, is on.

2) Make sure that the bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-519

(8) Put the system A FLT CONTROL switch, on the P5 flight control panel, to the ON position.

SUBTASK 31-31-00-860-317

WARNING	WHEN YOU OPEN THE P91 AND P92 PANELS, MAKE SURE THAT THE OUTER DOOR STAYS AS OPEN AS POSSIBLE. IF THE OUTER DOOR TURNS IN, THE ATTACHED DOOR COMPONENTS COULD TOUCH THE INNER DOOR COMPONENTS. THIS CAN CAUSE AN ARC CONDITION WHEN YOU SUPPLY POWER. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT AND INJURY TO PERSONNEL CAN OCCUR.

WARNING	DO NOT TOUCH THE CONDUCTORS IN THE P91 AND P92 PANELS. BE CAREFUL WHEN YOU GET ACCESS TO THE CIRCUIT BREAKERS ON THE INNER SIDE OF THE P91 AND P92 PANELS (ROW F). IF IT IS POSSIBLE, REMOVE AIRPLANE ELECTRICAL POWER FIRST. THE P91 AND P92 PANELS HAVE HIGH VOLTAGES AND CURRENTS. ELECTRICAL VOLTAGE AND CURRENT CAN KILL YOU OR CAUSE INJURIES.

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

Power Distribution Panel Number 2, P92

Row	Col	Number	Name
F	2	C01449	STANDBY HYDRAULIC PUMP

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-410-011

(10) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

LOM 412, 415, 423, 424, 439, 441, 465-999

R. Event Switch Discrete Signal Test

SUBTASK 31-31-00-730-075

LOM 412, 415, 423, 424

(1) Set the tester to subframe 0, word 144.

LOM 439, 441, 465-999

(2) Set the tester to subframe 0, word 368.

LOM 412, 415, 423, 424, 439, 441, 465-999

SUBTASK 31-31-00-860-414

(3) Push the event switch.

(a) Make sure that BIT 1 on the tester is a 0.

SUBTASK 31-31-00-860-415

(4) Release the event switch.

(a) Make sure that BIT 1 on the tester is a 1.

LOM 427, 428

S. Lavatory Smoke Detector Discrete Signal Test

SUBTASK 31-31-00-860-478

(1) Set the tester to subframe 0, word 222.

SUBTASK 31-31-00-860-479

(2) Push and hold the smoke detector self test button.

NOTE: The self button is located on each individual smoke detectors when there is no forward lavatory smoke detector control panel. When there is a forward lavatory smoke detector control panel, then the self button is located there.

(a) Make sure that the bit 12 on the tester is a 0.

SUBTASK 31-31-00-860-480

(3) Release the self test button.

(a) Make sure that the bit 12 on the tester is a 1.

LOM ALL

T. IRS Switch Discrete Signal Test

SUBTASK 31-31-00-730-013

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 2, word 181.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 178.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-074

(3) Put the IRS switch, on the P5 instrument switching panel, to the Both-On-R position.

(a) Make sure that BIT 2 on the tester is a 1.

SUBTASK 31-31-00-860-075

(4) Put the IRS switch, on the P5 instrument switching panel, to the NORMAL position.

(a) Make sure that BIT 2 on the tester is a 0.

U. Landing Gear Position Discrete Signal Test

SUBTASK 31-31-00-860-076

(1) Make sure that the airplane is in the ground mode.

SUBTASK 31-31-00-860-077

(2) Make sure that the three landing gears are down and locked.

SUBTASK 31-31-00-480-006

WARNING	MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) If the downlock pins are not installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

SUBTASK 31-31-00-730-014

(4) Make sure that all the green landing gear lights, on the P2 center main panel, are on.

SUBTASK 31-31-00-730-073

(5) Make sure that all the red landing gear lights, on the P2 center main panel, are off.

SUBTASK 31-31-00-860-080

(6) Set the tester to subframe 0, word 77.

(a) Make sure that the RH green light is on.

(b) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-433

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(7) Set the tester to subframe 0, word 78.

(a) Make sure that the RH red light is off.

(b) Make sure that bit 5 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(8) Set the tester to subframe 0, word 222.

(a) Make sure that the RH red light is off.

(b) Make sure that bit 3 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-434

(9) Put deactuators from proximity sensor test set, SPL-1690, between the face of the lock sensor and its steel target for the No. 1 and No. 2 right gear sensors, S73 and S301.

(a) Make sure that the green light of the right landing gear is off.

(b) Make sure that the red light of the right landing gear is on.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-081

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(10) Set the tester to subframe 0, word 78.

(a) Make sure that the red light of the right landing gear is on.

(b) Make sure that the bit 5 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(11) Set the tester to subframe 0, word 222.

(a) Make sure that the red light of the right landing gear is on.

(b) Make sure that the bit 3 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-435

(12) Set the tester to subframe 0, word 77.

(a) Make sure that the green light of the right landing gear is off.

(b) Make sure that the bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-436

(13) Remove the deactuators.

SUBTASK 31-31-00-860-082

(14) Set the tester to subframe 0, word 77.

(a) Make sure that the green light of the left landing gear is on.

(b) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-437

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(15) Set the tester to subframe 0, word 78.

(a) Make sure that the red light of the left landing gear is off.

(b) Make sure that bit 10 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(16) Set the tester to subframe 0, word 222.

(a) Make sure that the red light of the left landing gear is off.

(b) Make sure that bit 4 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-438

(17) Put deactuators from proximity sensor test set, SPL-1690, between the face of the lock sensor and its steel target for the No. 1 and No. 2 left gear sensors, S71 and S302.

(a) Make sure that the green light of the left landing gear is off.

(b) Make sure that the red light of the left landing gear is on.

SUBTASK 31-31-00-860-084

(18) Set the tester to subframe 0, word 77.

(a) Make sure that the bit 2 on the tester is a 1.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-085

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(19) Set the tester to subframe 0, word 78.

(a) Make sure that the bit 10 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(20) Set the tester to subframe 0, word 222.

(a) Make sure that the bit 4 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-087

(21) Remove the deactuators.

SUBTASK 31-31-00-860-088

(22) Set the tester to subframe 0, word 76.

(a) Make sure that the green light of the nose landing gear is on.

(b) Make sure that the bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-439

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(23) Set the tester to subframe 0, word 78.

(a) Make sure that the red light of the nose landing gear is off.

(b) Make sure that the bit 6 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(24) Set the tester to subframe 0, word 222.

(a) Make sure that the red light of the nose landing gear is off.

(b) Make sure that the bit 2 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-089

(25) Put deactuators from proximity sensor test set, SPL-1690, between the face of the lock sensor and the steel targets for the No. 1 and No. 2 nose gear sensors, S846 and S854.

(a) Make sure that the green light of the nose landing gear is off.

(b) Make sure that the red light of the nose landing gear is on.

SUBTASK 31-31-00-860-090

(26) Set the tester to subframe 0, word 76.

(a) Make sure that the bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-091

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(27) Set the tester to subframe 0, word 78.

(a) Make sure that the bit 6 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(28) Set the tester to subframe 0, word 222.

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LOM 427-434, 437-447, 450-999 (Continued)

(a) Make sure that the bit 2 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-588

(29) Remove the deactuators.

V. FSEU Digital Bus Test

SUBTASK 31-31-00-730-015

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 33.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 444.

LOM ALL

SUBTASK 31-31-00-730-016

(3) Put the ALTERNATE FLAP master arming switch on the flight control panel, P5, to the ARM position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 4 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(b) Make sure that the bit 1 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-730-017

(4) Put the ALTERNATE FLAP master arming switch on the flight control panel, P5, to the OFF position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 4 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(b) Make sure that the bit 1 on the tester is a 0.

LOM ALL

W. Main/Alt Brake Select Discrete Signal Test

SUBTASK 31-31-00-730-074

(1) Make sure that the parking brakes are not set.

SUBTASK 31-31-00-730-018

LOM 402, 406, 407, 411

(2) Set the tester to subframe 0, word 169 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 0, word 214 (Dataframe 3C).

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LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 0, word 122 (Dataframe 7).

LOM ALL

SUBTASK 31-31-00-730-019

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(5) Put the ELEC 1 system B switch on the hydraulic pump panel, P5, to the ON position.

(a) Make sure that hydraulic systems A and Standby are off.

(b) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-730-020

(6) Put the ELEC 1 system B switch, on the P5 hydraulic pump panel, to the OFF position.

SUBTASK 31-31-00-730-021

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(7) Put the ELEC 2 system A switch, on the P5 hydraulic pump panel, to the ON position.

(a) Make sure that hydraulic systems B and Standby are off.

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(b) Push the captain's brake pedals to remove pressure from the main brake lines.

(c) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-730-022

(8) Put the system A ELEC 2 switch, on the P5 hydraulic pump panel, to the OFF position.

X. AC and DC Bus Indication Discrete Signal Test

SUBTASK 31-31-00-730-023

LOM 402, 406, 407, 411

(1) Set the tester to subframe 0, word 86 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 108 (Dataframe 3C or 7).

LOM ALL

SUBTASK 31-31-00-730-024

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	13	C01467	AC BUS XFR BUS 2 115V AC IND

LOM 402, 406, 407, 411

(a) Make sure that bit 2 on the tester is a 0.

LOM 404, 412, 415, 416, 420, 422-434, 437-447, 450-999

(b) Make sure that bit 1 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-730-025

(4) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	13	C01467	AC BUS XFR BUS 2 115V AC IND

LOM 402, 406, 407, 411

(a) Make sure that bit 2 on the tester is a 1.

LOM 404, 412, 415, 416, 420, 422-434, 437-447, 450-999

(b) Make sure that bit 1 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-730-157

LOM 402, 406, 407, 411

(5) Ensure the tester is set to subframe 0, word 86 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-434, 437-447, 450-999

(6) Set the tester to subframe 0, word 236 (Dataframe 3C or 7).

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-730-026

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	16	C00072	AC BUS STBY BUS 115V AC IND

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-730-027

(8) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
D	16	C00072	AC BUS STBY BUS 115V AC IND

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-730-028

(9) Set the tester to subframe 0, word 89.

SUBTASK 31-31-00-730-029

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
F	16	C00023	DC BUS INDICATION BUS 1

(a) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-730-030

(11) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
F	16	C00023	DC BUS INDICATION BUS 1

(a) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-730-031

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(12) Set the tester to subframe 0, word 88.

LOM 427-434, 437-447, 450-999

(13) Set the tester to subframe 0, word 406.

LOM ALL

SUBTASK 31-31-00-730-032

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
F	14	C00026	DC BUS INDICATION BAT

(a) Make sure that bit 2 on the tester is a 0.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-730-033

(15) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
F	14	C00026	DC BUS INDICATION BAT

(a) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-730-034

(16) Set the tester to subframe 0, word 90.

SUBTASK 31-31-00-730-035

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
E	15	C00134	DC BUS INDICATION HOT BAT

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-730-036

(18) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
E	15	C00134	DC BUS INDICATION HOT BAT

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-730-037

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
E	16	C01466	DC BUS INDICATION SW HOT BAT

(a) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-730-038

(20) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
E	16	C01466	DC BUS INDICATION SW HOT BAT

(a) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-730-039

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(21) Set the tester to subframe 0, word 88.

LOM 427-434, 437-447, 450-999

(22) Set the tester to subframe 0, word 406.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-730-040

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
E	18	C00136	DC BUS INDICATION STBY

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-730-041

(24) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
E	18	C00136	DC BUS INDICATION STBY

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-730-042

(25) Set the tester to subframe 0, word 89.

SUBTASK 31-31-00-730-043

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

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
F	18	C01338	DC BUS INDICATION BUS 2

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-730-044

(27) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-4

Row	Col	Number	Name
F	18	C01338	DC BUS INDICATION BUS 2

(a) Make sure that bit 1 on the tester is a 1.

Y. Master Caution Annunciation Discrete Signal Test

SUBTASK 31-31-00-730-045

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 78.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 231.

LOM ALL

SUBTASK 31-31-00-730-100

(3) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4

SUBTASK 31-31-00-730-101

(4) Make sure that the IRS SW is in the NORMAL position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-730-046

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
E	7	C01007	ADIRU LEFT AC

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 2 on the tester is a 0.

NOTE: There may be a 2 to 10 second delay before bit 2 changes to a 0.

LOM 427-434, 437-447, 450-999

(b) Make sure that the bit 1 on the tester is a 0.

NOTE: There may be a 2 to 10 second delay before bit 1 changes to a 0.

LOM ALL

SUBTASK 31-31-00-730-047

(6) Remove safety tag and close this circuit breaker:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
E	7	C01007	ADIRU LEFT AC

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 2 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(b) Make sure that bit 1 on the tester is a 1.

LOM ALL

Z. A/P Warning and Stabilizer Trim Discrete Signal Test

SUBTASK 31-31-00-730-050

(1) Push the INT/REF prompt on the CDU keyboard.

SUBTASK 31-31-00-730-068

(2) Push the capt autopilot warn light on the instrument panel.

(a) Make sure that the captain's and F/O warn lights on the instrument panels, P1 and P3, are off.

SUBTASK 31-31-00-730-051

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 0, word 78.

(a) Make sure that bit 11 on the tester is 1.

LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 0, word 222.

(a) Make sure that bit 11 and 12 on the tester are 1.

LOM ALL

SUBTASK 31-31-00-730-052

(5) Make these selections from the CDU display:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) INDEX

(b) MAINT

(c) DFCS

(d) Make sure that the captain's and F/O warn lights, on the P1 and P3 instrument panels, are on.

SUBTASK 31-31-00-730-055

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(6) Set the tester to subframe 0, word 78.

(a) Make sure that bit 11 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(7) Set the tester to subframe 0, word 222.

(a) Make sure that bit 11 and 12 on the tester are 0.

LOM ALL

SUBTASK 31-31-00-730-056

(8) Make these selections from the CDU display:

(a) EXTENDED MAINTENANCE

(b) RIGGING

(c) STABILIZER

(d) CONTINUE.

SUBTASK 31-31-00-730-057

(9) Select NO to the message 'Do you want to check the nose up/nose down limit switch again'.

SUBTASK 31-31-00-730-058

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(10) Set the tester to subframe 0, word 139.

LOM 427-434, 437-447, 450-999

(11) Set the tester to subframe 0, word 39.

LOM ALL

SUBTASK 31-31-00-730-059

(12) Select Test 54.01 from the CDU display.

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-730-060

(13) Select line-select-key next to the continue prompt for test 54.02.

(a) Make sure that bit 1 on the tester is a 1.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

SUBTASK 31-31-00-730-061

(14) Select Test 54.03 from the CDU display.

(a) Make sure that bit 2 on the tester is a 0.

(15) Select line-select-key next to the CONTINUE prompt on test 54.04.

(a) Make sure that bit 2 on the tester is a 1.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(16) Select line-select-key next to the CONTINUE prompt on test 54.05.
  (a) Make sure that bit 2 on the tester is a 0.

LOM 427-434, 437-447, 450-999

SUBTASK 31-31-00-730-062

(17) Set the tester to subframe 0, word 167.
(18) Select Test 54.03 from the CDU display.
  (a) Make sure that bit 1 on the tester is a 0.
(19) Select line-select-key next to the CONTINUE prompt on test 54.04.
  (a) Make sure that bit 1 on the tester is a 1.
(20) Select line-select-key next to the CONTINUE prompt on test 54.05.
  (a) Make sure that bit 1 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-092

(21) Make these selections from the CDU display:
  (a) PREV MENU from the END OF STAB RIG screen.
  (b) CONTINUE from the RIGGING INDEX screen.
  (c) EXIT from the TEST COMPLETE screen.
  (d) EXIT after you comply with the instructions on the END OF DFCS BITE screen.

AA. Manual Stab Trim Switch Discrete Signal Test

SUBTASK 31-31-00-860-093

(1) Set the tester to subframe 0, word 137.

SUBTASK 31-31-00-860-094

(2) Push and hold the trim switch on the control wheel to the TRIM NOSE UP position.
  (a) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-860-095

(3) Release the trim switch.
  (a) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-096

(4) Push and hold the trim switch on the control wheel to the TRIM NOSE DOWN position.
  (a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-097

(5) Release the trim switch.
  (a) Make sure that bit 1 on the tester is a 0.

AB. Aileron Trim Command Discrete Signal Test

SUBTASK 31-31-00-860-098

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 18.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 22.

LOM ALL

SUBTASK 31-31-00-860-099

(3) Push and hold the aileron trim control switches on the Aileron and Rudder Trim Module, P8, to the RIGHT WING DOWN position.

(a) Make sure that bit 1 on the tester is 1.

(b) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-100

(4) Release the aileron trim control switches.

(a) Make sure that bit 1 and 2 on the tester is a 0.

SUBTASK 31-31-00-860-583

(5) Push and hold the aileron trim control switches, on the P8 aileron and rudder trim module, to the LEFT WING DOWN position.

(a) Make sure that bit 1 on the tester is a 0.

(b) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-860-584

(6) Release the aileron trim control switches.

(a) Make sure that bit 1 and 2 on the tester is a 0.

AC. Autobrake Application Discrete Signal Test

SUBTASK 31-31-00-860-103

WARNING	MAKE SURE THAT YOU INSTALL CHOCKS AT THE WHEELS. THE BRAKES WILL RELEASE WHEN YOU PUT THE AIRPLANE IN AIR MODE. THIS CAN CAUSE THE AIRPLANE TO MOVE SUDDENLY. IF YOU DO NOT INSTALL THE CHOCKS, INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Install chocks at the wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

(2) Make sure that parking brakes are released.

SUBTASK 31-31-00-860-104

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(CAUTION PRECEDES)

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(3) Put the system B ELEC 1 hydraulic pump switch, on the P5 hydraulic pump panel, to the ON position.

SUBTASK 31-31-00-860-105

(4) Put the rotary switch on the ANTISKID/AUTOBRAKE CONTROL module, M162, in the electronic equipment rack, E1, to the A/B position.

SUBTASK 31-31-00-860-106

(5) Put the autobrake selector switch, on the P2 center main panel, to the 1 position.

SUBTASK 31-31-00-860-107

LOM 402, 406, 407, 411

(6) Set the tester to subframe 0, word 169 (Dataframe 3, 3A or 3B).

(a) Make sure that bit 1 on the tester is a 0.

LOM 404, 412, 415, 416, 420, 422-426

(7) Set the tester to subframe 0, word 86 (Dataframe 3C).

(a) Make sure that bit 1 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(8) Set the tester to subframe 0, word 214 (Dataframe 7).

(a) Make sure that the bit 1 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-109

(9) Push and hold the ENABLE/VERIFY switch on the Antiskid/Autobrake Control Unit (AACU).

(10) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

(11) Release the ENABLE/VERIFY switch and the VERIFY switch at the same time.

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-111

(12) Put the rotary switch on the antiskid/autobrake control module, M162, to the NORM position.

SUBTASK 31-31-00-860-112

(13) Push and release the RESET button on the antiskid/autobrake control module, M162.

(a) Make sure that the front panel of the antiskid/autobrake control module, M162, shows MEM CLR.

AD. VHF Radio Keying Discrete Signal Test

SUBTASK 31-31-00-860-113

(1) Do these steps to check VHF-1 signal:

(a) Set the VHF-1 transceiver, on the P8 radio control panel, to an authorized test frequency.

(b) Set the tester to subframe 0, word 210.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Push the captain's PTT button.

1) Make sure that bit 1 on the tester is a 0.

(d) Release the captain's PTT button.

1) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-114

(2) Do these steps to check VHF-2 signal:

(a) Set the VHF-2 transceiver, on the P8 radio control panel, to an authorized frequency.

(b) Set the tester to subframe 0, word 210.

(c) Push the captain's PTT button.

1) Make sure that bit 2 on the tester is a 0.

(d) Release the captain's PTT button.

1) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-860-351

(3) Do these steps to check VHF-3 signal (if installed):

(a) Set the VHF-3 transceiver, on the P8 radio control panel, to an authorized test frequency.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) Set the tester to subframe 0, word 208.

LOM 427-434, 437-447, 450-999

(c) Set the tester to subframe 0, word 272.

LOM ALL

(d) Push the captain's PTT button.

1) Make sure that bit 1 on the tester is a 0.

(e) Release the captain's PTT button.

1) Make sure that bit 1 on the tester is a 1.

AE. HF Radio Keying Discrete Signal Test

SUBTASK 31-31-00-860-370

(1) Do these steps to do a check of the HF-1 signal (if installed):

(a) Set the HF-1 transceiver, on the P8 radio control panel, to an authorized test frequency.

(b) Set the tester to subframe 0, word 211.

(c) Push the captain's PTT button.

1) Make sure that bit 1 on the tester is a 0.

(d) Release the captain's PTT button.

1) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-371

(2) Do these steps to do a check of the HF-2 signal (if installed):

(a) Set the HF-2 transceiver, on the P8 radio control panel, to an authorized test frequency.

(b) Set the tester to subframe 0, word 211.

(c) Push the captain's PTT button.

1) Make sure that bit 2 on the tester is a 0.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Release the captain's PTT button.

1) Make sure that bit 2 on the tester is a 1.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999

AF. Flight Management Computer (FMC) Switch Position Discrete Signal Test

SUBTASK 31-31-00-860-115

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 2, word 181.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 178.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999

SUBTASK 31-31-00-860-514

(3) Set the captain's FMC select switch to the BOTH-ON-R position.

(a) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-634

(4) Set the captain's FMC select switch to the BOTH-ON-L position.

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-736

(5) Set the captain's FMC select switch to the NORMAL position.

LOM ALL

AG. Speedbrake Commands Discrete Signal Test

SUBTASK 31-31-00-860-119

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Supply hydraulic pressure for system A and B (TASK 29-11-00-860-801).

SUBTASK 31-31-00-860-575

(2) Make sure that the FCCs are serviceable.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-576

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1
D	2	C01045	AFCS SYS A FCC DC
D	3	C01048	AFCS SYS A ENGAGE INTLK

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	3	C01046	AFCS SYS B FCC DC
B	4	C00716	AFCS SYS B ENGAGE INTLK
B	9	C00440	FLIGHT CONTROL AUTO SPEED BRAKE

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	4	C01662	SPOILER PCU SOV SYS A
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

SUBTASK 31-31-00-860-577

(5) Make sure that the ADL selector switch is set in the NORM position.

SUBTASK 31-31-00-860-745

(6) Put the speedbrake handle to the UP/ARM position.

SUBTASK 31-31-00-860-578

(7) Push the throttle levers forward until a horn sounds.

SUBTASK 31-31-00-860-579

(8) Pull the throttle levers back to the idle position.

SUBTASK 31-31-00-860-120

(9) Put the speedbrake handle to the DOWN position.

SUBTASK 31-31-00-860-121

(10) Set the tester to subframe 0, word 205.

(a) Make sure that bit 2 on the tester is a 1.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-318

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(11) Set the tester to subframe 0, word 92.

(a) Make sure that bit 1 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(12) Set the tester to subframe 0, word 281.

(a) Make sure that bit 1 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-319

(13) Put the speedbrake handle to the ARMED position.

SUBTASK 31-31-00-860-320

(14) Set the tester to subframe 0, word 205.

(a) Make sure that bit 2 on the tester is a 0.

NOTE: If you do not get the correct result, cycle one of the thrust lever from idle to full position then to idle again to allow the system to reset and arm.

SUBTASK 31-31-00-860-440

(15) Do these steps to do air mode simulation:

(a) Push the ON/OFF key on the PSEU.

(b) Select the following commands:

NOTE: Push the ARROW DOWN key until the appropriate command shows on the PSEU display, then push the YES key to select the command.

1) AIR/GND OVRD?

2) SET SYS #2 IN AIR?

3) ARE YOU SURE?

SUBTASK 31-31-00-860-580

(16) Make sure that the SYS #2 IN AIR light on the PSEU is on.

SUBTASK 31-31-00-860-441

(17) Make sure that the bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-442

WARNING

MAKE SURE THAT THE PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU RETURN THE AIRPLANE FROM THE AIR TO THE GROUND MODE. THE SPEEDBRAKES WILL AUTOMATICALLY DEPLOY WHEN THE AIRPLANE RETURNS FROM AIR TO THE GROUND MODE. IF YOU DO NOT OBEY INSTRUCTIONS, INJURY TO PERSONNEL AND DAMAGE TO EQUIPMENT CAN OCCUR.

(18) Do these steps to return the airplane to the ground mode:

(a) Push the ON/OFF key on the PSEU.

(b) Select the following commands:

NOTE: Push the ARROW DOWN key until the appropriate command shows on the PSEU display, then push the YES key to select the command.

1) AIR/GND OVRD?

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) SET SYS #2 ON GROUND?

3) ARE YOU SURE?

SUBTASK 31-31-00-860-581

(19) Make sure that the SYS #2 IN AIR light on the PSEU is off.

SUBTASK 31-31-00-860-443

(20) Make sure that the bit 1 on the tester is a 1 momentarily, then change to a 0.

SUBTASK 31-31-00-860-325

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(21) Set the tester to subframe 0, word 92.

(a) Make sure that bit 1 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(22) Set the tester to subframe 0, word 281.

(a) Make sure that bit 1 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-327

(23) Set the speedbrake lever to the DOWN position.

SUBTASK 31-31-00-860-582

(24) Set the tester to subframe 0, word 204.

(a) Make sure that the speedbrake Do Not Arm light is off.

(b) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-328

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

CAPT Electrical System Panel, P18-1

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

SUBTASK 31-31-00-860-329

(26) Set the speedbrake lever to the ARMED position.

(a) Make sure that the Do Not Arm light comes on after approximately 10 seconds.

(b) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-330

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

CAPT Electrical System Panel, P18-1

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

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	4	C01662	SPOILER PCU SOV SYS A
A	5	C01663	SPOILER PCU SOV SYS B

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL

SUBTASK 31-31-00-860-331

(29) Remove hydraulic pressure from system A and B (TASK 29-11-00-860-805).

AH. Aileron Position Analog Signal Test

SUBTASK 31-31-00-860-122

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS AND THE THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 31-31-00-860-123

(2) Set the tester to subframe 0, word 17.

SUBTASK 31-31-00-860-124

(3) Put the captain's control wheel in the center position.

(a) Make sure that the tester display shows octal value of 7741 to 0037.

SUBTASK 31-31-00-860-125

(4) Rotate the captain's control wheel fully to the left position.

(a) Make sure that the tester shows 7172 to 7314.

SUBTASK 31-31-00-860-126

(5) Rotate the captain's control wheel fully to the right position.

(a) Make sure that the tester shows 0466 to 0610.

SUBTASK 31-31-00-860-127

(6) Set the tester to subframe 0, word 23.

SUBTASK 31-31-00-860-128

(7) Put the captain's control wheel in the center position.

(a) Make sure that the tester shows 7741 to 0037.

SUBTASK 31-31-00-860-129

(8) Rotate the captain's control wheel fully to the left position.

(a) Make sure that the tester shows 7167 to 7311.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-130

(9) Rotate the captain's control wheel fully to the right position.

(a) Make sure that the tester shows 0463 to 0605.

SUBTASK 31-31-00-860-360

(10) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

AI. Brake Pressure Analog Signal Test

SUBTASK 31-31-00-860-131

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Supply hydraulic pressure for system B. (TASK 29-11-00-860-801).

(a) Make sure that system A does not have hydraulic pressure.

1) If system A has hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(b) Make sure that the standby hydraulic system does not have hydraulic pressure.

1) If the standby hydraulic system has pressure, do this task: Standby Hydraulic System Power Removal, TASK 29-21-00-000-802.

(c) Make sure that the parking brakes are not set.

SUBTASK 31-31-00-860-132

(2) Push and hold the captain's left brake pedal fully against the stop.

SUBTASK 31-31-00-860-133

LOM 402, 406, 407, 411

(3) Set the tester to subframe 0, word 169 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(4) Set the tester to subframe 0, word 86 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

(5) Set the tester to subframe 0, word 58 (Dataframe 7).

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-134

(6) Find a value in the (Table 501) that best agrees with the value for the hydraulic system pressure.

(a) Make sure that the octal value that shows on the tester agrees with the octal value shown in the (Table 501).

Table 501/31-31-00-993-802

Hydraulic Pressure	Tester Display (octal)
2400	5525 to 6131 (nominal 5727)
2500	5713 to 6317 (nominal 6115)
2600	6101 to 6505 (nominal 6303)
2700	6267 to 6673 (nominal 6471)
2800	6456 to 7062 (nominal 6660)
2900	6644 to 7250 (nominal 7046)
3000	7032 to 7436 (nominal 7234)
3100	7220 to 7624 (nominal 7422)
3200	7406 to 7777 (nominal 7610)
3300	7574 to 7777 (nominal 7777)

SUBTASK 31-31-00-860-135

(7) Release the captain's left brake pedal.

SUBTASK 31-31-00-860-136

(8) Push and hold the captain's right brake pedal fully against the stop.

SUBTASK 31-31-00-860-137

LOM 402, 406, 407, 411

(9) Set the tester to subframe 0, word 171 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(10) Set the tester to subframe 0, word 214 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

(11) Set the tester to subframe 0, word 186 (Dataframe 7).

LOM ALL

SUBTASK 31-31-00-860-352

(12) Find a value in the (Table 502) that best agrees with the value for the hydraulic system pressure.

(a) Make sure that the octal value that shows on the tester agrees with the octal value shown in the (Table 502).

Table 502/31-31-00-993-803

Hydraulic Pressure	Tester Display (octal)
2400	5525 to 6131 (nominal 5727)
2500	5713 to 6317 (nominal 6115)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 502/31-31-00-993-803 (Continued)

Hydraulic Pressure	Tester Display (octal)
2600	6101 to 6505 (nominal 6303)
2700	6267 to 6673 (nominal 6471)
2800	6456 to 7062 (nominal 6660)
2900	6644 to 7250 (nominal 7046)
3000	7032 to 7436 (nominal 7234)
3100	7220 to 7624 (nominal 7422)
3200	7406 to 7777 (nominal 7610)
3300	7574 to 7777 (nominal 7777)

SUBTASK 31-31-00-860-139

(13) Release the captain's right brake pedal.

SUBTASK 31-31-00-860-140

(14) Remove hydraulic pressure from system B (TASK 29-11-00-860-805).

SUBTASK 31-31-00-860-141

(15) Push the brake pedals at least 6 times to fully deplete the accumulator.

SUBTASK 31-31-00-860-142

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.

CAUTION MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(16) Supply hydraulic pressure for system A (TASK 29-11-00-860-801).

SUBTASK 31-31-00-860-143

(17) Push and hold the captain's left brake pedal fully against the stop.

SUBTASK 31-31-00-860-144

LOM 402, 406, 407, 411

(18) Set the tester to subframe 0, word 169 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(19) Set the tester to subframe 0, word 86 (Dataframe 3C).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999

(20) Set the tester to subframe 0, word 122 (Dataframe 7).

LOM ALL

SUBTASK 31-31-00-860-353

(21) Find a value in the (Table 503) that best agrees with the value for the hydraulic system pressure.

(a) Make sure that the octal value that shows on the tester agrees with the octal value shown in the (Table 503).

Table 503/31-31-00-993-804

Hydraulic Pressure	Tester Display (octal)
2400	5525 to 6131 (nominal 5727)
2500	5713 to 6317 (nominal 6115)
2600	6101 to 6505 (nominal 6303)
2700	6267 to 6673 (nominal 6471)
2800	6456 to 7062 (nominal 6660)
2900	6644 to 7250 (nominal 7046)
3000	7032 to 7436 (nominal 7234)
3100	7220 to 7624 (nominal 7422)
3200	7406 to 7777 (nominal 7610)
3300	7574 to 7777 (nominal 7777)

SUBTASK 31-31-00-860-146

(22) Release the captain's left brake pedal.

SUBTASK 31-31-00-860-147

(23) Push and hold the captain's right brake pedal fully against the stop.

SUBTASK 31-31-00-860-148

LOM 402, 406, 407, 411

(24) Set the tester to subframe 0, word 171 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(25) Set the tester to subframe 0, word 214 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

(26) Set the tester to subframe 0, word 250 (Dataframe 7).

LOM ALL

SUBTASK 31-31-00-860-354

(27) Find a value in the (Table 504) that best agrees with the value for the hydraulic system pressure.

(a) Make sure that the octal value that shows on the tester agrees with the octal value shown in the (Table 504).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 504/31-31-00-993-805

Hydraulic Pressure	Tester Display (octal)
2400	5525 to 6131 (nominal 5727)
2500	5713 to 6317 (nominal 6115)
2600	6101 to 6505 (nominal 6303)
2700	6267 to 6673 (nominal 6471)
2800	6456 to 7062 (nominal 6660)
2900	6644 to 7250 (nominal 7046)
3000	7032 to 7436 (nominal 7234)
3100	7220 to 7624 (nominal 7422)
3200	7406 to 7777 (nominal 7610)
3300	7574 to 7777 (nominal 7777)

SUBTASK 31-31-00-860-150

(28) Release the captain's right brake pedal.

SUBTASK 31-31-00-860-151

(29) Remove hydraulic pressure from system A (TASK 29-11-00-860-805).

AJ. Control Column Position Analog Signal Test

SUBTASK 31-31-00-860-152

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.

CAUTION

MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION

DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Supply hydraulic pressure for system A (TASK 29-11-00-860-801).

SUBTASK 31-31-00-860-153

(2) Install E1 rigging pin kit, SPL-1585, into the captain's control column to set the control column in the neutral position.

SUBTASK 31-31-00-860-154

(3) Set the tester to subframe 0, word 6.

(a) Make sure that the tester shows 7765 to 0013.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-155

(4) Set the tester to subframe 0, word 12.

(a) Make sure that the tester shows 7765 to 0013.

SUBTASK 31-31-00-860-156

(5) Remove rig pin E1.

SUBTASK 31-31-00-860-157

(6) Set the tester to subframe 0, word 6.

SUBTASK 31-31-00-860-158

(7) Pull the captain's control column full forward against stop.

(a) Make sure that the tester shows 1625 to 2422.

SUBTASK 31-31-00-860-159

(8) Push the captain's control column full aft against stop.

(a) Make sure that the tester shows 5006 to 5603.

SUBTASK 31-31-00-860-160

(9) Set the tester to subframe 0, word 12.

SUBTASK 31-31-00-860-161

(10) Push the first officer's control column full forward against the stop.

(a) Make sure that the tester shows 5330 to 6125.

SUBTASK 31-31-00-860-162

(11) Push the first officer's control column full aft against the stop.

(a) Make sure that the tester shows 2122 to 2716.

SUBTASK 31-31-00-860-163

(12) Remove hydraulic pressure from system A. (TASK 29-11-00-860-805).

AK. Control Wheel Position Analog Signal Test

SUBTASK 31-31-00-860-444

(1) Install A/S-1 and A/S-1A rigging pin kit, SPL-1585, into the aileron transfer mechanism.

SUBTASK 31-31-00-860-164

(2) Install a protractor, SPL-1680, on the captain's control wheel.

SUBTASK 31-31-00-860-445

(3) Adjust the protractor, SPL-1680, to read 0°.

SUBTASK 31-31-00-860-166

(4) Set the tester to subframe 0, word 19.

(a) Make sure that the tester shows 7771-0007.

SUBTASK 31-31-00-860-167

(5) Remove the rig pins A/S-1 and A/S-1A rigging pin kit, SPL-1585, from the aileron transfer mechanism.

SUBTASK 31-31-00-860-168

(6) Rotate the captain's control wheel 50° clockwise.

(a) Make sure that the tester shows 6654 to 6741.

SUBTASK 31-31-00-860-169

(7) Rotate the captain's control wheel 50° counterclockwise.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the tester shows 1036 to 1123.

SUBTASK 31-31-00-860-170

(8) Install a protractor, SPL-1680, to the first officer's control wheel.

SUBTASK 31-31-00-860-171

(9) Install the rig pins A/S-1 and A/S-1A rigging pin kit, SPL-1585, into the aileron transfer mechanism.

SUBTASK 31-31-00-860-172

(10) Set the tester to subframe 0, word 25.

(a) Make sure that the tester shows 7771-0007.

SUBTASK 31-31-00-860-173

(11) Remove the rig pins A/S-1 and A/S-1A rigging pin kit, SPL-1585, from the aileron transfer mechanism.

SUBTASK 31-31-00-860-174

(12) Rotate the first officer's control wheel 50° clockwise.

(a) Make sure that the tester shows 6654 to 6741.

SUBTASK 31-31-00-860-175

(13) Rotate the first officer's control wheel 50° counterclockwise.

(a) Make sure that the tester shows 1036 to 1123.

AL. Elevator Position Analog Signal Test

SUBTASK 31-31-00-860-361

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Supply hydraulic pressure for system A or B (TASK 29-11-00-860-801).

SUBTASK 31-31-00-860-176

(2) Use the stabilizer trim control switch on the control wheel to set the horizontal stabilizer to 4 units of trim.

SUBTASK 31-31-00-860-178

(3) Set the tester to subframe 0, word 4.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-179

(4) Move the control column full aft against stop.

(a) Make sure that the tester shows 6710 to 7056.

SUBTASK 31-31-00-860-180

(5) Move the control column full forward against stop.

(a) Make sure that the tester shows 0500 to 0646.

SUBTASK 31-31-00-860-181

(6) Set the tester to subframe 0, word 10.

SUBTASK 31-31-00-860-182

(7) Move the control column full aft against stop.

(a) Make sure that the tester shows 0730 to 1056.

SUBTASK 31-31-00-860-183

(8) Move the control column full forward against stop.

(a) Make sure that the tester shows 7140 to 7266.

SUBTASK 31-31-00-860-362

(9) Remove hydraulic pressure for system A or B (TASK 29-11-00-860-805).

AM. Rudder Pedal Position Analog Signal Test

SUBTASK 31-31-00-860-184

(1) Install rig pin R2 from rigging pin kit, SPL-1585, into the first officer's rudder pedal.

SUBTASK 31-31-00-860-185

(2) Set the tester to subframe 0, word 39.

(a) Make sure that the tester shows 7751 to 0027.

SUBTASK 31-31-00-860-186

(3) Remove rig pin R2 from the first officer's rudder pedal.

SUBTASK 31-31-00-860-187

(4) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(5) Push the captain's right rudder pedal full forward against stop.

(a) Make sure that the tester shows 5763 to 6423.

SUBTASK 31-31-00-860-188

(6) Push the captain's left rudder pedal full forward against stop.

(a) Make sure that the tester shows 1354 to 2014.

(7) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

AN. Rudder Position Analog Signal Test

SUBTASK 31-31-00-860-189

(1) Set the tester to subframe 0, word 37.

SUBTASK 31-31-00-860-190

(2) Put the rudder at the index mark.

(a) Make sure that the tester shows 7745 to 0034.

SUBTASK 31-31-00-860-191

(3) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(4) Put the rudder to the full left position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the tester shows 7032 to 7121.

SUBTASK 31-31-00-860-192

(5) Put the rudder to the full right position.

(a) Make sure that the tester shows 0656 to 0745.

(6) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

AO. Speedbrake Handle Position Analog Signal Test

SUBTASK 31-31-00-860-193

LOM 402, 406, 407, 411

(1) Set the tester to subframe 0, word 94 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

(2) Set the tester to subframe 0, word 222 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

(3) Set the tester to subframe 0, word 72 (Dataframe 7).

LOM ALL

SUBTASK 31-31-00-860-194

(4) Put the speedbrake handle to the DOWN position.

(a) Make sure that the tester shows 7763 to 0015.

SUBTASK 31-31-00-860-195

(5) Put the speedbrake handle to the ARMED DETENT position.

(a) Make sure that the tester shows 7666 to 7772.

SUBTASK 31-31-00-860-196

(6) Put the speedbrake handle to the INFLIGHT DETENT position.

(a) Make sure that the tester shows 7105 to 7241.

AP. Spoilers Position Analog Signal Test

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 31-31-00-860-735

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	4	C01662	SPOILER PCU SOV SYS A
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

SUBTASK 31-31-00-860-726

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.

(2) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 31-31-00-860-732

(3) Extend the trailing edge flaps to the 1-unit or greater position (TASK 27-51-00-860-803).

LOM ALL

SUBTASK 31-31-00-700-001

(4) Make sure that the captain's control wheel is in the neutral position.

SUBTASK 31-31-00-700-005

(5) Move the speed brake lever to the full UP position.

SUBTASK 31-31-00-700-002

(6) If you are testing the sensor on spoiler No. 3, do these steps:

(a) Set the tester to subframe 0, word 91.

LOM 402, 404, 406, 407, 412, 415, 416, 420, 423, 424, 426, 432, 437-439, 441, 443-447, 455, 456, 458-463

(b) Make sure that the tester shows 1032 to 1154.

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

(c) Make sure that the tester shows 0525 to 0631.

LOM ALL

SUBTASK 31-31-00-700-003

(7) If you are testing the sensor on spoiler No. 10, do these steps:

(a) Set the tester to subframe 0, word 96.

LOM 402, 404, 406, 407, 412, 415, 416, 420, 423, 424, 426, 432, 437-439, 441, 443-447, 455, 456, 458-463

(b) Make sure that the tester shows 6623 to 6745.

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

(c) Make sure that the tester shows 7146 to 7253.

LOM ALL

SUBTASK 31-31-00-700-004

(8) Move the speed brake lever to the DOWN position.

(a) Make sure that the tester shows 7735 to 0042.

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 31-31-00-860-733

(9) Do this task: Retract the Trailing Edge Flaps, TASK 27-51-00-860-804.

LOM ALL

SUBTASK 31-31-00-860-727

(10) If hydraulic power is not needed, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 411, 422, 425, 427-431, 433, 434, 440, 442, 450-454, 457, 464-999

SUBTASK 31-31-00-860-734

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	4	C01662	SPOILER PCU SOV SYS A
A	5	C01663	SPOILER PCU SOV SYS B

LOM ALL

AQ. AVM Digital Data Bus Signal Test

SUBTASK 31-31-00-860-205

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	2	C01076	ENGINE VIB MON

SUBTASK 31-31-00-860-206

(2) Remove the AVM signal conditioner, M1240 (TASK 77-31-03-000-801-F00).

SUBTASK 31-31-00-860-207

(3) Connect an analyzer, COM-1562, to pin C6 and D6 of connector D3228A.

SUBTASK 31-31-00-860-208

(4) Set the analyzer, COM-1562, to label 354, UPDATE data rate 200ms, and LOW data rate 12.5 Khz.

SUBTASK 31-31-00-860-209

(5) Select and transmit bits 31-9 on the test set as follows:

Table 505/31-31-00-993-815

FLS	31	30	29	28	27	26...11	10	9
L	1	1	0	1	1	0...0	0	1

SUBTASK 31-31-00-860-210

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(6) Set the tester to subframe 0, word 121.

(a) Make sure that the tester shows 600X.

NOTE: The X can be equal to a number from 0 to 7. Ignore the number on the tester display where the X shows.

LOM 427-434, 437-447, 450-999

(7) Set the tester to subframe 0, word 62.

(a) Make sure that the tester shows 600X.

NOTE: Ignore the number on the tester display where the X shows.

LOM ALL

SUBTASK 31-31-00-860-211

(8) Install the AVM signal conditioner, M1240 (TASK 77-31-03-400-801-F00).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-212

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	2	C01076	ENGINE VIB MON

AR. Air Data Inertia Reference Unit (ADIRU) Data Bus Signal Test

SUBTASK 31-31-00-860-333

(1) Set the SYS DSPL switch, on the P5 overhead panel, to the L position.

SUBTASK 31-31-00-860-213

(2) Set the tester to subframe 0, word 172.

SUBTASK 31-31-00-860-214

(3) Push and hold the inertial system display unit switch, on the P5 aft overhead panel, to the TEST position for greater than 7 seconds.

(a) Make sure that the tester shows 2110.

SUBTASK 31-31-00-860-215

(4) Release the inertial system display unit switch.

AS. Rudder Trim Command Discrete Signal Test

SUBTASK 31-31-00-860-216

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 232 (Dataframe 3B or 3C).

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 100 (Dataframe 7).

LOM ALL

SUBTASK 31-31-00-860-217

(3) Turn and hold the rudder trim control switch, on the P8 aileron and rudder trim module, to the NOSE RIGHT position.

(a) Make sure that bit 1 on the tester is a 0 and bit 2 on the tester is a 1.

SUBTASK 31-31-00-860-219

(4) Release the rudder trim control switch.

(a) Make sure that bit 1 & 2 on the tester is a 1.

SUBTASK 31-31-00-860-699

(5) Turn and hold the rudder trim control switch, on the P8 aileron and rudder trim module, to the NOSE LEFT position.

(a) Make sure that bit 1 on the tester is a 1 and bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-700

(6) Release the rudder trim control switch.

(a) Make sure that bit 1 & 2 on the tester is a 1.

AT. Stabilizer Position Analog Signal Test

SUBTASK 31-31-00-860-220

(1) Set the tester to subframe 0, word 136.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-221

(2) Set the B dimension to 39.89 inch (4 units of trim).

(a) Make sure that the tester shows 7705 to 0074.

SUBTASK 31-31-00-860-222

(3) Set the B dimension to 25.53 inch (14 units of trim).

(a) Make sure that the tester shows 0437 to 0660.

AU. IR-3 Digital Data Bus Signal Test

SUBTASK 31-31-00-860-223

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 2, word 182.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 244.

LOM ALL

SUBTASK 31-31-00-860-224

(3) Put the DSPL SEL switch, on the Inertial System Display Unit (ISDU) to the TEST position for more than 7 seconds.

(a) Make sure that the tester shows 310X.

NOTE: The X can be equal to a number from 0 to 7. Ignore the number on the tester display where the X shows.

SUBTASK 31-31-00-860-225

(4) Release the inertial system display unit switch.

AV. FCC Digital Data Bus Signal Test

SUBTASK 31-31-00-860-226

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.

(1) Supply hydraulic pressure for system A and B (TASK 29-11-00-860-801).

SUBTASK 31-31-00-860-355

(2) Push the CMD switch for channel A on the mode select panel.

(a) Make sure that autopilot system A is engaged.

(b) Make sure that autopilot system B is not engaged.

SUBTASK 31-31-00-860-227

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 0, word 24 (Dataframe 3B or 3C).

(a) Make sure that bit 1 on the tester is 0 and bit 2 on the tester is 1.

LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 0, word 28 (Dataframe 7).

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LOM 427-434, 437-447, 450-999 (Continued)

(a) Make sure that bit 1 on the tester is 0 and bit 2 on the tester is 1.

LOM ALL

SUBTASK 31-31-00-860-231

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(5) Set the tester to subframe 0, word 15.

LOM 427-434, 437-447, 450-999

(6) Set the tester to subframe 0, word 15.

LOM ALL

SUBTASK 31-31-00-860-232

(7) Put the captain's control column fully to the aft position.

(a) Make sure that the octal value that shows on the display of the tester increases.

SUBTASK 31-31-00-860-233

(8) Put the captain's control column forward.

(a) Make sure that the value on the tester decreases.

SUBTASK 31-31-00-860-446

(9) Push the DISENGAGE switch on the mode select panel.

(a) Make sure that autopilot system A is disengaged.

SUBTASK 31-31-00-860-357

(10) Push the CMD switch for channel B on the mode select panel.

(a) Make sure that autopilot system B is engaged.

SUBTASK 31-31-00-860-235

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(11) Set the tester to subframe 0, word 24.

(a) Make sure that bit 1 on the tester is 1 and bit 2 on the tester is 0.

LOM 427-434, 437-447, 450-999

(12) Set the tester to subframe 0, word 28.

(a) Make sure that bit 1 on the tester is 1 and bit 2 on the tester is 0.

LOM ALL

SUBTASK 31-31-00-860-239

(13) Set the tester to subframe 0, word 14.

SUBTASK 31-31-00-860-240

(14) Put the first officer's control column fully to the aft position.

(a) Make sure that the octal value that shows on the display of the tester increases.

SUBTASK 31-31-00-860-241

(15) Put the first officer's control column forward.

(a) Make sure that the value on the tester decreases.

SUBTASK 31-31-00-860-447

(16) Push the DISENGAGE switch on the mode select panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AW. Flight Management Computer (FMC) Digital Data Bus Signal Test

SUBTASK 31-31-00-860-242

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 4, word 256, superframe 14.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 1, word 456, superframe 6.

LOM ALL

SUBTASK 31-31-00-860-243

(3) Push the INIT/REF mode key from the CDU.

(a) Make sure that the PERF INIT page shows on the CDU display.

SUBTASK 31-31-00-860-244

(4) Enter 63.5K (in Kg) or 140.0K (in lbs) from the CDU keyboard.

SUBTASK 31-31-00-860-245

(5) Push the line-select-key next to the gross weight field.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that the tester shows 6620 to 6807.

NOTE: This is a superframe. The portable tester will show the data for 4 seconds and will show it again in 64 seconds. When you are waiting for the next 64 second cycle, the portable tester display may show a blank screen or "DFDR Running".

LOM 427-434, 437-447, 450-999

(b) Make sure that the tester shows 3236 to 3416.

NOTE: This is a superframe. The portable tester will show the data for 4 seconds and will show it again in 64 seconds. When you are waiting for the next 64 second cycle, the portable tester display may show a blank screen or "DFDR Running".

LOM ALL

SUBTASK 31-31-00-860-246

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(6) Set the tester to subframe 4, word 51, superframe 3.

LOM 427-434, 437-447, 450-999

(7) Set the tester to subframe 2, word 61, superframe 0.

LOM ALL

SUBTASK 31-31-00-860-247

(8) Push the line-select-key next to the TAKEOFF prompt on the CDU display.

(a) Make sure that the TAKEOFF REF page shows on the CDU display.

SUBTASK 31-31-00-860-248

(9) Enter 125 knots from the CDU keyboard.

SUBTASK 31-31-00-860-249

(10) Push the line-select-key next to the V2 field.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that the tester shows 0760 to 0770.

NOTE: This is a superframe. The portable tester will show the data for 4 seconds and will show it again in 64 seconds. When you are waiting for the next 64 second cycle, the portable tester display may show a blank screen or "DFDR Running".

LOM 427-434, 437-447, 450-999

(b) Make sure that the tester shows 1740 to 1760.

NOTE: This is a superframe. The portable tester will show the data for 4 seconds and will show it again in 64 seconds. When you are waiting for the next 64 second cycle, the portable tester display may show a blank screen or "DFDR Running".

LOM ALL

AX. Captain's Clock Digital Data Bus Signal Test

SUBTASK 31-31-00-860-494

(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 31-31-00-860-495

(2) Open and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	1	C00736	MISC CLOCK DISPLAY
A	2	C00737	MISC CLOCK

SUBTASK 31-31-00-860-496

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 4, word 181.

LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 1, word 256.

LOM ALL

SUBTASK 31-31-00-860-585

(5) Do these steps to set the captain's clock to 13 hrs, 42 min:

(a) Push the SET button until MAN shows on the clock display.

(b) Use the (-) and (+) button to set the time.

(c) Push the SET button to run the clock.

(d) Make sure that the tester shows 3324 or 3325.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-499

(6) 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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
A	13	C01480	RADIO NAVIGATION MMR 2

AY. GPWC Digital Data Bus Signal Test

SUBTASK 31-31-00-860-253

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 64.

(a) Make sure that the ground proximity warning system SYS TEST switch is not activated.

(b) Make sure that the PULL UP message is not heard on the flight deck speakers.

(c) Make sure that bit 2 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 265.

(a) Make sure that the ground proximity warning system SYS TEST switch is not activated.

(b) Make sure that the PULL UP message is not heard on the flight deck speakers.

(c) Make sure that bit 1 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-254

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Push the SYS TEST switch on the ground proximity panel, P3.

(a) Make sure that the PULL UP message is heard on the flight deck speakers.

(b) Make sure that bit 2 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(4) Push the SYS TEST switch on the ground proximity panel, P3.

(a) Make sure that the PULL UP message is heard on the flight deck speakers.

(b) Make sure that bit 1 on the tester is a 1.

LOM ALL

AZ. APU Digital Data Bus Signal Test

SUBTASK 31-31-00-860-255

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 154.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 50.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-256

(3) Put the APU master switch, S248, on the P5 APU panel, to the ON position.

(a) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-257

(4) Put the APU master switch, S248, on the P5 APU panel, to the OFF position.

(a) Make sure that bit 1 on the tester is a 0.

BA. SMYDC #1 and #2 Digital Data Bus Signal Test

SUBTASK 31-31-00-860-258

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 72.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 73.

LOM ALL

SUBTASK 31-31-00-860-259

(3) Use the angle of attack probe test fixture, SPL-1917, to put the AOA Vane #1 to 11° UP.

(a) Make sure that tester shows 0343 to 0421.

SUBTASK 31-31-00-860-260

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC
E	7	C01208	STALL WARN ASYM MODE

SUBTASK 31-31-00-860-261

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(5) Set the tester to subframe 0, word 200.

LOM 427-434, 437-447, 450-999

(6) Set the tester to subframe 0, word 75.

LOM ALL

SUBTASK 31-31-00-860-262

(7) Use the angle of attack probe test fixture, SPL-1917, to put the AOA Vane #2 to 11° UP.

(a) Make sure that tester shows 0343 to 0421.

SUBTASK 31-31-00-860-263

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	4	C01392	STICK SHAKER LEFT
E	5	C01204	SMYD-1 CMPTR DC
E	6	C01205	SMYD-1 SNSR EXC AC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	7	C01208	STALL WARN ASYM MODE

BB. LRRA Digital Data Bus Signal Test

SUBTASK 31-31-00-860-532

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 2, word 128 (Dataframe 3, 3A, 3B or 3C).

(a) Make sure that the tester shows 7776 to 7772.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 124 (Dataframe 7).

(a) Make sure that the tester shows 7776 to 7772.

LOM ALL

SUBTASK 31-31-00-860-533

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 4, word 128.

(a) Make sure that the tester shows 7776 to 7772.

LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 0, word 126.

(a) Make sure that the tester shows 7776 to 7772.

LOM ALL

SUBTASK 31-31-00-860-534

(5) Push and hold the self test on the radio altimeter 1 for about 5 seconds.

SUBTASK 31-31-00-860-535

(6) Release the self test button on the radio altimeter 1.

SUBTASK 31-31-00-860-536

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(7) Set the tester to subframe 2, word 128.

(a) Make sure that the radio altimeter shows 40 ±2 ft.

(b) Make sure that the tester shows 0052 to 0046.

LOM 427-434, 437-447, 450-999

(8) Set the tester to subframe 0, word 124.

(a) Make sure that the radio altimeter shows 40 ±2 ft.

(b) Make sure that the tester shows 0052 to 0046.

LOM ALL

SUBTASK 31-31-00-860-537

(9) Push and hold the self test switch on the radio altimeter 2 for about 5 seconds.

SUBTASK 31-31-00-860-538

(10) Release the self test switch.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-539

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(11) Set the tester to subframe 4, word 128.

(a) Make sure that the radio altimeter shows 40 ±2 ft.

(b) Make sure that the tester shows 0052 to 0046.

LOM 427-434, 437-447, 450-999

(12) Set the tester to subframe 0, word 126.

(a) Make sure that the radio altimeter shows 40 ±2 ft.

(b) Make sure that the tester shows 0052 to 0046.

LOM ALL

BC. TCAS Digital Data Bus Signal Test

SUBTASK 31-31-00-860-334

(1) Make sure thatTCAS is not in self-test mode.

SUBTASK 31-31-00-860-271

(2) Make sure that resolution advisories do not show on the captain's and F/O's display units.

SUBTASK 31-31-00-860-272

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 0, word 46.

(a) Make sure that bit 9 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 0, word 235.

(a) Make sure that bit 12 on the tester is a 0.

LOM ALL

SUBTASK 31-31-00-860-273

(5) Push and release the switch, on the P8 TCAS/ATC control panel, to the TEST position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 9 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(b) Make sure that bit 12 on the tester is a 1.

LOM ALL

(c) Make sure that you hear 'TCAS test ---- TCAS test pass'.

BD. Common Display System (CDS) Digital Data Bus Signal Test

SUBTASK 31-31-00-860-274

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-384

(2) Use the mode switch to select MAP on the CAPT EFIS control panel.

SUBTASK 31-31-00-860-275

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Set the tester to subframe 3, word 227.

(a) Make sure that bit 1 on the tester shows 1.

LOM 427-434, 437-447, 450-999

(4) Set the tester to subframe 3, word 225.

(a) Make sure that bit 2 on the tester shows 1.

LOM ALL

SUBTASK 31-31-00-860-385

(5) Use the mode switch to deselect MAP on the CAPT EFIS control panel.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 1 on the tester shows 0.

LOM 427-434, 437-447, 450-999

(b) Make sure that bit 2 on the tester shows 0.

LOM ALL

SUBTASK 31-31-00-860-335

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	11	C01360	DISPLAY DEU 2 PRI

NOTE: Wait for about 3 minutes for the CDS display unit to come back on line.

SUBTASK 31-31-00-860-386

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP

SUBTASK 31-31-00-860-387

(8) Use the mode switch to select MAP on the CAPT EFIS control panel.

SUBTASK 31-31-00-860-388

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(9) Set the tester to subframe 3, word 227.

(a) Make sure that bit 1 on the tester shows 1.

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LOM 427-434, 437-447, 450-999

(10) Set the tester to subframe 3, word 225.

(a) Make sure that bit 2 on the tester shows 1.

LOM ALL

SUBTASK 31-31-00-860-389

(11) Use the mode switch to deselect MAP on the CAPT EFIS control panel.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(a) Make sure that bit 1 on the tester shows 0.

LOM 427-434, 437-447, 450-999

(b) Make sure that bit 2 on the tester shows 0.

LOM ALL

SUBTASK 31-31-00-860-280

(12) Remove safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	10	C01361	DISPLAY DEU 1 HOLDUP

BE. Distance Measuring Equipment (DME) Digital Data Bus Signal Test

SUBTASK 31-31-00-860-286

(1) Set a frequency of 108.00 MHz on the P8 captain's navigation control panel.

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY window. Then push the TFR button. The frequency will show in the ACTIVE display window.

SUBTASK 31-31-00-860-287

(2) Set a frequency of 108.00 MHz on the ATC (Modes A, C, & S) test set, COM-920.

SUBTASK 31-31-00-860-288

(3) Set the DME distance to 50 miles on the ATC (Modes A, C, & S) test set, COM-920.

SUBTASK 31-31-00-860-289

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(4) Set the tester to subframe 2, word 183.

(a) Make sure that the tester shows 1277 to 1533.

LOM 427-434, 437-447, 450-999

(5) Set the tester to subframe 0, word 187.

(a) Make sure that the tester shows 1277 to 1533.

LOM ALL

SUBTASK 31-31-00-860-290

(6) Set a VOR frequency of 108.00 MHz on the P8 first officer's navigation control panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-292

(7) Set a DME distance of 100 miles on the test ATC (Modes A, C, & S) test set, COM-920.

SUBTASK 31-31-00-860-293

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(8) Set the tester to subframe 4, word 183.

(a) Make sure that the tester shows 2714 to 3150.

LOM 427-434, 437-447, 450-999

(9) Set the tester to subframe 0, word 443.

(a) Make sure that the tester shows 2714 to 3150.

LOM ALL

BF. Instrument Landing System (ILS) Digital Data Bus Signal Test

SUBTASK 31-31-00-860-294

(1) Set a frequency of 108.1 MHz on the P8 captain's navigation control panel.

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY window. Then push the TFR button. The frequency will show in the ACTIVE display window.

SUBTASK 31-31-00-860-295

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(2) Set the tester to subframe 1, word 53.

(a) Make sure that the tester shows 0402.

LOM 427-434, 437-447, 450-999

(3) Set the tester to subframe 1, word 247.

(a) Make sure that the tester shows 040X.

LOM ALL

SUBTASK 31-31-00-860-296

(4) Set a frequency of 110.3 MHz on the P8 first officer's navigation control panel.

SUBTASK 31-31-00-860-297

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(5) Set the tester to subframe 3, word 53.

(a) Make sure that the tester shows 1006.

LOM 427-434, 437-447, 450-999

(6) Set the tester to subframe 0, word 503.

(a) Make sure that the tester shows 100X.

LOM ALL

BG. VOR Digital Data Bus Signal Test

SUBTASK 31-31-00-860-298

(1) Set a frequency of 109.60 MHz on the P8 captain's navigation control panel.

NOTE: To set the frequency, turn the frequency selector until the frequency shows in the STANDBY window. Then push the TFR button. The frequency will show in the ACTIVE display window.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-00-860-299

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(2) Set the tester to subframe 2, word 56.

(a) Make sure that the tester shows 2260.

LOM 427-434, 437-447, 450-999

(3) Set the tester to subframe 0, word 248.

(a) Make sure that the tester shows 226X.

LOM ALL

SUBTASK 31-31-00-860-300

(4) Set a frequency of 110.00 MHz on the P8 first officer's navigation control panel.

SUBTASK 31-31-00-860-301

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(5) Set the tester to subframe 4, word 56.

(a) Make sure that the tester shows 4000.

LOM 427-434, 437-447, 450-999

(6) Set the tester to subframe 0, word 504.

(a) Make sure that the tester shows 400X.

LOM 402, 404, 406, 407, 411, 412, 415, 420, 422, 425, 427-431, 433, 434, 439-442, 450-454, 457-460, 464-999

BH. CDS Engine/EEC Digital Data Bus Signal Test

SUBTASK 31-31-00-860-420

(1) Set the engine start lever, on the P8 aft electronics panel, to the CUTOFF position.

SUBTASK 31-31-00-860-421

(2) Set the engine start switch, on the P5 aft overhead panel, to the CONT position.

NOTE: This will energize the EECs without enabling ignition.

SUBTASK 31-31-00-860-422

(3) Push the MENU key on the left CDU.

LOM 427-431, 466-999

SUBTASK 31-31-00-840-016

(4) Do these steps to make sure that the DFDAU ARINC 429 receive ports 42, 43, 44, and 45 are set to high speed “H.”

(a) Make these selections on the left CDU.

1) ACMS or DFDMU.

2) DMP TEST

3) DITS PORT SPEED

4) 41-46.

(b) Make sure that ports 42, 43, 44, and 45 are all set to “H.” If not, press the appropriate LSK until “H” is displayed.

(c) Select RETURN until the main menu is displayed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 420, 422, 425, 433, 434, 439-442, 453, 454, 457-460

SUBTASK 31-31-00-860-524

(5) Make these selections on the left CDU.

(a) ACMS

(b) ACMS MAIN MENU

(c) DATA DISPLAY

(d) DIGITAL INPUT.

LOM 427-431, 466-999

SUBTASK 31-31-00-860-520

(6) Make these selections on the left CDU.

(a) ACMS or DFDMU

(b) DMP TEST

(c) DIT ACQUISITION.

LOM 402, 404, 406, 407, 411, 412, 415, 420, 422, 425, 427-431, 433, 434, 439-442, 450-454, 457-460, 464-999

SUBTASK 31-31-00-860-424

(7) Enter PORT 42, LAB 030, SDI 00 into the left CDU scratchpad.

SUBTASK 31-31-00-860-425

(8) Push the LSK 1L key on the left CDU.

SUBTASK 31-31-00-860-426

(9) Enter PORT 43, LAB 030, SDI 01 into the left CDU scratchpad.

SUBTASK 31-31-00-860-427

(10) Push the LSK 4L key on the left CDU.

(a) Make sure that the valid data for port 42 and 43 is present in hexadecimal and binary.

NOTE: When valid data is not present, the hexadecimal and binary data field will shows all Xs.

SUBTASK 31-31-00-860-428

(11) Enter PORT 44, LAB 030, SDI 10 into the left CDU scratchpad.

SUBTASK 31-31-00-860-429

(12) Push the LSK 1L on the left CDU.

SUBTASK 31-31-00-860-430

(13) Enter PORT 45, LAB 030, SDI 11 into the left CDU scratchpad.

SUBTASK 31-31-00-860-431

(14) Push the LSK 4L key on the left CDU.

(a) Make sure that the valid data for port 44 and 45 is present in hexadecimal and binary.

NOTE: When valid data is not present, the hexadecimal and binary data field will shows all Xs.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 420, 422, 425, 427-431, 433, 434, 439-442, 450-454, 457-460, 464-999 (Continued)

SUBTASK 31-31-00-760-001

(15) Open and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

LOM 412, 415, 423, 424, 432, 439, 441, 464, 466-999

BI. Heads Up Guidance Digital Bus Test

SUBTASK 31-31-00-860-525

(1) Set the tester to subframe 0, word 54.

SUBTASK 31-31-00-860-526

(2) Set the HGS combiner to the stowed position.

(a) Make sure that bit 1 is a 0.

SUBTASK 31-31-00-860-527

(3) Set the HGS combiner to in use position.

(a) Make sure that bit 1 is a 1.

LOM ALL

BJ. Accelerometer Analog Signal and DFDR Playback Test

SUBTASK 31-31-00-860-589

(1) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, is in the TEST position.

SUBTASK 31-31-00-860-590

(2) Make sure that the flight recorder OFF light is off.

SUBTASK 31-31-00-860-728

(3) Loosen the accelerometer, but do not disconnect the electrical connector (TASK 31-31-81-000-801).

SUBTASK 31-31-00-860-729

(4) Use an inclinometer to put the accelerometer in the inverted position.

(a) Set the tester to subframe 0, word 34.

(b) Make sure that on the tester shows 1737 to 2061.

SUBTASK 31-31-00-860-730

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(5) Use an inclinometer to put the accelerometer in the L Face Up position.

(a) Set the tester to subframe 0, word 36.

(b) Make sure that the tester shows 0153 - 0335.

LOM 427-434, 437-447, 450-999

(6) Use an inclinometer to put the accelerometer in the L Face Up position.

(a) Set the tester to subframe 0, word 21.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999 (Continued)

(b) Make sure that the tester shows 0153 - 0335.

LOM ALL

SUBTASK 31-31-00-860-731

(7) Use an inclinometer to put the accelerometer in the Fwd Face Up position.

(a) Set the tester to subframe 0, word 45.

(b) Make sure that on the tester shows 7707 - 7777.

SUBTASK 31-31-00-420-017

(8) Install the accelerometer (TASK 31-31-81-400-801).

SUBTASK 31-31-00-860-304

(9) Set the tester to subframe 0, word 34.

(a) Make sure that on the tester shows 3514 to 3636.

SUBTASK 31-31-00-860-307

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(10) Set the tester to subframe 0, word 36.

(a) Make sure that the tester shows 4031 to 4213.

LOM 427-434, 437-447, 450-999

(11) Set the tester to subframe 0, word 21.

(a) Make sure that the tester shows 4030 to 4213.

LOM ALL

SUBTASK 31-31-00-860-310

(12) Set the tester to subframe 0, word 45.

(a) Make sure that the tester shows 4031 to 4213.

BK. Rudder Pedal Force Analog Signal Test

SUBTASK 31-31-00-840-003

(1) Make sure that the hydraulic systems A, B and STBY are off.

SUBTASK 31-31-00-860-481

(2) Set the tester to subframe 0, word 40.

SUBTASK 31-31-00-860-482

(3) With no pressure to the left or right rudder pedals, make sure that the tester shows 3012 to 4112.

SUBTASK 31-31-00-840-004

(4) Put pressure to the left rudder pedal.

(a) Make sure that the tester octal value increases.

NOTE: It may take 1 to 4 seconds to update. Hold the rudder pedal until a reading is shown.

SUBTASK 31-31-00-840-005

(5) Release pressure from the left rudder pedal.

SUBTASK 31-31-00-860-483

(6) Put firm pressure to the right rudder pedal.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Make sure that the tester octal value decreases.

BL. Forward Cargo Smoke Detection Signal Test

SUBTASK 31-31-00-860-562

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 59.

(a) Make sure that bit 2 on the tester is 1.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 412.

(a) Make sure that bit 1 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-563

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(3) Push and hold the cargo smoke detection and fire suppression test button, P8-75, for at least 4 seconds.

(a) Make sure that the bit 2 on the tester is a 0.

LOM 427-434, 437-447, 450-999

(4) Push and hold the cargo smoke detection and fire suppression test button, P8-75, for at least 4 seconds.

(a) Make sure that bit 1 on the tester is 0.

LOM ALL

BM. Aft Cargo Smoke Detection Signal Test

SUBTASK 31-31-00-860-486

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(1) Set the tester to subframe 0, word 59.

(a) Make sure that the bit 1 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(2) Set the tester to subframe 0, word 156.

(a) Make sure that the bit 1 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-487

(3) Push and hold the cargo smoke detection and fire suppression test button, on the P8-75 panel, for at least 4 seconds.

(a) Make sure that the bit 1 on the tester is a 0.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BN. Standby Hydraulic System Low Pressure Discretes Signal Test

SUBTASK 31-31-00-860-564

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

(1) Make sure that hydraulic system A & B ELEC pump are ON.

SUBTASK 31-31-00-860-565

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(2) Set the portable tester to word 3, subframe 0.

LOM 427-434, 437-447, 450-999

(3) Set the portable tester to subframe 0, word 180.

LOM ALL

SUBTASK 31-31-00-860-566

(4) Set the FLT CONT SYS A (S3) switch, on the P5 flight control panel, to the ON position.

SUBTASK 31-31-00-860-567

(5) Set the FLT CONT SYS B (S4) switch, on the P5 flight control panel, to the ON position.
   (a) Make sure that the FLT CONT SYS A low pressure light is off.
   (b) Make sure that bit 1 on the tester is a 0.

SUBTASK 31-31-00-860-568

(6) Set the FLT CONT SYS A (S3) switch, on the P5 flight control panel, to the OFF position.
   (a) Make sure that the FLT CONT SYS A low pressure light comes on.
   (b) Make sure that bit 1 on the tester is a 1.

SUBTASK 31-31-00-860-569

(7) Set the FLT CONT SYS A (S3) switch, on the P5 flight control panel, to the ON position.
   (a) Make sure that the FLT CONT SYS B low pressure light is off.
   (b) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-570

(8) Set the FLT CONT SYS B (S4) switch, on the P5 flight control panel, to the OFF position.
   (a) Make sure that the FLT CONT SYS B low pressure light comes on.
   (b) Make sure that bit 2 on the tester is a 1.

SUBTASK 31-31-00-860-571

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(9) Set the portable tester to word 220, subframe 0.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999

(10) Set the portable tester to subframe 0, word 99.

LOM ALL

SUBTASK 31-31-00-860-573

(11) Set the FLT CONT SYS B (S4) switch, on the P5 flight control panel, to the ON position.

(a) Make sure that the FLT CONT SYS A low pressure light is off.

(b) Make sure that bit 2 on the tester is a 0.

SUBTASK 31-31-00-860-574

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(12) Set the FLT CONT SYS A (S3) switch, on the P5 flight control panel, to the STBY RUD position.

(a) Make sure that the FLT CONT SYS A low pressure light is off.

(b) Make sure that bit 2 on the tester is a 1.

LOM 427-434, 437-447, 450-999

(13) Set the FLT CONT SYS A (S3) switch, on the P5 flight control panel, to the STBY RUD position and FLT CONT SYS B (S4) switch to the ON position.

(a) Make sure that the FLT CONT SYS A low pressure light is off.

(b) Make sure that bit 2 on the tester is a 1.

LOM ALL

SUBTASK 31-31-00-860-737

(14) Set the FLT CONT SYS A (S3) switch, on the P5 flight control panel, to OFF and FLT CONT SYS B (S4) switch to the OFF position.

BO. Standby Hydraulic Pressure Transmitter Analog Signal Test

SUBTASK 31-31-00-860-686

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(1) Make sure that the FLT CONTROL hydraulic pressure system switches A and B, on the P5 panel, are not in standby position (STBY RUD).

SUBTASK 31-31-00-860-687

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(2) Set the tester to word 56, subframe 1.

LOM 427-434, 437-447, 450-999

(3) Set the tester to subframe 0, word 200.

LOM ALL

SUBTASK 31-31-00-860-688

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(4) Make sure that the tester display is 6270 to 6326.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999

(5) Make sure that the tester display is 6265 to 6336.

LOM ALL

SUBTASK 31-31-00-860-689

(6) Set FLT CONTROL switch A, on the P5 panel, to STBY RUD.

SUBTASK 31-31-00-860-690

(7) Verify STANDBY HYD low pressure light, on the P5 panel, is extinguished.

NOTE: May illuminate briefly when switched to standby.

SUBTASK 31-31-00-860-691

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(8) Make sure that the tester display is 5544 to 6066.

LOM 427-434, 437-447, 450-999

(9) Make sure that the tester display is 5577 to 5717.

LOM ALL

SUBTASK 31-31-00-860-692

(10) Set FLT CONTROL switch A, on the P5 panel, to the OFF position.

LOM 466-999

BP. ACMS Discrete Signal Test

SUBTASK 31-31-00-865-005

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	6	C01017	FMCS CMPTR 1
A	7	C01238	FMCS MCDU 1
C	8	C00544	FLIGHT RECORDER POSITION SENSOR
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	15	C01239	FMCS MCDU 2

SUBTASK 31-31-00-720-003

(2) Do the steps that follow:

(a) Push the MENU key on the right CDU.

(b) Push the ACMS prompt on the right CDU.

(c) Push the DMP TESTS prompt on the right CDU.

(d) Push the NEXT PAGE key on the right CDU.

(e) Push the DISCRETES prompt on the right CDU.

(f) Select the port number field on the CDU (LSK 1R, 2R and 3R).

(g) Make sure that the values agree with the ACMS Discrete Signal Tests.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

SUBTASK 31-31-00-730-133

(3) Antiskid Inoperative Discrete Test

(a) Make sure that the test results show as follows:

Table 506/31-31-00-993-817

Test Conditions	C/B Name	C/B GR ID	C/B Number	DFDAU Port	BIT State
Circuit Breakers CLOSED	Outboard Antiskid (P6-3)	E18	C00195	148	1
	Inboard Antiskid (P6-3)	E16	C00196		
Circuit Breakers OPEN	Outboard Antiskid (P6-3)	E18	C00195	148	0
	Outboard Antiskid (P6-3)	E16	C00196		

SUBTASK 31-31-00-730-134

(4) FMC Warn Captain Discrete Test

(a) Make sure that the test results show as follows:

Table 507/31-31-00-993-818

Test Condition	C/B Name	C/B GRID	C/B Number	DFDAU Port	BIT State
Circuit Breaker CLOSED	FMCS CMPTR 1	A6	C01017	121	0
Circuit Breaker OPEN	FMCS CMPTR 1	A6	C01017	121	1

SUBTASK 31-31-00-865-019

(5) First Officer Warn Discrete Test

(a) 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
C	8	C00544	FLIGHT RECORDER POSITION SENSOR
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-00-730-136

(6) Do the steps that follow:

(a) Push the MENU key on the right CDU.

(b) Push ACMS on the right CDU.

(c) Push the DMP TESTS prompt on the right CDU.

(d) Push the NEXT PAGE key on the right CDU.

(e) Push the DISCRETES prompt on the right CDU.

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LOM 466-999 (Continued)

(f) Push the PORT 110-135 prompt on the right CDU.

(7) Make sure that the test results show as follows:

Table 508/31-31-00-993-819

Test Condition	DFDAU Port	BIT State
FMCS CMPTR 2 C/B (C01262) CLOSED	122	0
FMCS CMPTR 2 C/B (C01262) OPEN	122	0

SUBTASK 31-31-00-730-137

(8) Autobrake Switch Discrete Test

(a) Make sure that the test results show as follows:

Table 509/31-31-00-993-820

Switch Position	Test Condition	DFDAU PORT	BIT State
Level 1	Autobrake Selector Switch (P2) LEVEL 1 position selected	139	1
	Autobrake Selector Switch (P2) LEVEL 1 position not selected	139	0
Level 2	Autobrake Selector Switch (P2) LEVEL 2 position selected	140	1
	Autobrake Selector Switch (P2) LEVEL 2 position not selected	140	0
Level 3	Autobrake Selector Switch (P2) LEVEL 3 position selected	141	1
	Autobrake Selector Switch (P2) LEVEL 3 position not selected	141	0
MAX	Autobrake Selector Switch (P2) MAX position selected	142	1
	Autobrake Selector Switch (P2) MAX position not selected	142	0
RTO	Autobrake Selector Switch (P2) RTO position selected	143	1
	Autobrake Selector Switch (P2) RTO position not selected	143	0
OFF	Autobrake Selector Switch (P2) OFF position selected	151	1
	Autobrake Selector Switch (P2) OFF position not selected	151	0

SUBTASK 31-31-00-730-138

(9) Parking Brake Discrete Test

(a) Make sure that the test results show as follows:

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LOM 466-999 (Continued)

Table 510/31-31-00-993-821

Test Condition	DFDAU Port	BIT State
Parking brake in SET position	130	0
Parking brake in SET position	130	1

SUBTASK 31-31-00-730-139

(10) Landing Gear Lever Position Discrete Test

(a) Make sure that the test results show as follows:

Table 511/31-31-00-993-822

Test Condition	DFDAU Port	BIT State
Landing Gear Control Lever in DOWN position (P2-3) SELECTED	129	0
Landing Gear Control Lever in DOWN position (P2-3) NOT SELECTED	129	1
Landing Gear Control Lever in UP position (P2-3) SELECTED	128	0
Landing Gear Control Lever in UP position (P2-3) NOT SELECTED	128	1

SUBTASK 31-31-00-730-140

(11) Autopilot Manual Disconnect No. 1 and No. 2 Discrete Test

(a) Make sure that the test results show as follows:

Table 512/31-31-00-993-823

Test Condition	Switch Position	DFDAU Port	BIT State
Autopilot Manual Disconnect No.1 (FCC-A)	Control Wheel Disengage Switch NOT DEPRESSED	137	1
	Control Wheel Disengage Switch DEPRESSED	137	0
Autopilot Manual Disconnect No.2 (FCC-A)	Control Wheel Disengage Switch NOT DEPRESSED	138	1
	Control Wheel Disengage Switch DEPRESSED	138	0

SUBTASK 31-31-00-730-141

(12) Landing Gear Horn Discrete Test

(a) Make sure that the test results show as follows:

Table 513/31-31-00-993-825

Test Condition	DFDAU Port	BIT State	Aural Result
Set Flap to 15 Degrees. Do not slug the Nose Gear	127	1	No Horn

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

Table 513/31-31-00-993-825 (Continued)

Test Condition	DFDAU Port	BIT State	Aural Result
Set Flap to 15 Degrees. Slug both the #1 and #2 Locked Prox Switches in the Nose Wheel Well (S854 & S846)	127	0	Horn Sounds

SUBTASK 31-31-00-730-142

(13) Ram Air Door Discrete Test

(a) Make sure that the test results show as follows:

Table 514/31-31-00-993-824

Test Condition	C/B Name	C/B Grid	C/B Number	Position	DFDAU Port	BIT State
RAM DOOR LEFT	PSEU PRI (P6-3)	D1	C01399	CLOSED	131	0
	PSEU PRI (P6-3)	D2	C01400	CLOSED		
	PSEU PRI (P6-3)	D1	C01399	OPEN	131	1
	PSEU PRI (P6-3)	D2	C01400	OPEN		
RAM DOOR RIGHT	PSEU PRI (P6-3)	D1	C01399	CLOSED	132	0
	PSEU PRI (P6-3)	D1	C01400	CLOSED		
	PSEU PRI (P6-3)	D1	C01399	OPEN	132	1
	PSEU PRI (P6-3)	D1	C01400	OPEN		

SUBTASK 31-31-00-730-143

(14) Equipment Cooling Exhaust and Supply Off Discrete Test

(a) Set the Equipment Cooling Switch (P5) to the NORMAL position.

(b) Make sure that the test results show as follows:

Table 515/31-31-00-993-826

TEST Condition	C/B Name	C/B Grid	C/B Number	C/B Position	DFDAU Port	BIT State
EXHAUST OFF	EXHAUST FAN CONTROL NORMAL (P6-4)	C14	C01435	CLOSED	146	1
	EXHAUST FAN CONTROL NORMAL (P6-4)	C14	C01435	OPEN	146	0

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LOM 466-999 (Continued)

Table 515/31-31-00-993-826 (Continued)

TEST Condition	C/B Name	C/B Grid	C/B Number	C/B Position	DFDAU Port	BIT State
SUPPLY OFF	SUPPLY FAN CONTROL NORMAL (P6-4)	C12	C01116	CLOSED	147	1
	SUPPLY FAN CONTROL NORMAL (P6-4)	C12	C01116	OPEN	147	0

SUBTASK 31-31-00-730-144

(15) Door Discrete Test

(a) Make sure that the test results show as follows:

Table 516/31-31-00-993-827

Door Condition	DFDAU Port	BIT State	P5-20 Light
Flight Deck Door Closed	133	1	OFF
Flight Deck Door Open	133	0	ON
FWD Entry Door Closed and Latched	154	1	OFF
FWD Entry Door Unlatched and Open	154	0	ON
AFT Entry Door Closed and Latched	155	1	OFF
AFT Entry Door Unlatched and Open	155	0	ON
FWD Service Door Closed and Latched	156	1	OFF
FWD Service Door Unlatched and Open	156	0	ON
AFT Service Door Closed and Latched	157	1	OFF
AFT Service Door Unlatched and Open	157	0	ON
Left AFT Overwing Door Closed and Latched	158	1	OFF
Left AFT Overwing Door Unlatched and Open	158	0	ON
Right AFT Overwing Door Closed and Latched	159	1	OFF
Right AFT Overwing Door Unlatched and Open	159	0	ON
FWD Cargo Door Closed and Latched	162	1	OFF
FWD Cargo Door Unlatched and Open	163	0	ON
AFT Cargo Door Closed and Latched	163	1	OFF
AFT Cargo Door Unlatched and Open	163	0	ON
FWD Access Door and Elex Access Door Closed and Latched	164	1	OFF

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LOM 466-999 (Continued)

Table 516/31-31-00-993-827 (Continued)

Door Condition	DFDAU Port	BIT State	P5-20 Light
FWD Access Door or Elex Access Door Unlatched and Open	164	0	ON

SUBTASK 31-31-00-865-020

(16) Autobrake Disarm Light Discrete Test

Close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
A	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
A	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

SUBTASK 31-31-00-860-654

(17) Turn the Autobrake Selector Switch to the RTO position on the P2-2 panel.

SUBTASK 31-31-00-710-050

(18) Make sure that the test results show as follows:

Table 517/31-31-00-993-828

Test Condition	DFDAU Port	BIT State	P2-2 Autobrake Disarm Light
Thrust Levers in IDLE position	152	1	OFF
Thrust Levers Fully Advanced	152	0	ON

SUBTASK 31-31-00-860-655

(19) Autoland A and Autoland B Bus Split Discrete Test

(a) Set the TRU meter selector switch, on the P5 overhead panel, to the TR1 position.

SUBTASK 31-31-00-865-023

(20) Open these circuit breakers:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
D	1	C01049	AFCS SYS A WARN LIGHT (BAT)
D	2	C01045	AFCS SYS A FCC DC

Power Distribution Panel Number 1, P91

Row	Col	Number	Name
A	6	C00806	TRU 1

SUBTASK 31-31-00-860-656

(21) Do the steps that follow:

(a) Make sure that the DC VOLTS meter, on the P5 overhead panel, shows 22 to 30 VDC.

(b) Push the INIT/REF key on the left CDU.

NOTE: This test block will use the left CDU for the Maintenance menu discrete test set up and the right CDU ACMS menu for the discrete verification.

(c) Push the INDEX LSK 6L on the L CDU.

(d) Push the MAINT LSK 6R on the L CDU.

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LOM 466-999 (Continued)

(e) Push the DFCS LSK 2L on the L CDU.

(f) Push the EXTENDED MAINTENANCE LSK 4L on the L CDU.

(g) Push the SENSOR VALUES LSK 4L on the L CDU.

(h) Push the DISCRETE OUTPUTS LSK on the L CDU.

(i) Push the DC BUS ISOLATION OUTPUT LSK 3.

(j) Set to Channel B LSK 3L.

SUBTASK 31-31-00-730-147

(22) Make sure that the test results show as follows:

Table 518/31-31-00-993-830

Test Condition	DFDAU Port	BIT State	TRI Meter	Autoland B
DC BUS ISOLATION OUTPUT on Left CDU LSK 3L SELECTED	145	1	-2.0 to +2.0 VDC	Split
DC BUS ISOLATION OUTPUT on Left CDU LSK 3L RE-SELECTED	145	0	22 -30 VDC	Not Split

SUBTASK 31-31-00-860-657

(23) Set the INIT/REF on the FMC-CDU keyboards.

SUBTASK 31-31-00-865-024

(24) Close these circuit breakers:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
D	1	C01049	AFCS SYS A WARN LIGHT (BAT)
D	2	C01045	AFCS SYS A FCC DC

SUBTASK 31-31-00-865-025

(25) Open these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	1	C00374	AFCS SYS B WARN LIGHT (BAT)
B	3	C01046	AFCS SYS B FCC DC

SUBTASK 31-31-00-860-658

(26) Make sure that the DC VOLTS meter P5 shows 22 to 30 VDC.

NOTE: The display change in the subsequent step can take up to 50 seconds to complete.

(a) Make sure that the word F/D in amber does not show on CAPT. PFD.

SUBTASK 31-31-00-860-659

(27) Do the steps that follow:

(a) Push the INIT/REF on the FMC-CDU keyboards.

(b) Push INDEX LSK 6L on the L CDU.

(c) Push MAINT LSK 6R on the L CDU.

(d) Push DFCS LSK 2L on the L CDU.

(e) Push the EXTENDED MAINTENANCE LSK 4L on the L CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

(f) Push the SENSOR VALUES LSK 4L on the L CDU.

(g) Push the DISCRETE OUTPUTS LSK 4L on the L CDU.

(h) Push the DC BUS ISOLATION OUTPUT LSK 3L on the L CDU.

(i) Set to CHANNEL B LSK 2L.

SUBTASK 31-31-00-730-148

(28) Make sure that the test results show as follows:

Table 519/31-31-00-993-831

Test Condition	DFDAU Port	BIT State	TRI Meter	Autoland A
DC BUS ISOLATION OUTPUT on the left CDU LSK 3L SELECTED	144	1	-2.0 to 2.0 VDC	Split
DC BUS ISOLATION OUTPUT on the left CDU LSK 3L RE-SELECTED	144	0	22 to 30 VDC	Not Split

SUBTASK 31-31-00-860-660

(29) Push the INIT/REF on the FMC-CDU keyboards.

SUBTASK 31-31-00-865-026

(30) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	1	C00374	AFCS SYS B WARN LIGHT (BAT)
B	3	C01046	AFCS SYS B FCC DC

Power Distribution Panel Number 1, P91

Row	Col	Number	Name
A	6	C00806	TRU 1

SUBTASK 31-31-00-860-661

(31) Speed Trim Fail Left and Right and Stab out of Trim Left and Right Discrete Test

(32) Do the steps that follow:

(a) Push the INIT/REF key on the left CDU.

NOTE: This test block will use the left CDU for the maintenance menu discrete set up and the right CDU for the ACMS menu discrete verification.

(b) Push the INDEX LSK 6L key on the left CDU.

(c) Push the MAINT LSK 6R key on the left CDU.

SUBTASK 31-31-00-865-027

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
D	1	C01049	AFCS SYS A WARN LIGHT (BAT)
D	2	C01045	AFCS SYS A FCC DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

SUBTASK 31-31-00-865-028

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	3	C01046	AFCS SYS B FCC DC
C	2	C01042	AFCS SYS B SNSR EXC AC

SUBTASK 31-31-00-860-662

(35) Do the steps that follow:

(a) Push the DFCS LSK 2L key on the left CDU.

(b) Push EXTENDED MAINTENANCE LSK 4L key on the left CDU.

(c) Push the BITE LIBRARY TESTS LSK 1L key on the left CDU.

(d) Push the CHANNEL A LSK 2L key on the left CDU.

(e) Push the RUN SELECT LIBRARY TESTS LSK 3L key on the left CDU.

(f) Set the NEXT PAGE on the left CDU to page 2/4.

(g) Push the 32 SPD/STB TRIM LSK 1R key on the left CDU.

(h) Make sure that the * is displayed under library test 32 SPD/STB TRIM 1R.

(i) Push the EXECUTE LSK 6L on the left CDU.

NOTE: Do the initialization procedure as shown on the CDU but keep the AFCS SYS B FCC DC, AFCS SYS B SNSR EXC AC C/Bs open.

(j) Select CONTINUE after completing the instructions on the CDU.

(k) Continue to follow all instructions shown until the IS THE STAB OUT OF TRIM WARNING ON shows on the L CDU.

SUBTASK 31-31-00-730-149

(36) Make sure that the test results show as follows:

Table 520/31-31-00-993-832

Test Condition	DFDAU Port	BIT State
Light is ON and IS THE STAB OUT OF TRIM WARNING ON displayed on the LEFT CDU	125	0

SUBTASK 31-31-00-860-663

(37) Push YES on the left CDU.

NOTE: The STAB OUT OF TRIM FAIL message will show on the left CDU.

SUBTASK 31-31-00-730-150

(38) Make sure that the test results show as follows:

Table 521/31-31-00-993-833

Test Condition	DFDAU Port	BIT State
Light is OFF and IS THE STAB OUT OF TRIM WARNING OFF displayed on Left CDU	125	1

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

SUBTASK 31-31-00-860-664

(39) Push YES on the left CDU.

NOTE: The STAB OUT OF TRIM NOT FAIL will show on the left CDU.

(40) Continue to follow all instructions shown until IS THE SPD TRIM FAIL ANN LIGHT P5-3 PANEL ON shows on the left CDU.

SUBTASK 31-31-00-730-151

(41) Make sure that the test results show as follows:

Table 522/31-31-00-993-834

Test Condition	DFDAU Port	BIT State
Light is ON and IS THE SPD TRIM FAIL ANN LIGHT ON displayed on the Left CDU.	123	1

SUBTASK 31-31-00-860-665

(42) Push YES on the left CDU.

NOTE: The SPEED TRIM FAIL will show on the Left CDU.

SUBTASK 31-31-00-730-152

(43) Make sure that the test results show as follows:

Table 523/31-31-00-993-835

Test Condition	DFDAU Port	BIT State
Light is OFF and IS THE SPD TRIM FAIL ANN LIGHT OFF displayed on the Left CDU	123	0

SUBTASK 31-31-00-860-666

(44) Push YES on the left CDU.

NOTE: The SPEED TRIM NOT FAIL will show on the Left CDU.

SUBTASK 31-31-00-865-029

(45) Open these circuit breakers:

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
D	1	C01049	AFCS SYS A WARN LIGHT (BAT)
D	2	C01045	AFCS SYS A FCC DC

SUBTASK 31-31-00-865-030

(46) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	1	C00374	AFCS SYS B WARN LIGHT (BAT)
B	3	C01046	AFCS SYS B FCC DC

SUBTASK 31-31-00-860-667

(47) Do the steps that follow:

(a) Push the INIT/REF key on the left CDU.

(b) Push the INDEX LSK 6L key on the left CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

(c) Push the MAINT LSK 6R key on the left CDU.

(d) Push the DFCS LSK 2L key on the left CDU.

(e) Push the EXTENDED MAINTENANCE LSK 4L key on the left CDU.

(f) Push BITE LIBRARY TESTS LSK 1L key on the left CDU.

(g) Push the CHANNEL B LSK 3L key on the left CDU.

(h) Push the RUN SELECT LIBRARY TESTS LSK 3L key on the left CDU.

(i) Set NEXT PAGE on the left CDU to page 2/4.

(j) Push the 32 SPD/STB TRIM LSK 1R key on the left CDU.

(k) Push EXECUTE LSK 6L.

NOTE: Do the initialization procedure as shown on the CDU but keep the AFS SYS B FCC DC, AFCS SYS B SNSR EXC AC C/Bs open.

(l) Select CONTINUE after completing the instructions on the CDU.

(m) Follow all the instructions on the display until IS THE STAB OUT OF TRIM WARNING ON shows on the left CDU.

SUBTASK 31-31-00-730-153

(48) Make sure that the test results show as follows:

Table 524/31-31-00-993-836

Test Condition	DFDAU Port	BIT State
Light is ON and IS THE STAB OUT OF TRIM WARNING ON displayed on the left CDU	124	0

SUBTASK 31-31-00-860-668

(49) Push YES on the left CDU.

NOTE: The STAB OUT OF TRIM FAIL will show on the left CDU.

SUBTASK 31-31-00-730-154

(50) Make sure that the test results show as follows:

Table 525/31-31-00-993-837

Test Condition	DFDAU Port	BIT State
Light is OFF and IS THE STAB OUR OF TRIM WARNING OFF displayed on the left CDU	124	1

SUBTASK 31-31-00-860-669

(51) Push YES on the left CDU.

NOTE: The STAB OUT OF TRIM NOT FAIL will show on the left CDU.

(52) Continue to follow all instructions shown until IS THE SPD TRIM FAIL ANN LIGHT P5-3 PANEL ON shows on the left CDU.

SUBTASK 31-31-00-730-155

(53) Make sure that the test results show as follows:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 466-999 (Continued)

Table 526/31-31-00-993-838

Test Condition	DFDAU Port	BIT State
Light is ON and IS THE SPD TRIM FAIL ANN LIGHT ON displayed on the left CDU.	126	1

SUBTASK 31-31-00-860-670

(54) Push YES on the left CDU.

NOTE: The SPEED TRIM FAIL will show on the left CDU.

SUBTASK 31-31-00-730-156

(55) Make sure that the test results show as follows:

Table 527/31-31-00-993-839

Test Condition	DFDAU Port	BIT State
Light is OFF and IS THE SPD TRIM FAIL ANN LIGHT OFF displayed on the left CDU.	126	0

SUBTASK 31-31-00-860-671

(56) Push YES on the left CDU.

NOTE: The SPEED TRIM NOT FAIL will show on the left CDU.

SUBTASK 31-31-00-865-031

(57) Close these circuit breakers:

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	1	C00374	AFCS SYS B WARN LIGHT (BAT)
B	3	C01046	AFCS SYS B FCC DC

Power Distribution Panel Number 1, P91

Row	Col	Number	Name
A	6	C00806	TRU 1

LOM ALL

BQ. Put the Airplane Back to Its Initial Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-00-700-030

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-00-840-002

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-00-860-314

(3) Remove power from the tester.

SUBTASK 31-31-00-860-315

(4) Disconnect the tester.

SUBTASK 31-31-00-420-018

(5) Install the shorting plug on the system test plug on the P18 panel.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

UNDERWATER LOCATOR BEACON - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

(1) A removal of the Underwater Locator Beacon (ULB)

(2) A replacement of the ULB battery

(3) A test of the ULB

(4) An installation of the ULB.

B. The ULB is attached to the front of the flight data recorder. The flight data recorder is above the ceiling panel station 947.

TASK 31-31-09-000-801

2. Underwater Locator Beacon Removal

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The Underwater Locator Beacon (ULB) has a battery as the power source. The ULB has no external electrical connections.

B. References

Reference	Title
31-31-11-000-802	Flight Data Recorder Removal (P/B 401)

C. Tools/Equipment

Reference	Description
STD-1048	Stepladder - 6 foot (1.83m)

D. Location Zones

Zone	Area
140	Subzone - Body Station 727.00 to Body Station 1016.00
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

E. Underwater Locator Beacon Removal

SUBTASK 31-31-09-010-002

(1) To get access to the flight data recorder [2] in the aft passenger compartment, open the lowered ceiling panel [9].

SUBTASK 31-31-09-010-003

(2) Use a 6 foot (1.83m) stepladder, STD-1048, to access the flight data recorder [2].

SUBTASK 31-31-09-020-001

(3) Do this task: Flight Data Recorder Removal, TASK 31-31-11-000-802.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465

SUBTASK 31-31-09-020-011

(4) Do these steps to remove the ULB [4] from the solid state flight data recorder [2]:

(a) Loosen the screws [3] that hold the ULB [4] on the flight data recorder [2].

(b) Remove the ULB [4].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999

SUBTASK 31-31-09-020-007

(5) Do these steps to remove the ULB [4] from the solid state flight data recorder [2]:

(a) Remove the screws [1] from the left beacon mount bracket [5].

1) If the new 30-day ULB [4] will be installed, it is recommended to discard the screws [1].

2) If the new 90-day ULB [4] will be installed, it is recommended to discard the screws [1].

3) If the new 90-day ULB [4] is replacing 30-day ULB [4], discard the screws [1].

(b) Loosen the lower screws [1] on the right beacon mount bracket [5].

(c) Remove the ULB [4] from the beacon mount bracket [5].

(d) Keep the two screws [1] and left beacon mount bracket [5].

LOM ALL

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Underwater Locator Beacon Installation
Figure 201/31-31-09-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER
(EXAMPLE)

B

UNDERWATER LOCATOR BEACON
(EXAMPLE)

C

F69975 S0006574379_V4

Underwater Locator Beacon Installation
Figure 201/31-31-09-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER
(EXAMPLE)

B

UNDERWATER LOCATOR BEACON
(EXAMPLE)

C

2923608 S0000705242_V1

Underwater Locator Beacon Installation
Figure 201/31-31-09-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER
(EXAMPLE)

B

UNDERWATER LOCATOR BEACON
(EXAMPLE)

C

2923608 S0000705242_V1

Underwater Locator Beacon Installation
Figure 201/31-31-09-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER

B

UNDERWATER LOCATOR BEACON

C

H45991 S0006574381_V3

Underwater Locator Beacon Installation
Figure 201/31-31-09-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-960-801

3. Dukane Underwater Locator Beacon Battery - Replacement

(Figure 202 or Figure 203)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This procedure contains the steps to replace the Dukane ULB battery.

B. Tools/Equipment

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

Reference	Description
COM-1619	Wrench - Spanner, Underwater Locator Beacon Part #: 810-2007/KVS Supplier: 94970 Part #: 810-325 Supplier: 94970 Part #: B362-09111 Supplier: 61257 Opt Part #: 008407 Supplier: 26858 Opt Part #: B362-04180A Supplier: 26858
COM-1793	Multimeter - Digital/Analog (or equivalent meter meets task requirements) Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 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 #: 27 Supplier: 89536 Opt Part #: 77 SERIES III Supplier: 89536 Opt Part #: 87 Supplier: 89536 Opt Part #: FLUKE 27 Supplier: 89536 Opt Part #: MODEL 27 Supplier: 89536
COM-15071	Wrench - Spanner Part #: 810-325 Supplier: 94970 Part #: 9809800007 Supplier: 06141
COM-15496	Clamp - Vise Part #: 810-546 Supplier: 94970 Part #: 9809800002 Supplier: 06141
STD-1066	Hose - Radiator, Split, 1-1/4 Inch Diameter, 5 Inch Length

C. Consumable Materials

Reference	Description	Specification
D50082	Lubricant - 810-346	
G02440	Battery - Lithium Battery	MIL-I-45208A
G50275	O-ring	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Dukane Underwater Locator Beacon Battery Removal

SUBTASK 31-31-09-800-005

> **WARNING**
> DO NOT REMOVE THE BATTERY FROM THE DK100/DK130 ULB. DO NOT CAUSE DAMAGE TO THE DK100/DK130 ULB. DO NOT DISCARD THE DK100/DK130 ULB. THE MANUFACTURER HAS A REPLACEMENT PROGRAM FOR EXPIRED ULBS. ON OR BEFORE THE EXPIRED DATE, SEND THE DK100/DK130 ULB TO THE MANUFACTURER FOR SERVICING. THE BATTERY CONTAINS DANGEROUS CHEMICAL MATERIALS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(1) If you have a DK100/DK130 ULB [4], send it to the manufacturer for servicing.

SUBTASK 31-31-09-020-012

(2) If you do not have a DK100/DK130 ULB [4], remove the battery [28], as follows:

> **CAUTION**
> DO NOT HOLD THE UNDERWATER LOCATOR BEACON IN A VISE. THIS CAN CAUSE DAMAGE TO THE BEACON BODY.

(a) Hold the ULB [4] body with a radiator hose - 1-1/4 Inch Diameter, 5 Inch Length, STD-1066, or vise clamp, COM-15496.

(b) Use the wrench, COM-1619, or spanner wrench, COM-15071, to remove the end cap [25] that is identified BATTERY ACCESS.

(c) Remove the rubber shock cushion [27] from the battery end if it is not removed with the end cap [25].

(d) Remove and discard the o-ring [26] from the end cap [25].

(e) Hit the ULB [4] lightly to remove the battery [28].

E. Dukane Underwater Locator Beacon Battery Installation

SUBTASK 31-31-09-420-010

(1) Make sure that the new battery is the same as the battery code on the Underwater Locator Beacon (ULB) label, see the table below.

NOTE: It is necessary to replace the removed Battery Code C with a new Battery Code C. Battery Codes B and D are interchangeable.

NOTE: It is necessary to replace the removed Battery Code F with a new Battery Code F.

Table 201/31-31-09-993-802

BATTERY CODE	REQUIRED BATTERY KIT
B	810-2007/K
C	810-2008/K
D	810-2007/K
F	810-2042/K

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(2) Install the ULB battery [28] (battery, G02440).

NOTE: The Dukane 810-2007/K, 810-2008/K are 6 year lithium batteries used in the Dukane models DK120 and DK140 ULB.

NOTE: The 810-2042/K are 7 year lithium batteries used in the Dukane model DK120-90 ULB.

NOTE: Battery, o-ring and lubricant are provided in battery replacement kit.

(a) Put a new battery replacement label [23] on the ULB [4] body.

(b) On the date label, write the next scheduled replacement date for the new ULB battery [28] that you installed.

NOTE: The date label is blank so you can write in a replacement date based on your maintenance schedule.

CAUTION REMOVE ALL OF THE CONTAMINATION FROM THE THREADS AND THE O-RING GROOVES. CONTAMINATION CAN CAUSE DAMAGE TO THE THREADS. THREAD DAMAGE CAN CAUSE LEAKS.

(c) Clean the threads and the o-ring contact area in the ULB [4] body.

CAUTION MAKE SURE THE POLARITY IS CORRECT. INCORRECT POLARITY CAN CAUSE PERMANENT DAMAGE TO THE BEACON.

(d) Put the new battery [28] (battery, G02440) in the ULB [4] with the end identified INSERT THIS END in first.

(e) Do these steps to test the beacon off-current:

1) Put the positive probe of a digital/analog multimeter, COM-1793, on the positive end of the battery [28].

2) Put the negative probe on the outer surface of the ULB [4].

3) Make sure that the multimeter shows an electrical current of 3 microamperes or less.

a) If the current is more than 3 microamperes, then replace the ULB [4].

(f) Remove and discard the used o-ring [26] from the end cap [25].

CAUTION REMOVE ALL OF THE CONTAMINATION FROM THE THREADS AND THE O-RING GROOVES. CONTAMINATION CAN CAUSE DAMAGE TO THE THREADS. THREAD DAMAGE CAN CAUSE LEAKS.

(g) Clean the threads and the o-ring groove in the end cap [25].

(h) Apply a thin layer of lubricant, D50082, to the new o-ring [26] (O-ring, G50275), o-ring groove, and threads.

(i) Install the new o-ring [26] (O-ring, G50275), on the end cap [25].

(j) Put the rubber shock cushion [27] smoothly on the end cap [25].

(k) Put the end cap [25] into the ULB [4] body.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(l) Use a wrench, COM-1619, or spanner wrench, COM-15071, to tighten the end cap [25] until the cap flange touches the ULB [4] body.

1) Use only hand force on the wrench.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E11040 S0006417281_V2

Underwater Locator Beacon Battery Replacement
Figure 202/31-31-09-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2279078 S0000514233_V2

Beacon Off-Current Test
Figure 203/31-31-09-990-804

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-960-802

4. Teledyne Benthos Underwater Locator Beacon Battery - Replacement
(Figure 204)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This procedure contains the steps to replace the Teledyne Benthos ULB battery.

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-1793	Multimeter - Digital/Analog (or equivalent meter meets task requirements) Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 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 #: 27 Supplier: 89536 Opt Part #: 77 SERIES III Supplier: 89536 Opt Part #: 87 Supplier: 89536 Opt Part #: FLUKE 27 Supplier: 89536 Opt Part #: MODEL 27 Supplier: 89536
COM-2543	Torque - Adapter, Used on Underwater Locator Beacon Part #: B362-09111 Supplier: 61257 Opt Part #: 008407 Supplier: 26858 Opt Part #: B362-04180A Supplier: 26858
STD-1066	Hose - Radiator, Split, 1-1/4 Inch Diameter, 5 Inch Length

C. Consumable Materials

Reference	Description	Specification
D50082	Lubricant - 810-346	
G50272	Battery - Teledyne Benthos (P/N C362-04270-2)	
G50273	O-ring - Lubricated, Teledyne Benthos (P/N 2-022)	

D. Prepare for the Removal

SUBTASK 31-31-09-860-001

(1) Measure the battery voltage of the ELP-362D ULB [4]. Use a high-impedance digital voltmeter with a minimum input impedance of 10 Megohms.

(a) Put the negative meter lead on the water switch.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Put the positive meter lead on the bare aluminum surface of the beacon housing.

(c) Read the voltmeter.

E. Removal Procedure

SUBTASK 31-31-09-800-002

(1) If the measured voltage is less than 6.0 Volts, send the ELP-362D ULB [4] to the manufacturer for servicing.

SUBTASK 31-31-09-020-006

(2) If the measured voltage is 6.0 Volts or more, remove the battery, G50272 [28] from the ELP-362D ULB [4]:

> **CAUTION** DO NOT HOLD THE ULB WITH A VISE. THIS CAN CAUSE DAMAGE TO THE ULB.

(a) Hold the ULB [4] body with a radiator hose - 1-1/4 Inch Diameter, 5 Inch Length, STD-1066.

(b) Use the underwater locator beacon torque adapter, COM-2543 to remove the end-cap [25] identified as “BATTERY ACCESS”.

(c) Turn the housing up to remove the battery from the unit.

(d) Discard the battery [28].

NOTE: Refer to local instructions when you discard the battery [28].

F. Installation Procedure

SUBTASK 31-31-09-420-002

(1) Install the ULB battery, G50272 [28]:

(a) Set the battery [28] until the arrow points to the top end of the unit.

NOTE: The battery label has an arrow mark.

(b) On the date label [23], write the next scheduled replacement date for the new ULB battery that you installed.

NOTE: The date label [23] is blank so you can write in a replacement date based on your maintenance schedule.

> **CAUTION** REMOVE ALL OF THE CONTAMINATION FROM THE THREADS AND THE O-RING GROOVES. CONTAMINATION CAN CAUSE DAMAGE TO THE THREADS. THREAD DAMAGE CAN CAUSE LEAKS.

(c) Clean the threads and the O-ring contact area in the ULB [4] body.

> **CAUTION** INSTALL THE ULB BATTERY [28] CORRECTLY. INCORRECT POLARITY WILL CAUSE PERMANENT DAMAGE TO THE ULB.

(d) Put the new battery, G50272 [28] in the ULB [4] with the end identified INSERT THIS END in first.

(e) Do these steps to test the beacon off-current:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Put the positive probe of a digital/analog multimeter, COM-1793 on the positive end of the battery [28].
2) Put the negative probe on the outer surface of the ULB [4].
3) Make sure that the multimeter shows an electrical current of 3 microamperes or less.
4) If the current is more than 3 microamperes, then replace the ULB [4].

(f) Remove and discard the O-ring [26] from its groove in the end-cap [25].

CAUTION REMOVE ALL OF THE CONTAMINATION FROM THE THREADS AND THE O-RING GROOVES. CONTAMINATION CAN CAUSE DAMAGE TO THE THREADS. THREAD DAMAGE CAN CAUSE LEAKS.

(g) Clean the threads and the O-ring groove in the end cap.

NOTE: Lubricant and O-ring are supplied in the battery replacement kit.

(h) Apply a thin layer of lubricant, D50082 to the new O-ring, G50273 [26], O-ring groove, and threads.

(i) Put the lubricated O-ring, G50273 [26] in the end-cap groove.

(j) Attach the end-cap [25] to the housing.

(k) Use the underwater locator beacon torque adapter, COM-2543 to install the end-cap [25] tightly.

NOTE: Only use hand force on the underwater locator beacon torque adapter, COM-2543.

(l) Torque the end-cap [25] to 25 to 30 inch pounds.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1578730 S0000296580_V1

Underwater Locator Beacon Battery Replacement
Figure 204/31-31-09-990-803

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-960-805

5. L-3 Underwater Locator Beacon Battery - Replacement

(Figure 205)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) This task contains the steps to replace the L-3 Underwater Locator Beacon (ULB) battery.

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-15071	Wrench - Spanner Part #: 810-325 Supplier: 94970 Part #: 9809800007 Supplier: 06141
COM-15496	Clamp - Vise Part #: 810-546 Supplier: 94970 Part #: 9809800002 Supplier: 06141

C. Consumable Materials

Reference	Description	Specification
D50082	Lubricant - 810-346	
G02440	Battery - Lithium Battery	MIL-I-45208A
G50275	O-ring	

D. L-3 Underwater Locator Beacon Battery Removal

SUBTASK 31-31-09-020-009

> **CAUTION** REMOVE ALL OF THE CONTAMINATION FROM THE THREADS AND THE O-RING GROOVES. CONTAMINATION CAN CAUSE DAMAGE TO THE THREADS. THREAD DAMAGE CAN CAUSE LEAKS.

(1) Remove the battery [28] from the L-3 ULB [4].

(a) Secure the L-3 ULB [4] with the vise clamp, COM-15496.

> **CAUTION** DO NOT GET DIRT OR UNWANTED MATERIALS NEAR THE O-RING. DAMAGE TO THE O-RING AND THREADS CAN CAUSE DAMAGE TO THE UNDERWATER LOCATOR BEACON.

(b) Use the spanner wrench, COM-15071, to remove the battery end cap [25] with two wrench holes by unscrewing counterclockwise.

NOTE: The breakaway torque is usually high, so the spanner wrench should be held firmly in contact with the battery end cap [25] in order to prevent damage to wrench holes.

(c) Remove the rubber shock cushion [27] from the battery end if it is not removed with the battery end cap [25].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAUTION DO NOT USE A STEEL SCREWDRIVER OR SHARP TOOL. THIS WILL PREVENT DAMAGE TO THE O-RING GROOVE.

(d) Remove the o-ring [26] from the battery end cap [25].

(e) Remove the battery [28].

SUBTASK 31-31-09-211-001

(2) Make sure that the rubber shock cushion [27] remains in the battery end cap [25].

E. L-3 Underwater Locator Beacon Battery Installation

SUBTASK 31-31-09-210-001

CAUTION DO NOT INSTALL A BATTERY OTHER THAN THAT FROM THE BATTERY REPLACEMENT KIT. IF YOU DO NOT FOLLOW THIS CAUTION, IT CAN CAUSE DAMAGE.

CAUTION DO NOT INSTALL A 90-DAY BATTERY IN A 30-DAY BEACON OR A 30-DAY BATTERY IN A 90-DAY BEACON. IF YOU DO, IT CAN CAUSE DAMAGE.

(1) Make sure that the new battery [28] is the same as the battery on the battery replacement label [23] (Table 202).

Table 202/31-31-09-993-801 Beacon Battery Replacement Kits

Description	Kit Part Number
30-Day Battery	147E030500
90–Day Battery	147E554200

SUBTASK 31-31-09-400-001

CAUTION MAKE SURE THAT YOU INSTALL THE BATTERY CORRECTLY. INCORRECT INSTALLATION OF THE BATTERY WILL CAUSE PERMANENT DAMAGE TO THE BEACON.

CAUTION DO NOT CLAMP THE BEACON IN A VISE, UNLESS YOU USE VISE CLAMP COM-15496. IF YOU DO NOT, IT CAN CAUSE DAMAGE.

CAUTION REMOVE ALL OF THE CONTAMINATION FROM THE THREADS AND THE O-RING GROOVES. CONTAMINATION CAN CAUSE DAMAGE TO THE THREADS. THREAD DAMAGE CAN CAUSE LEAKS.

(2) Install the L-3 ULB [4] battery [28] (battery, G02440).

(a) Apply a thin coating of lubricant, D50082, to the new o-ring [26] (O-ring, G50275), o-ring groove, and threads on the battery end cap [25].

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(b) Carefully install the new o-ring [26] on the battery end cap [25].

(c) Install the new battery [28] (battery, G02440).

1) Make sure that the end marked “INSERT THIS END FIRST” goes in first.

(d) Do this task: L-3 Underwater Locator Beacon Off-Current Test, TASK 31-31-09-700-807.

(e) Position rubber shock cushion [27] around contact spring and on the inside of the battery end cap [25].

(f) Install the battery end cap [25] and tighten it until the cover flange contacts the body or leaves less than a 0.003 in. (0.076 mm) gap.

1) Hold the L-3 ULB [4] in the vise clamp, COM-15496.

2) Use only hand force to tighten.

(g) Clean the L-3 ULB [4] exterior of excess lubricant.

(h) Replace the battery replacement label [23] on the outside of the L-3 ULB [4] case with the new label that is supplied with the battery.

1) Locate the battery replacement label [23] on the L-3 ULB [4] body in the space provided.

NOTE: Never put label on the water switch end of the beacon.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Underwater Locator Beacon Battery Replacement
Figure 205/31-31-09-990-805

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-700-805

6. Underwater Locator Beacon Test with a 42A12 Test Set

A. Tools/Equipment

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

Reference	Description
COM-10768	Test Set - 42A12, Underwater Locator Beacon (ULB) Opt Part #: 42A12-1 Supplier: 94970

B. Procedure

SUBTASK 31-31-09-700-007

(1) If you have a 42A12 ULB Test Set, COM-10768, do this test of the ULB:

NOTE: 42A12 can do a test for all ULBs.

(a) Put the 42A12 ULB Test Set, COM-10768 as close as possible to the ULB.

(b) Set the GAIN control switch on the 42A12 ULB Test Set, COM-10768 to the maximum clockwise position.

NOTE: A background noise is heard. If you do not hear noise from the test set, replace the test set battery.

(c) Set the TUNING control switch to the middle position.

(d) Make sure that the 42A12 ULB Test Set, COM-10768 operates correctly.

1) Rub your thumb and fingers together in front of the microphone to make sure that it operates.

NOTE: This will produce a rushing noise from the speaker.

a) Make sure that you hear sounds through the speaker.

(e) Use tape to attach a piece of wire, a shorting tab, or other conductive material to the ULB case and to the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB.

(f) Set the GAIN control switch to a comfortable listening level.

(g) Point the microphone of the test set towards the water switch end of the beacon for best results.

1) Make sure you hear a pulse tone.

(h) Remove the wire, shorting tab, or other conducting material from the ULB case and the center of the water switch.

(i) Set the GAIN control switch to the OFF position.

(j) Make sure that the water switch on the ULB has no grease or dirt.

(k) If necessary, do the steps that follow:

1) Clean the switch with water and detergent.

2) Dry the switch with a clean cloth.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-700-806

7. Underwater Locator Beacon Test with a PL1 Test Set

A. Tools/Equipment

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

Reference	Description
COM-10771	Test Set - PL1, Underwater Locator Beacon (ULB) Opt Part #: PL1 Supplier: 94970

B. Consumable Materials

Reference	Description	Specification
G00270	Tape - Scotch Flatback Masking 250	ASTM D6123 (Supersedes A-A-883)

C. Procedure

SUBTASK 31-31-09-700-006

(1) If you have a PL1 ULB test set, COM-10771, do this test of the ULB:

NOTE: PL1 can only do a test for the DK100 ULB.

(a) Use Scotch Flatback Masking Tape 250, G00270 to attach a piece of wire or other conductive material to the ULB case and the center of the water switch.

NOTE: This will make a short circuit from the center of the water switch to the outer part of the ULB.

(b) Put the end of the PL1 ULB test set, COM-10771 against the ULB, approximately one inch from the water switch.

(c) Push and hold the operation switch on the PL1 ULB test set, COM-10771.

1) Make sure that the BEACON ACTIVE WHEN FLASHING light flashes.

2) Remove the piece of wire or other conductive material from the ULB case and the center of the water switch.

3) Make sure that the BEACON ACTIVE WHEN FLASHING light does not flash.

(d) Release the operation switch on the PL1 ULB test set, COM-10771.

(e) Remove the PL1 ULB test set, COM-10771.

(f) Make sure that the water switch end of the ULB has no grease or dirt.

(g) If necessary, do the steps that follow:

1) Clean the switch with water and detergent.

2) Dry the switch with a clean cloth.

END OF TASK

TASK 31-31-09-700-801

8. Underwater Locator Beacon Test with a PL3 Test Set

A. Tools/Equipment

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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Reference	Description
COM-10772	Test Set - PL3, Underwater Locator Beacon (ULB) Opt Part #: PL3 Supplier: 94970

B. Procedure

SUBTASK 31-31-09-720-003

(1) If you have a PL3 ULB test set, COM-10772, do this test of the ULB [4]:

NOTE: PL3 can only do a test for the DK100 and DK120 ULBs.

(a) Put the end of the PL3 ULB test set, COM-10772 against the water switch of the ULB [4].

1) Make sure that you hear a tone.

2) Make sure that the LED light flashes.

(b) Remove the PL3 ULB test set, COM-10772.

(c) Make sure that the water switch on theULB [4] has no grease or dirt.

(d) If necessary, do these steps:

1) Clean the switch with water and detergent.

2) Dry the switch with a clean cloth.

——— END OF TASK ———

TASK 31-31-09-700-802

9. Underwater Locator Beacon Test with a ATS-260 Test Set

A. Tools/Equipment

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

Reference	Description
COM-978	Test Set - ATS-260, Underwater Locator Beacon (ULB) Part #: ATS-260 Supplier: 1MXA1

B. Procedure

SUBTASK 31-31-09-720-004

(1) If you have an ATS-260 ULB test set, COM-978, do this test of the ULB [4]:

NOTE: ATS-260 can only do a test for the ELP-362D ULB.

(a) Put the ATS-260 ULB test set, COM-978 clip on the ULB [4].

(b) Push and hold the PUSH TO TEST button.

(c) Put the ATS-260 ULB test set, COM-978 probe on the ULB water switch.

1) Make sure that a green LED shows.

2) Make sure that you can hear sounds from the ATS-260 ULB test set, COM-978.

3) Make sure that the amber LED flashes.

(d) Release the PUSH TO TEST button.

(e) Remove the ATS-260 ULB test set, COM-978.

(f) Make sure that the water switch on the ULB has no grease or dirt.

(g) If necessary, do these steps:

1) Clean the switch with water and detergent.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Dry the switch with a clean cloth.

——— END OF TASK ———

TASK 31-31-09-700-803

10. Underwater Locator Beacon Test with a Seacom TS100 Test Set

A. Tools/Equipment

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

Reference	Description
COM-10769	Test Set - TS100, Underwater Locator Beacon (ULB) Opt Part #: TS100 Supplier: 94970

B. Procedure

SUBTASK 31-31-09-720-005

(1) If you have a TS100 ULB test set, COM-10769, do this test of the ULB [4]:

NOTE: TS100 can only do a test for the DK100 and DK120 ULBs.

(a) Connect the probe head of the TS100 ULB test set, COM-10769 to the ULB [6] in its mount.

(b) Slide the switch on the side of the test set housing to ON.

1) Make sure that the LCD display shows “TESTING”.

(c) Press the button in the center of the test set to start a retest.

1) Make sure that the LCD display shows “TESTING”.

(d) Within a few seconds, the LCD will change to show one of the following Pass / Fault messages:

LCD Message	Explanation
Beacon Passed	Beacon is operating properly.
Battery Fault	Beacon is NOT operating properly.
No Pulse Output	Beacon is NOT operating properly.
Pulse Fault	Beacon is NOT operating properly.
Free-Run Fault	Beacon is NOT operating properly.
Test Set Fault	Test Set batteries must be replaced.
Need Service	Beacon is NOT operating properly.
Open Probe/Batt.	Probe head is not properly attached or the beacon battery is dead.

(e) Make sure that the LCD shows “Beacon Passed”.

NOTE: THE PASS / FAULT MESSAGE WILL BE DISPLAYED FOR APPROXIMATELY 10 SECONDS BEFORE RETURNING TO “READY FOR TEST”.

(f) Remove the TS100 ULB test set, COM-10769.

(g) Make sure that the water switch end of the ULB [4] has no grease or dirt.

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1) If necessary, clean the water switch with a weak general purpose household detergent cleaner.

——— END OF TASK ———

TASK 31-31-09-700-804

11. Underwater Locator Beacon Test with a TS200 Test Set

A. Tools/Equipment

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

Reference	Description
COM-10770	Test Set - TS200, Underwater Locator Beacon (ULB) Opt Part #: TS200 Supplier: 94970

B. Underwater Locator Beacon Test with a TS200 Test Set

SUBTASK 31-31-09-720-008

(1) If you have a TS200 ULB test set, COM-10770, do this test of the Underwater Locator Beacon (ULB):

NOTE: TS200 can do a test for all Dukane ULBs.

(a) Attach the test probe clip of the TS200 ULB test set, COM-10770, to the beacon in its mount.

(b) Put the tip of the probe on the silver pad of the water switch at the end of the beacon.

1) The LCD display will show the battery voltage of the beacon.

(c) Refer to the applicable battery code for the minimum permitted range of the beacon battery voltage:

NOTE: Examine the battery replacement label to find the battery code.

1) Code A – 3.55 Volts
2) Code B – 2.97 Volts
3) Code C – 2.97 Volts
4) Code D – 2.97 Volts
5) Code F – 2.97 Volts

LOM ALL; AIRPLANES WITH UNDERWATER LOCATOR BEACON PART NUMBER 266-E5542-00

6) Without battery code – 2.97 Volts.

LOM ALL

(d) Push the red button on the TS200 ULB test set, COM-10770.

1) The beacon starts and you hear a pinging noise from the TS200 ULB test set, COM-10770.

(e) Remove the test probe clip of the TS200 ULB test set, COM-10770.

(f) If it is necessary, replace the ULB.

(g) Make sure that the water switch end of the ULB has no grease or dirt.

(h) If it is necessary, do the steps that follow:

1) Clean the switch with water and detergent.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Dry the switch with a clean cloth.

——— END OF TASK ———

TASK 31-31-09-700-807

12. L-3 Underwater Locator Beacon Off-Current Test

(Figure 206)

A. General

(1) This test should be performed on a new battery every 6-years, immediately prior to installing in the beacon to ensure maximum power.

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-1793	Multimeter - Digital/Analog (or equivalent meter meets task requirements) Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 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 #: 27 Supplier: 89536 Opt Part #: 77 SERIES III Supplier: 89536 Opt Part #: 87 Supplier: 89536 Opt Part #: FLUKE 27 Supplier: 89536 Opt Part #: MODEL 27 Supplier: 89536

C. Procedure

SUBTASK 31-31-09-700-008

CAUTION

BEACONS WITH GREATER THAN 3−MICROAMPERES OFF CURRENT SHOULD BE TAKEN OUT OF SERVICE IMMEDIATELY.

(1) Do these steps to test the L-3 ULB [4] off-current:

(a) Put the positive probe of the digital/analog multimeter, COM-1793 on the positive end of the battery [28].

(b) Put the negative probe on the outer surface of the L-3 ULB [4].

(c) Make sure that the digital/analog multimeter, COM-1793 shows an electrical current of 3 microamperes or less.

1) If the current is more than 3 microamperes, replace the L-3 ULB [4] (L-3 Underwater Locator Beacon Battery - Replacement, TASK 31-31-09-960-805).

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Beacon Off-Current Test
Figure 206/31-31-09-990-806

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-700-808

13. L-3 Underwater Locator Beacon Operational Test with 17TES0015 Test Set

A. General

(1) The L-3AR underwater locator beacon test set, COM-15070 is a battery operated heterodyne type receiver that operates at an ultrasonic frequency of 37.5 kHz.

(2) The Test Set is a self-contained, hand held functional tester for the L-3AR Underwater Locator Beacon.

(3) Use the internal microphone and loudspeaker to perform an operational test on a beacon without removing it from the recorder's Cabin System Management Unit (CSMU) mount.

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-15070	Test Set - 17TES0015, Underwater Locator Beacon (ULB) Part #: 17TES0015 Supplier: 06141

C. Procedure

SUBTASK 31-31-09-700-010

(1) Test the beacon battery voltage:

NOTE: This test should be performed after the beacon battery has been installed on the recorders CSMU. It verifies the proper operation of the beacon after mounting on the recorder's CSMU.

(a) Turn the underwater locator beacon test set, COM-15070 ON using the small slide switch located on the left side of the housing.

(b) If the display reads LB, the test set battery voltage has fallen below the level required for operation, and the 9 Volt battery should be replaced.

(c) To test the beacon battery voltage, attach the test probe clip to the beacon case. The clip has a spring action that will allow it to slip over the housing on the beacon.

(d) Put the tip of the probe in contact with the metal pad at the center of the water switch.

(e) Read the battery voltage from the test set display.

1) If the battery voltage is below 2.97 Volts, replace the beacon (L-3 Underwater Locator Beacon Battery - Replacement, TASK 31-31-09-960-805).

SUBTASK 31-31-09-700-011

(2) Test the beacon operation:

NOTE: This test should be performed after the beacon is installed on the recorder's CSMU. It verifies the proper operation of the beacon after mounting on the CSMU.

(a) Attach the test probe clip to the beacon case. The clip has a spring action that will allow it to slip over the housing on the beacon.

(b) Place the tip of the probe in contact with the metal pad at the center of the water switch.

(c) Press and hold the red button on the test set.

NOTE: The test set display will be blank during this operation.

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(d) If the beacon is operating properly, a pinging sound will be audible from the test set speakers.

NOTE: High levels of background noise can interfere with this test.

(e) If difficulty is experienced, this test should be repeated in a quieter environment.

(f) Turn off the underwater locator beacon test set, COM-15070, and remove the beacon from the test probe clip.

(g) If required, record the beacon's serial number and expiration date on the appropriate recorder data record.

——— END OF TASK ———

TASK 31-31-09-400-801

14. Underwater Locator Beacon Installation

(Figure 201)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
31-31-11-400-802	Flight Data Recorder Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
A00270	Compound - Threadlocking, Low-strength - Loctite 222	
B00541	Cleaner - General Purpose Household Detergent	

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Screw	31-31-09-01A-010	LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999
4	ULB	31-31-09-01-095	LOM 404, 416
		31-31-09-01A-015	LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999
		31-31-11-07-075	LOM 404, 416
		31-31-11-07-120	LOM 404, 416
		31-31-11-50-090	LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463

D. Location Zones

Zone	Area
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

E. Underwater Locator Beacon Installation

LOM 402, 406, 407, 411, 412, 415, 420, 422-426, 432-434, 437-442, 445-447, 450, 453-460, 464, 465

SUBTASK 31-31-09-420-004

(1) Do these steps to install the ULB [4] on the solid state flight data recorder [2]:

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(a) Make sure that the water switch end of the ULB [4] has no grease or dirt.

(b) Clean the water switch on the ULB [4] with a weak general purpose household detergent cleaner, B00541.

(c) Put the ULB [4] in the cradle on the flight data recorder [2].

(d) Make sure that you can read the replacement date on the ULB [4].

(e) Tighten the screws [3] that hold the ULB [4] to 23 ±3 in-lb (2.6 ±0.3 N·m).

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999

SUBTASK 31-31-09-420-007

(2) Do these steps to install the ULB [4] on the solid state flight data recorder [2]:

(a) Make sure that the water switch end of the ULB [4] has no grease or dirt.

(b) Clean the water switch on the ULB [4] with a weak general purpose household detergent cleaner, B00541.

(c) Put the ULB [4] into the right beacon mount bracket [5].

(d) Make sure that you can read the replacement date on the ULB [4].

(e) Apply Loctite 222 compound, A00270, to the threads of the two removed screws [1].

1) If the new 30-day ULB [4] is installed, it is recommended to use the new screws [1].

2) If the new 90-day ULB [4] is installed, it is recommended to use the new screws [1].

3) If the new 90-day ULB [4] is replaced to 30-day ULB [4], use the new screws [1].

(f) Use the two screws [1] to attach the left beacon mount bracket [5] to the end of the ULB [4].

(g) Tighten all four screws [1] on the beacon mount brackets [5] to 75 in-lb (8 N·m).

LOM ALL

SUBTASK 31-31-09-700-004

(3) Do one of these tasks to test the ULB:

Underwater Locator Beacon Test with a 42A12 Test Set, TASK 31-31-09-700-805 or Underwater Locator Beacon Test with a PL1 Test Set, TASK 31-31-09-700-806 or Underwater Locator Beacon Test with a ATS-260 Test Set, TASK 31-31-09-700-802 or Underwater Locator Beacon Test with a PL3 Test Set, TASK 31-31-09-700-801 or Underwater Locator Beacon Test with a Seacom TS100 Test Set, TASK 31-31-09-700-803 or Underwater Locator Beacon Test with a TS200 Test Set, TASK 31-31-09-700-804 or L-3 Underwater Locator Beacon Operational Test with 17TES0015 Test Set, TASK 31-31-09-700-808 or Underwater Locator Beacon Test with a TS500 Test Set, TASK 31-31-09-700-809.

SUBTASK 31-31-09-420-006

(4) Do this task: Flight Data Recorder Installation, TASK 31-31-11-400-802.

SUBTASK 31-31-09-410-002

(5) Close the lowered ceiling panel [9].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-09-700-809

15. Underwater Locator Beacon Test with a TS500 Test Set

A. General

(1) This procedure has steps to do a test of the Underwater Locator Beacon (ULB) with a TS500 Test Set.

NOTE: TS500 can do a test for all ULBs.

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-19623	Test Set - TS500, Underwater Locator Beacon (ULB) Part #: TS500 Supplier: 94970

C. Procedure

SUBTASK 31-31-09-700-012

(1) Testing for the ULB battery voltage:

(a) Attach the test probe clip of the TS500 underwater locator beacon test set, COM-19623 to the beacon in its mount.

(b) Put the tip of the probe on the silver pad of the water switch at the end of the beacon.

1) The LCD display will show the battery voltage of the beacon.

(c) Refer to the applicable battery code for the minimum permitted range of the beacon battery voltage:

NOTE: Examine the battery replacement label to find the battery code.

1) Code F - 2.97 Volts

(2) Testing for the operation of the ULB:

(a) Keep the probes connected to the ULB.

NOTE: The test set display will remain blank during this test.

(b) Push the red button on the TS500 underwater locator beacon test set, COM-19623.

1) The beacon starts and you hear a pinging noise from the TS500 underwater locator beacon test set, COM-19623.

2) The TS500 underwater locator beacon test set, COM-19623 LED indicator will light up red every time the ULB pings.

(c) Remove the test probe clip of the TS500.

(3) If voltage or operation test does not pass, replace the ULB if necessary.

(a) Make sure that the water switch end of the ULB has no grease or dirt.

(b) If necessary, do the steps that follow:

1) Clean the switch with water and detergent.

2) Dry the switch with a clean cloth.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER (FDR) - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the flight data recorder

(2) An installation of the flight data recorder.

B. The flight data recorder is above the aft lowered ceiling panel No. 2 in the passenger compartment.

TASK 31-31-11-000-802

2. Flight Data Recorder Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
31-31-09-000-801	Underwater Locator Beacon Removal (P/B 201)

B. Tools/Equipment

Reference	Description
STD-1048	Stepladder - 6 foot (1.83m)

C. Location Zones

Zone	Area
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

D. Flight Data Recorder Removal

SUBTASK 31-31-11-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-11-010-001

(2) To get access to the flight data recorder [2] in the aft passenger compartment, open the lowered ceiling panel [1].

SUBTASK 31-31-11-800-001

(3) Use a 6 foot (1.83m) stepladder, STD-1048, to access the flight data recorder [2].

SUBTASK 31-31-11-020-001

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

(4) Remove the flight data recorder [2] (TASK 20-10-07-000-801).

SUBTASK 31-31-11-020-002

(5) Remove the Underwater Locator Beacon (ULB) from the flight data recorder [2] if the replacement flight data recorder [2] does not have an ULB installed (TASK 31-31-09-000-801).

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F53011 S0006574395_V3

Flight Data Recorder Installation
Figure 401/31-31-11-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER RACK, E20

A

F53012 S0006574396_V2

Flight Data Recorder Installation
Figure 401/31-31-11-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-11-400-802

3. Flight Data Recorder Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
31-31-09-400-801	Underwater Locator Beacon Installation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Flight data recorder	31-31-11-06-005	LOM 402, 406, 407, 411, 412, 415, 420, 422-426
		31-31-11-06-075	LOM 402, 406, 407, 411, 412, 415, 420, 422-426
		31-31-11-06-097	LOM 402, 406, 407, 411, 412, 415, 420, 422-426
		31-31-11-06-100	LOM 402, 406, 407, 411, 412, 415, 420, 422-426
		31-31-11-06-125	LOM 402, 406, 407, 411, 412, 415, 420, 422-426
		31-31-11-07-005	LOM 404, 416
		31-31-11-07-050	LOM 404, 416
		31-31-11-07-100	LOM 404, 416
		31-31-11-07-125	LOM 404, 416
		31-31-11-09-005	LOM 427-431, 443, 444, 451, 452, 461-463, 466-999
		31-31-11-09-010	LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465

C. Location Zones

Zone	Area
240	Subzone - Passenger Compartment - Body Station 663.75 to Body Station 1016.00

D. Installation Procedure

SUBTASK 31-31-11-010-002

(1) Make sure that the lowered ceiling panel [1] is open.

SUBTASK 31-31-11-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-11-420-001

(3) If the flight data recorder [2] does not have an Underwater Locator Beacon (ULB) installed, do this task: Underwater Locator Beacon Installation, TASK 31-31-09-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-11-420-002

> **CAUTION** DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE FLIGHT DATA RECORDER. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE FLIGHT DATA RECORDER.

(4) To install the flight data recorder [2], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 31-31-11-410-001

(5) Close the lowered ceiling panel.

E. Installation Test

SUBTASK 31-31-11-860-004

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

NOTE: There can be a delay approximately from 90 seconds and up to 5 minutes before it becomes available to conduct the installation test after circuit breakers closure.

SUBTASK 31-31-11-740-001

(2) Do this test of the flight data recorder [2]:

(a) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

1) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

LOM 427-432, 437, 438, 443, 444, 450-452, 461-999

2) Make sure the DFDR FAIL light on the Flight Data Acquisition Unit (FDAU) is off.

LOM ALL

(b) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

1) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT RECORDER/MACH AIRSPEED WARNING TEST MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the flight recorder/mach airspeed warning test module

(2) An installation of the flight recorder/mach airspeed warning test module.

B. The flight recorder/mach airspeed warning test module is installed on the P5 aft overhead panel.

C. For this procedure the flight recorder/mach airspeed warning test module will be referred to as the module [1].

TASK 31-31-12-000-801

2. Flight Recorder/Mach Airspeed Warning Test Module Removal

(Figure 401)

A. Location Zones

Zone	Area
212	Flight Compartment - Right

B. Flight Recorder/Mach Airspeed Warning Test Module Removal

SUBTASK 31-31-12-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
E	14	C00316	INDICATOR MASTER DIM SECT 4

SUBTASK 31-31-12-020-001

(2) Loosen the quater-turn fasteners [3] on the module [1].

SUBTASK 31-31-12-010-001

(3) Remove the module [1] from of the P5 aft overhead panel.

SUBTASK 31-31-12-020-002

(4) Disconnect the electrcal connector [2] from the rear of the module [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

F94578 S0006574401_V2

Flight Recorder/Mach Airspeed Warning Test Module Installation
Figure 401/31-31-12-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-12-400-801

3. **Flight Recorder/Mach Airspeed Warning Test Module Installation**
(Figure 401)

A. **References**

Reference	Title
34-16-00-730-801	Mach Airspeed Warning System - Aural Warning Discrete Output Test (P/B 501)

B. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Module	31-11-94-07B-405	LOM 423, 424
		31-11-95-05A-040	LOM 432, 437-439, 441, 451, 452, 465
		31-11-95-05B-040	LOM 443, 444, 458-460, 464
		31-11-95-05C-040	LOM 433, 434, 440, 442, 453, 454, 461-463
		31-11-95-05E-040	LOM 429-431, 445, 457
		31-11-95-05G-040	LOM 427, 428
		31-11-95-05K-040	LOM 446, 447, 455, 456
		31-11-95-07B-050	LOM 423, 424
		31-11-95-07N-050	LOM 420
		31-11-95-07P-050	LOM 407
		31-11-95-08E-050	LOM 411, 426
		31-11-95-10-045	LOM 412, 415
		31-11-95-13L-040	LOM 450
		31-11-95-13V-040	LOM 466-999
		31-11-95-14-050	LOM 402, 404, 406, 416
		31-11-95-23-050	LOM 422, 425
		31-31-12-03-020	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426
		31-31-12-05-020	LOM 427-434, 437-447, 450-464
		31-31-12-05-025	LOM 465-999

C. **Location Zones**

Zone	Area
212	Flight Compartment - Right

D. **Flight Recorder/Mach Airspeed Warning Test Module Installation**

SUBTASK 31-31-12-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

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(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	10	C00468	FLIGHT RECORDER DC

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
E	14	C00316	INDICATOR MASTER DIM SECT 4

SUBTASK 31-31-12-420-001

(2) Connect the electrcal connector [2] to the rear of the module [1].

SUBTASK 31-31-12-410-001

(3) Install the module [1] into the P5 aft overhead panel.

SUBTASK 31-31-12-420-002

(4) Tighten the quater-turn fasteners [3] on the module [1].

SUBTASK 31-31-12-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
E	14	C00316	INDICATOR MASTER DIM SECT 4

E. Installation Test

SUBTASK 31-31-12-710-001

(1) Do this test of the module [1]:

(a) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

1) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

(b) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

1) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is on.

SUBTASK 31-31-12-730-001

(2) Do this task: Mach Airspeed Warning System - Aural Warning Discrete Output Test, TASK 34-16-00-730-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DIGITAL FLIGHT DATA ACQUISITION UNIT (DFDAU) - MAINTENANCE PRACTICES

1. General

A. The Digital Flight Data Acquisition Unit (DFDAU) can also be referred to as the FDAU, DFDMU, or DFDAMU. However, for consistency, this procedure will use the term DFDAU when referring to the digital flight data acquisition unit.

B. This procedure contains these tasks:

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

(1) An installation of the digital flight data acquisition unit (DFDAU) mandatory or ACMS application software with the use of an airborne data loader (ADL).

(2) A task to make a copy of ACMS data from the DFDAU to an airborne data loader (ADL).

LOM 429-431, 440, 442-447, 450-460, 464-999

(3) An installation of the DFDAU mandatory or ACMS application software with an enhanced airborne data loader (eADL).

(4) A task to make a copy of ACMS data from the DFDAU to an enhanced airborne data loader (eADL).

LOM 412, 415, 423, 424, 427, 428, 439, 441, 461-463

(5) An installation of the DFDAU mandatory or ACMS application software with the use of a portable data loader (PDL).

(6) A task to make a copy of ACMS data from the DFDAU to a portable data loader (PDL).

LOM 432

(7) A task to install software into the DFDAU with the use of the media drive.

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999

(8) A task to install software into DFDAU with the use of the Personal Computer Memory Card Interface Adapter (PCMCIA) interface.

LOM 427-432, 437, 438, 443, 444, 461-463, 466-999

(9) A task to make a copy of ACMS data from the DFDAU.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460

(10) An installation of the DFDAU software with the use of the PCMCIA interface on the DFDAU.

(11) A task to make a copy of ACMS data from the DFDAU to a PCMCIA card.

(12) A task to make a copy of ACMS In-Flight data from the DFDAU to a PCMCIA card.

LOM 427-431, 450, 461-999

(13) A task to make a copy of ACMS In-Flight data from the DFDAU to a PCMCIA card.

LOM ALL

(14) A task to use the DFDAU for input monitoring with Digital Information Transfer System (DITS) or Mnemonics.

C. For general information for software installation times and data loaders, do this task: On-Airplane Software - Installation, TASK 20-15-11-400-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-22-400-803

2. Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL)

A. General

(1) This procedure tells you how to install software in flight data acquisition unit (FDAU).

(a) The FDAU must contain these pieces of software:

1) mandatory FDAU software

2) ACMS non-mandatory FDAU software

(2) An Airborne Data Loader (ADL) 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 airborne data loader on the P61 panel.

(3) The airplane must be on the ground with the engines shutdown before you can install software.

(4) 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.

(5) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software - Installation (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment - Right

D. Procedure

SUBTASK 31-31-22-860-022

(1) Open these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-22-860-021

(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 31-31-22-410-003

(3) Do these steps to prepare for the software installation:

(a) Close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Make sure you know the correct software part number for the FDAU. For the FDAU to be an approved installation, the correct software part number must be installed.

(c) Make sure the system select switch on the data loader control panel (P61) is set to NORM or NORMAL.

(d) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the applicable position.

a) DFDAU position to install the mandatory FDAU software.

b) ACMS position to install the non-mandatory FDAU software.

SUBTASK 31-31-22-470-023

(4) Do this step to install the software - (Preferred):

(a) Follow the generic ADL procedure to load software part (TASK 20-15-11-400-801).

SUBTASK 31-31-22-020-003

(5) Do these steps of the airborne data loader to install the software - (Non-Preferred):

(a) Put the correct media in the drive.

(b) Follow the prompts on the data loader to complete the installation.

NOTE: Cycle circuit breakers FLIGHT RECORDER AC & FLIGHT RECORDER DC if prompts do not display.

1) If there is more than one piece of media to install, wait 10 seconds after each load is completed before you remove and install the subsequent media.

NOTE: CHNG, CHANGE DISK, DISK CHANGE and INSERT DISK are examples of data loader prompts for a subsequent disk.

(c) Remove the media from the drive when the software installation is complete.

NOTE: COMP, LOAD COMPLETE and TRANSF COMPLETE are examples of data loader prompts for a complete installation.

SUBTASK 31-31-22-860-010

(6) Set the system select switch on the data loader control panel to NORM or NORMAL.

SUBTASK 31-31-22-020-004

(7) Do these steps to do a software configuration check of the FDAU:

(a) Make sure the upper switch on the data loader control panel is set to SINGLE SYS.

(b) Set the system select switch on the data loader control panel to the applicable position.

1) DFDAU position for the FDAU mandatory software.

2) ACMS position for the FDAU non-mandatory software.

(c) If you are not at the MAINT BITE INDEX menu on the CDU, select the line select key adjacent to the INDEX prompt.

(d) If you are at the MAINT BITE INDEX menu, select INIT REF key from the left CDU.

(e) Select the line-select-key adjacent to the INDEX prompt from the left CDU.

(f) Select the line-select-key adjacent to the SEL CONFIG prompt from the left CDU.

1) Make sure the correct software part number shows on the CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438 (Continued)

SUBTASK 31-31-22-020-008

(8) Do these steps to put the airplane back to its usual condition:

(a) Set the system select switch on the data loader control panel to NORM or NORMAL.

——— END OF TASK ———

TASK 31-31-22-400-810

3. ACMS Data Output from the FDAU to an Airborne Data Loader (ADL)

A. General

(1) This procedure tells you how to download ACMS data from the flight data acquisition unit (FDAU) with the use of the ADL.

(2) An Airborne Data Loader (ADL) is necessary for this procedure.

(3) The airplane must be on the ground with the engines shutdown before you can download ACMS data.

(4) 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.

(5) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

(6) You must format the media with your applicable download instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

B. Location Zones

Zone	Area
212	Flight Compartment - Right

C. ACMS Data Output from the FDAU to an Airborne Data Loader (ADL)

SUBTASK 31-31-22-860-036

(1) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 31-31-22-410-012

(2) Do these steps to prepare for the ACMS data download:

(a) Close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(b) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the ACMS position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61) (Continued)

3) Set the system select switch to the NORM or NORMAL position once the download is complete.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

SUBTASK 31-31-22-020-023

(3) Do these steps to download ACMS data:

(a) Put the formatted media into the drive.

(b) Wait until the ADL display shows the ADL Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the ADL screen, use the appropriate buttons on the ADL front panel.

NOTE: If the ADL Main Menu does not show, select MAIN or GO BACK until the ADL shows the Main Menu.

(c) Select the “Load Transfer Page.”

(d) Select the “Target Page.”

NOTE: The ADL will show the Select Target System screen.

(e) Select the “Floppy Drive.”

NOTE: The ADL will show a Load Confirmation screen.

(f) Select “CONFIRM.”

(g) Remove the media from the drive when the download is completed.

——— END OF TASK ———

LOM 429-431, 440, 442-447, 450-460, 464-999

TASK 31-31-22-470-808

4. Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL)

A. General

(1) This task provides the instructions on how to install software in the Digital Flight Data Acquisition Unit (DFDAU).

(a) The DFDAU must contain these pieces of software:

1) Mandatory DFDAU software

2) ACMS non-mandatory DFDAU software.

(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 enhanced airborne data loader on the P61 panel.

(3) The eADL software installation:

LOM 429-431, 440, 442-447, 450-460, 464, 465

(a) Floppy Disk Software Installation

LOM 429-431, 440, 442-447, 450-460, 464-999

(b) USB Flash Drive Software Installation

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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). Once the software is installed on the MSD, the software is loaded to the DFDAU.
2) The USB flash drive must be configured correctly using the USB tool defined in the eADL Operations Guide.

(4) The airplane must be on the ground with the engines shutdown before you can install software.

(5) 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.

(6) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software - Installation (P/B 201)

C. Prepare for the Installation

SUBTASK 31-31-22-860-100

(1) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 31-31-22-860-101

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-22-470-006

(3) Make sure that you know the correct software part number for the DFDAU.

NOTE: For the DFDAU to be an approved installation, the correct software part number must be installed.

SUBTASK 31-31-22-860-142

(4) Make sure that the system select switch, on the P61 data loader control panel, is set to NORM or NORMAL position.

SUBTASK 31-31-22-860-144

(5) Do these steps at the data loader control panel:

(a) Set the upper switch to SINGLE SYS.

(b) Set the system select switch to the applicable position.

1) DFDAU position to install the mandatory DFDAU software.
2) ACMS position to install the non-mandatory DFDAU software.

SUBTASK 31-31-22-860-103

(6) Open the eADL front cover by releasing the two screws and lifting up on the cover.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

D. Software Installation - (Preferred)

SUBTASK 31-31-22-470-022

(1) Follow the generic ADL procedure to load software part (TASK 20-15-11-400-801).

LOM 429-431, 440, 442-447, 450-460, 464, 465

E. Floppy Disk Software Installation - (Non-Preferred)

SUBTASK 31-31-22-470-011

(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.

1) 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 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.”

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.

(f) Select “MAIN” or “GO BACK” to go back to the main menu.

(g) Eject the disk from the disk drive when the software installation is completed.

LOM 429-431, 440, 442-447, 450-460, 464-999

F. USB Flash Drive Software Installation - (Non-Preferred)

SUBTASK 31-31-22-470-012

(1) 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 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.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) 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.”

1) If the error message “USB Is Not Mounted Or Is Not A Valid USB” is shown, select “GO BACK” and do the steps again.

2) Make sure that the USB flash drive is configured correctly by the USB tool as specified in the eADL Operations Guide.

3) The eADL screen will show “CONFIRM TO BEGIN TRANSFERRING.”

4) 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: “This part name already exists.”

(e) Make sure that USB and MSB annunciators turn green and the message shows "Part Transfer Complete".

NOTE: This means that software transfer is complete.

NOTE: The annunciators will turn red if the transfer procedure is aborted or if there is a failure.

(f) Select “MAIN” or “GO BACK” to go back to the main menu.

(g) Remove the USB flash drive from the eADL USB port.

(h) Following the successful load of the software perform these steps to remove previous versions from the MSD:

NOTE: This procedure allows the operator to remove an LSP from the MSD. This will also delete any downloaded files associated with the LSP that may have been added to the LSP. This action cannot be undone.

NOTE: It is recommended to remove the older LSP on the MSD, but it is not required.

1) On the eADL use the Up and Down keys and select the following:

a) Select the Maintenance page.

b) Select delete Software part option.

NOTE: The listed LSP may or may not appear as a part number. It will appear as it was originally saved using eADL Part Builder.

c) Select the desired LSP.

d) The eADL screen will display, Part Selected for Deletion is <Desired LSP>.

e) Press the CONFIRM softkey to initiate the deletion process.

NOTE: If you want to cancel the operation, use the Go Back key.

2) The MSD annunciator will turn yellow while the delete operation is taking place.

3) The MSD annunciator will turn back to green and scree will display:

a) Part Deleted.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

4) Press the GO BACK key to return to the Main Menu.

SUBTASK 31-31-22-470-013

(2) 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.

1) If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

(b) Select “Target Page.”

NOTE: This will show the “Select Target System” screen.

(c) Select the software received by the LRU.

NOTE: 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 tool. See the supplier eADL Operations Guide.

(e) Make sure that the “Load Confirmation” screen shows.

(f) Select “CONFIRM”.

NOTE: This will show the “Transfer In Progress” screen.

NOTE: The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the installation procedure.

NOTE: The “LOADING” annunciator will change to “COMPLETE” and turn green when the installation procedure is completed.

(g) Select “MAIN” or “GO BACK” to go back to the main menu.

LOM 429-431, 443, 444, 450-452, 464-999; AIRPLANES WITH TELEDYNE DFDAU P/N 2233000-916

SUBTASK 31-31-22-740-003

(3) Make sure that the A/C number is correct.

(a) Select the A/C number on the DFDAU INIT page.

(b) Make sure that the A/C number is correct.

(c) If it is necessary, set the A/C number to the correct value.

SUBTASK 31-31-22-740-006

(4) As optional, check the A/C registration via CDU, do these steps:

(a) Set the LSK labeled INITIALIZATION on the DFDAU Main Menu page.

(b) Set the LSK labeled INITIALIZE AIRCRAFT.

(c) Make sure that the A/C registration is correct.

(d) If it is necessary, set the A/C registration to the correct value.

1) Use scratchpad to insert the three high order characters of the A/C registration.

a) Push "-1L" button.

2) Use scratchpad to insert the three low order characters of the A/C registration.

a) Push "-2L" button.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 443, 444, 450-452, 464-999; AIRPLANES WITH TELEDYNE DFDAU P/N 2233000-815 OR 2233000-816-1

SUBTASK 31-31-22-740-007

(5) Make sure that the A/C registration is correct.

(a) Use the front panel of the DFDAU to make sure that the A/C registration is correct.

(b) If it is necessary, use the front panel to set the A/C registration to the correct value.

LOM 429-431, 443, 444, 450-452, 464-999

SUBTASK 31-31-22-970-008

(6) If necessary, to record units in kg, do these steps:

NOTE: When the new software is installed, the default units are in lbs.

NOTE: This step is not applicable for the operators who record units in lbs.

(a) Go to the DFDAU main menu on the left CDU.

NOTE: Depending on the operator's ACMS Software, the DFDAU menu page can be different.

(b) Select the INITIALIZATION key on the left CDU.

(c) Select CHANGE UNITS (LBS/KG).

1) Make sure that the correct units display on the CDU.

LOM 429-431, 450, 464-999

SUBTASK 31-31-22-970-009

(7) If necessary, to enable the position report, do these steps:

NOTE: When the new software is installed, the position report is disabled by default.

NOTE: Depending on the operator's ACMS Software, the DFDAU menu page can be different.

NOTE: This step is not applicable for the operators who do not use the position report function.

(a) Go to the DFDAU INITIALIZ MENU.

(b) Select PROGRAM POSITION RPT.

NOTE: When selecting it, you can see POSITION REPORT page.

(c) Press 10 on the scratchpad and then select SET POS.PRT TIMER.

NOTE: This will enable the position report, and the position report will send every 10 min.

LOM 429-431, 440, 442-447, 450-460, 464-999

G. Software Installation Configuration Check

SUBTASK 31-31-22-470-010

(1) Do these steps to do a software configuration check of the DFDAU:

NOTE: On aircraft configurations with CDU displaying DFDAU/ACMS, record the aircraft ID and engine serial number. Use the Initialization Menu on the CDU. This data will subsequently show on recorded data and report header in the DFDAU.

(a) Make sure that the upper switch on the data loader control panel is set to SINGLE SYS.

(b) Set the system select switch on the data loader control panel to the applicable position.

1) DFDAU position for the DFDAU mandatory software.

2) ACMS position for the FDAU non-mandatory software.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) If you are not at the MAINT BITE INDEX menu on the CDU, select the line select key adjacent to the INDEX prompt.

(d) If you are at the MAINT BITE INDEX menu, select INIT REF key from the left CDU.

(e) Select the line select key adjacent to the INDEX prompt from the left CDU.

(f) Select the line select key adjacent to the SEL CONFIG prompt from the left CDU.

1) Make sure that the correct software part number shows on the CDU.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-22-860-104

(1) Close the eADL cover and tighten screws.

SUBTASK 31-31-22-860-105

(2) Set the system select switch, on the P61 data loader control panel, to NORM or NORMAL position.

——— END OF TASK ———

TASK 31-31-22-400-822

5. ACMS Data Output from the DFDAU to an Enhanced Airborne Data Loader (eADL)

A. General

(1) This procedure tells you how to download Airplane Condition And Monitoring System (ACMS) data from the Digital Flight Data Acquisition Unit (DFDAU) with an eADL.

(2) An eADL is necessary for this procedure.

(3) The airplane must be on the ground with the engines shutdown before you can download ACMS data.

(4) 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.

(5) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices (MSD)s, diskettes, USB flash drive or floppy disks.

(6) The USB flash drive must be configured correctly using the USB tool defined in the supplier eADL Operations Guide.

(7) You must format the media with your applicable download instructions before you can make a copy of the ACMS data. Refer to your DFDAU vendor's manual on how to format the recording media.

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
212	Flight Compartment - Right

D. Procedure

SUBTASK 31-31-22-860-111

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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

SUBTASK 31-31-22-860-112

(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 31-31-22-860-113

(3) Close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-22-860-115

(4) Do these steps at the data loader control panel (P61):

(a) Set the upper switch to SINGLE SYS.

(b) Set the system select switch to the ACMS position.

SUBTASK 31-31-22-010-026

(5) Open the eADL front cover by releasing the two screws and lifting up the cover.

LOM 429-431, 440, 442-447, 450-460, 464, 465

SUBTASK 31-31-22-470-014

(6) Do these steps to download ACMS data using the eADL floppy drive:

(a) Wait until the eADL display shows the Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the applicable 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 menu.

(c) Carefully push the formatted data disk (label up) into the disk drive.

(d) Select “Floppy Drive.”

1) The eADL will show a Confirm Transfer page:

CONFIRM TO START

SELECTED SOURCE IS

<Floppy Drive>

(e) Select “CONFIRM.”

NOTE: The download can take several minutes.

1) This will show the “Transfer In Progress” screen.

2) The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the download procedure.

3) The “LOADING” annunciator will change to “COMPLETE” and turn green when the download procedure is completed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464, 465 (Continued)

(f) Select "Main."

LOM 429-431, 440, 442-447, 450-460, 464-999

SUBTASK 31-31-22-470-017

(7) Do these steps to download ACMS data using the eADL USB port:

(a) Wait until the eADL display shows the Main Menu.

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the applicable 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) Do these steps if the ACMS data has not been downloaded from the LRU to the eADL MSD:

1) Select “Target Page.”

a) This will show the “Select Target System” screen.

2) Select the target LRU.

a) This will show the “Select Software Part” screen.

3) Push the “SELECT” button for the desired software.

NOTE: The listed software will appear as it was originally configured in the USB tool. See the eADL Operations Guide

4) Make sure that the “Confirm Transfer” screen shows.

5) Select “CONFIRM.”

a) This will show the “Transfer In Progress” screen.

b) The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the download procedure.

c) The “LOADING” annunciator will change to “COMPLETE” and turn green when the download procedure is completed.

(8) Do these steps to download the ACMS data from the eADL MSD to a USB flash drive:

(a) Put the USB flash drive into the eADL USB port.

NOTE: The USB flash drive must be configured correctly by the USB 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.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

(d) Select “Transfer Downloaded Data to 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 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.

(e) When the download 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 “MAIN” to go back to the main menu.

SUBTASK 31-31-22-020-049

(9) Remove the media from the drive or port when the download is complete.

SUBTASK 31-31-22-410-032

(10) Close the eADL front cover and tighten the two screws.

SUBTASK 31-31-22-860-116

(11) Set the system select switch to the NORM or NORMAL position on the data loader control panel (P61) when the download is complete.

SUBTASK 31-31-22-860-117

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

END OF TASK

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

TASK 31-31-22-470-801

6. Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader

A. General

(1) This task gives the instruction to install the software into the Flight Data Acquisition Unit (FDAU).

(a) The FDAU must contain these pieces of software:

1) Mandatory FDAU software

2) Airplane Condition And Monitoring System (ACMS) non-mandatory FDAU software.

(2) A Portable Data Loader (PDL) and Control Display Unit (CDU) are necessary for this task. A data loader control panel and PDL interface connector are also necessary. The data loader control panel is installed above the DATA TRANSFER UNIT RECEPTACLE connector, on the P61 data loader control panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(3) A PDL is not a Boeing supplied part. Refer to the PDL supplier for instructions for operations. 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.

(4) The airplane must be on the ground with the engines shutdown before you can install software.

(5) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

(6) Modern software loaders that meet the security requirements defined in ARINC 645-1 or newer are recommended to use. The procedures for modern software loaders will be marked as preferred for now and will be the only procedures available after removing floppy disk loaders procedures in the future. Please check with your Software Loader Supplier for current capabilities since this is still maturing across current and future software loaders.

(7) Sequence for the Digital Flight Data Acquisition Unit (DFDAU) software installation is following:

(a) Mandatory DFDAU software (mandatory load)

(b) Broadcast DFDAU software (mandatory load)

(c) ACMS and application software (non-mandatory load)

(d) ACMS database (non-mandatory load).

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software - Installation (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 (without ARINC 645-1 Compliant) Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: PXS-LDS-10 Supplier: 98571 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 30100 Supplier: 0BAW0 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 #: 964-0400-024 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-044 Supplier: 97896 Opt Part #: 964-0400-045 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896 Opt Part #: P2K-615A-06 Supplier: 0BAW0

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999 (Continued)

(Continued)

Reference	Description
COM-21223	Data Loader - ARINC 615 (with ARINC 645-1 Compliant) Part #: 403474 Supplier: CG603 Part #: 403562 Supplier: CG603 Part #: AE-615-MPDL Supplier: CD624 Part #: PDL-615-XT Supplier: 89Q20

D. Location Zones

Zone	Area
212	Flight Compartment - Right

E. Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader

SUBTASK 31-31-22-410-004

(1) Do these steps to prepare for the software installation:

(a) Make sure that you know the correct software part number for the FDAU.

NOTE: For the FDAU to be an approved installation, the correct software part number must be installed.

(b) Make sure that the system select switch, on the P61 data loader control panel, is set to NORM or NORMAL position.

> **CAUTION** MAKE SURE THAT THE DATA LOADER CIRCUIT-BREAKER IS OPEN BEFORE YOU CONNECT OR REMOVE THE DATA LOADER CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
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.

(d) Connect the interface cable of the ARINC 615 data loader, COM-1915, or ARINC 645-1 compliant portable data loader, COM-21223, to the DATA TRANSFER UNIT RECEPTACLE, on the P61 data loader control panel.

NOTE: This loader is going obsolete due use of floppy disks and ARINC 645 security requirements.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(f) Do these steps at the P61 data loader control panel:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61) (Continued)

1) Set the upper switch to SINGLE SYS position.
2) Set the system select switch to the applicable position.
   a) DFDAU position to install the mandatory FDAU software.
   b) ACMS position to install the non-mandatory FDAU software.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

SUBTASK 31-31-22-470-024

(2) Do this step to install the software (Preferred):
   (a) Follow the generic PDL procedure to load software part (TASK 20-15-11-400-801).

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; SOFTWARE INSTALLATION WITH A PDL MASS STORAGE DEVICE

SUBTASK 31-31-22-020-029

(3) Do these steps at the portable data loader to install the software (Alternative):
   (a) Set the power switch on the data loader to the ON position.
   (b) Follow the PDL supplier instructions to install the software.
   (c) Set the power switch on the data loader to the OFF position when the software installation is complete.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

SUBTASK 31-31-22-860-011

(4) Set the system select switch, on the P61 data loader control panel, to NORM or NORMAL position.

SUBTASK 31-31-22-020-006

(5) Do these steps to do a software configuration check of the FDAU:

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

   (a) Make sure that the upper switch, on the P61 data loader control panel, is set to SINGLE SYS position.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

   (b) Set the system select switch, on the P61 data loader control panel, to the applicable position.
      1) DFDAU position for the mandatory FDAU software.
      2) ACMS position for non-mandatory FDAU software.
   (c) Select the INIT REF key from the left CDU.
   (d) Select the line-select-key adjacent to the INDEX prompt from the left CDU.
   (e) Select the line-select-key adjacent to the SEL CONFIG prompt from the left CDU.
      1) Make sure that the correct software part number shows on the CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427, 428, 450, 461-999

SUBTASK 31-31-22-970-010

(6) If it is necessary, to enable the position report, do these steps:

NOTE: When the new software is installed, the position report is disabled by default.

NOTE: Depending on the operator's ACMS software, the DFDAU menu page can be different.

NOTE: This step is not applicable for the operators who do not use the position report function.

(a) Go to the DFDAU INITIALIZ MENU.

(b) Select PROGRAM POSITION RPT.

NOTE: When selecting it, you can see POSITION REPORT page.

(c) Press 10 on the scratchpad and then select SET POS.PRT TIMER.

NOTE: This will enable the position report, and the position report will send every 10 min.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-22-020-052

(1) Set the system select switch on the data loader control panel to NORM or NORMAL position.

CAUTION	MAKE SURE THAT THE DATA LOADER CIRCUIT-BREAKER IS OPEN BEFORE YOU CONNECT OR REMOVE THE DATA LOADER 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 interface cable from the DATA TRANSFER UNIT RECEPTACLE.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

END OF TASK

TASK 31-31-22-470-803

7. ACMS Data Output from the FDAU with the use of the Portable Data Loader

A. General

(1) This procedure tells you how to download ACMS data from the flight data acquisition unit (FDAU) with the use of the PDL.

(2) A portable data loader (PDL) and a control display unit (CDU) are necessary for this procedure.

(3) The airplane must be on the ground with the engines shutdown before you can download ACMS data.

(4) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(5) You must format the media with your applicable download instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

(6) Modern software loaders that meet the security requirements defined in ARINC 645-1 or newer are recommended to use. The procedures for modern software loaders will be marked as preferred for now and will be the only procedures available after removing floppy disk loaders procedures in the future. Please check with your Software Loader Supplier for current capabilities since this is still maturing across current and future software loaders.

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-1915	Data Loader - ARINC 615 (without ARINC 645-1 Compliant) Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: PXS-LDS-10 Supplier: 98571 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 30100 Supplier: 0BAW0 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 #: 964-0400-024 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-044 Supplier: 97896 Opt Part #: 964-0400-045 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896 Opt Part #: P2K-615A-06 Supplier: 0BAW0
COM-21223	Data Loader - ARINC 615 (with ARINC 645-1 Compliant) Part #: 403474 Supplier: CG603 Part #: 403562 Supplier: CG603 Part #: AE-615-MPDL Supplier: CD624 Part #: PDL-615-XT Supplier: 89Q20

C. Location Zones

Zone	Area
212	Flight Compartment - Right

D. Procedure

SUBTASK 31-31-22-410-013

(1) Do these steps to prepare for the software download:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999 (Continued)

(a) Make sure the system select switch on the data loader control panel (P61) is set to NORM or NORMAL.

> **CAUTION** MAKE SURE THAT 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

Row	Col	Number	Name
A	9	C00923	DATA LOADER

> **CAUTION** SET THE POWER SWITCH FOR THE PORTABLE DATA LOADER 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) Connect the interface cable of the ARINC 615 data loader, COM-1915, or ARINC 645-1 compliant portable data loader, COM-21223, to the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(e) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the ACMS position.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

SUBTASK 31-31-22-020-025

(2) Do these steps to make a copy of ACMS data:

NOTE: For more information on how to use the data loader, refer to the supplier's instructions for the data loader.

(a) Set the power switch on the data loader to the on position.

(b) Put the correct media in the drive.

(c) Follow the prompts on the data loader to complete the installation.

1) If there is more than one piece of media to install, wait 10 seconds after each load is completed before you remove and install the subsequent media.

(d) Remove the media from the drive when the a copy of the ACMS data is complete.

(e) Set the power switch on the data loader to the off position.

SUBTASK 31-31-22-860-038

(3) Set the system select switch on the data loader control panel to NORM or NORMAL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999 (Continued)

SUBTASK 31-31-22-020-026

(4) Do these steps to put the airplane back to its usual condition:

(a) Set the system select switch on the data loader control panel to NORM or NORMAL.

CAUTION	MAKE SURE THAT 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

Row	Col	Number	Name
A	9	C00923	DATA LOADER

(c) Remove the interface cable from the DATA TRANSFER UNIT RECEPTACLE.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

END OF TASK

LOM 432

TASK 31-31-22-400-809

8. Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface

A. General

(1) This procedure tells you how to install Airplane Condition And Monitoring System (ACMS) application software in the Flight Data Acquisition Unit (FDAU) with the use of FDAU integrated optical disk drive, P/N 2233000-815, -815-1 or -825. The FDAU integrated optical disk drive can only be used to load ACMS application software. To load the FDAU mandatory software you must use the Airborne Data Loader (ADL) or a Portable Data Loader (PDL).

(2) The FDAU must contain these pieces of software:

(a) Mandatory FDAU software

(b) ACMS non-mandatory FDAU software.

(3) The airplane must be on the ground with the engines shutdown before you can install software.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation

SUBTASK 31-31-22-010-010

(1) Do these steps to prepare for the software installation:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432 (Continued)

(a) Make sure you know the correct software part number for the FDAU.

NOTE: For the FDAU to be an approved installation, the correct software part number must be installed.

(b) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the applicable position:

a) Digital Flight Data Acquisition Unit (DFDAU) position to install the mandatory FDAU software.

b) ACMS position to install the non-mandatory FDAU software.

(c) Set the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

(d) Turn the latch located on the right side of the FDAU to open the disk access panel.

(e) Remove the disk if there is one installed.

SUBTASK 31-31-22-410-011

(2) Do these steps to install the software.

(a) Install the software upload disk into the disk drive.

NOTE: The FDAU will take 1 to 2 minutes to recognize the FDAU disk. With the correct disk in the FDAU, the software loading will take approximately 20 minutes.

(b) Do these steps on the FDAU to monitor the loading process:

1) Push ESC key until TELEDYNE CNTRLS show on the FDAU display.

2) Push ENT key to show MANDATORY MENU.

3) Push (+) to show NON-MANDATORY MENU.

4) Push ENT to show VERSION.

5) Push (+) two times to show LOAD STATUS.

6) Push ENT.

NOTE: The date of when the software was last loaded will show as the default.

7) Make sure Erasing, Programming, Complete and Ejecting...Wait messages show as the software loading proceeds through different stages of the loading.

NOTE: After the load is completed, the disk will automatically eject and the FDAU will start the execution of the new application.

SUBTASK 31-31-22-020-021

(3) Remove the software upload disk.

(a) If necessary, install the disk removed before the installation of the software upload disk.

SUBTASK 31-31-22-860-032

(4) Make sure that the system select switch, on the P61 data loader control panel, is set to NORM or NORMAL position.

SUBTASK 31-31-22-020-022

(5) Do these steps to do a software configuration check of the FDAU:

(a) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432 (Continued)

2) Set the system select switch to the applicable position.
   a) DFDAU position to install the mandatory FDAU software.
   b) ACMS position to install the non-mandatory FDAU software.

(b) If you are not at the MAINT BITE INDEX menu on the Control Display Unit (CDU), select the line select key adjacent to the INDEX prompt.

(c) If you are at the MAINT BITE INDEX menu, select INIT REF key from the left CDU.

(d) Select the line-select-key adjacent to the INDEX prompt from the left CDU.

(e) Select the line-select-key adjacent to the SEL CONFIG prompt from the left CDU.
   1) Make sure that the correct software part number shows on the CDU.

SUBTASK 31-31-22-860-047

(6) Set the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

——— END OF TASK ———

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999

TASK 31-31-22-400-802

9. Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface

A. General

(1) This procedure tells you how to install Airplane Condition And Monitoring System (ACMS) application software in the Flight Data Acquisition Unit (FDAU) with the use of a Personal Computer Memory Card Interface Adapter (PCMCIA) interface, P/N 2233000-816, -816-1, -826, -916, -936, -946, or -966. The FDAU PCMCIA drive can only be used to load ACMS application software. To load the FDAU mandatory software you must use the Airborne Data Loader (ADL) or a Portable Data Loader (PDL).

(2) The FDAU must contain these pieces of software:
   (a) Mandatory FDAU software
   (b) ACMS non-mandatory FDAU software.

(3) A PCMCIA data card is required for this procedure.

(4) The airplane must be on the ground with the engines shutdown before you can install software.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation

SUBTASK 31-31-22-010-003

(1) Do these steps to prepare for the software installation:
   (a) Make sure that you know the correct software part number for the FDAU.
      NOTE: For the FDAU to be an approved installation, the correct software part number must be installed.
   (b) Do these steps at the data loader control panel:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Set the upper switch to SINGLE SYS.
2) Set the system select switch to the applicable position:
   a) Digital Flight Data Acquisition Unit (DFDAU) position to install the mandatory FDAU software.
   b) ACMS position to install the non-mandatory FDAU software.

SUBTASK 31-31-22-200-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-22-410-002

(3) Do these steps to install the software:

CAUTION: MAKE SURE THAT YOU PUT THE PCMCIA CARD IN THE CORRECT DIRECTION. IF YOU DO NOT PUT THE PCMCIA CARD IN CORRECTLY, DAMAGE TO THE IDMU CAN OCCUR.

(a) Put the PCMCIA card into the FDAU PCMCIA slot.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

NOTE: The FDAU will take 1 to 2 minutes to recognize the PCMCIA card. With the correct upload PCMCIA card in the FDAU, the software loading will take approximately 5 minutes.

(c) Do these steps on the FDAU to monitor the loading process:
   1) Push ESC key until TELEDYNE CNTRLS show on the FDAU display.
   2) Push ENT key to show MANDATORY MENU.
   3) Push (+) to show NON-MANDATORY MENU.
   4) Push ENT to show VERSION.
   5) Push (+) two times to show LOAD STATUS.
   6) Push ENT.

      NOTE: The date when the software was last loaded will show as the default.
   7) Make sure that Erasing, Programming, Complete and Remove PC-Card messages show as the software loading proceeds through different stages of the loading.

SUBTASK 31-31-22-470-021

(4) If necessary, to record units in kg, do these steps:

NOTE: When the new software is installed, the default units are in lbs.

NOTE: This step is not applicable for the operators who record units in lbs.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999 (Continued)

(a) Go to the DFDAU main menu on the left Control Display Unit (CDU).

NOTE: Depending on the operator's ACMS, the DFDAU menu page can be different.

(b) Select the INITIALIZATION key on the left CDU.

(c) Select CHANGE UNITS (LBS/KG).

1) Make sure that the correct units display on the CDU.

SUBTASK 31-31-22-020-001

(5) Remove the PCMCIA card when the upload is completed.

NOTE: When the PCMCIA card is removed, the FDAU will start the execution of the new application.

SUBTASK 31-31-22-470-019

CAUTION	DO A MEDIAPREP OF THE PCMCIA CARD IN ACCORDANCE WITH UGP709084 BEFORE INSERTION OF THE CARD INTO THE PCI. FAILURE CAN CAUSE NO DATA RECORDED ON THE CARD.

(6) Insert the blank MEDIAPREPed PCMCIA card into the PCI.

NOTE: On aircraft configurations with CDU displaying DFDAU/ACMS, record the aircraft ID and engine serial number. Use the Initialization Menu on the CDU. This data will subsequently show on recorded data and report header in the DFDAU.

SUBTASK 31-31-22-860-018

(7) Make sure that the system select switch, on the P61 data loader control panel, is set to NORM or NORMAL position.

SUBTASK 31-31-22-020-010

(8) Do these steps to do a software configuration check of the FDAU:

(a) Wait five minutes before verifying the software application versions have been correctly loaded.

NOTE: The wait time allows for the DFDAU to update the MDCU and DFDAU front display.

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(b) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the applicable position.

a) DFDAU position to install the mandatory FDAU software.

b) ACMS position to install the non-mandatory FDAU software.

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999

(c) If you are not at the MAINT BITE INDEX menu on the CDU, select the line select key adjacent to the INDEX prompt.

(d) If you are at the MAINT BITE INDEX menu, select INIT REF key from the left CDU.

(e) Select the line-select-key adjacent to the INDEX prompt from the left CDU.

(f) Select the line-select-key adjacent to the SEL CONFIG prompt from the left CDU.

1) Make sure that the correct software part number shows on the CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999 (Continued)

SUBTASK 31-31-22-860-048

(9) Set the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

——— END OF TASK ———

LOM 427-432, 437, 438, 443, 444, 461-463, 466-999

TASK 31-31-22-400-813

10. ACMS Data Output with the Use of the Teledyne FDAU

A. General

(1) This procedure tells you how to make a copy of ACMS data using the PCMCIA, optical or disk drive on the FDAU.

(2) You must format the PCMCIA card, optical disk or diskette with your applicable downloading instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Procedure

SUBTASK 31-31-22-970-001

(1) Do these steps to make a copy of the ACMS data onto a PCMCIA card.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

(b) Open the disk drive door in front of the FDAU.

1) Make sure the disk drive is empty.

a) If the disk drive is not empty, push the EJECT button located at the bottom of the PCMCIA.

b) Remove the PCMCIA card.

(c) Install the PCMCIA card into the FDAU PCMCIA slot.

1) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot. Inserting a PCMCIA card incorrectly can damage the FDAU.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(e) Push the EJECT button located at the bottom of the PCMCIA slot when "Remove-PC-Card" message shows on the LCD panel on the front of the FDAU.

NOTE: Do not use the EJECT button on the front of the FDAU panel. This button does not function.

(f) Remove the PMCIA card.

SUBTASK 31-31-22-970-002

(2) Do these steps to make a copy of the ACMS data onto an optical disk:

(a) Open the disk drive door in front of the FDAU.

(b) Make sure the disk drive is empty.

1) Do these steps if the disk drive is not empty:

a) Make sure the disk drive light is off.

b) Push the EJECT button on the front of the FDAU panel.

c) Remove the optical disk.

(c) Install the formatted optical disk into the disk drive.

(d) Remove the optical disk when the downloading is complete as required.

LOM 432

SUBTASK 31-31-22-970-006

(3) Do these steps to allow real-time ACMS data to be recorded onto an optical disk:

(a) Open the disk drive door in front of the FDAU.

(b) Make sure the disk drive is empty.

1) Do these steps if the disk drive is not empty:

a) Make sure the disk drive light is off.

b) Push the EJECT button on the front of the FDAU panel.

c) Remove the optical disk. Data previously recorded can be processed according to standard procedures.

(c) Do these steps on the FDAU:

1) Push ESC key until TELEDYNE CNTRLS show on the FDAU display.

2) Push ENT key to show MANDATORY MENU.

3) Push (+) to show NON-MANDATORY MENU.

4) Push ENT to show VERSION.

5) Push (+) three times to show RECORDING.

6) Push ENT to show DRIVE TEMP OK

7) Push ENT to show 0% FLASH DATA

(d) Install the formatted optical disk into the disk drive.

1) ACMS data will automatically record to an installed, correctly formatted, optical disk during flight or engine operations. Do these steps to make sure the optical disk will record correctly:

a) Push ESC key until TELEDYNE CNTRLS show on the FDAU display.

b) Push ENT key to show MANDATORY MENU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432 (Continued)

c) Push (+) to show NON-MANDATORY MENU.

d) Push ENT to show VERSION.

e) Push (+) three times to show RECORDING.

f) If an incorrectly formatted disk is installed, the display will change between MEDIA DETECTED and BAD MEDIA every 2–5 seconds.

g) If no disk is installed, the display will show NO MEDIA.

h) If a correctly formatted disk is installed, the display will show MEDIA DETECTED followed by RECORDER READY.

2) It will be necessary to remove the optical disk, process the data as required, and reinstall a re-formatted optical disk prior to completely filling the disk space allocated for ACMS data.

a) Data can be lost if the optical disk becomes full.

NOTE: Replace the optical disk before it is full.

LOM 427-432, 437, 438, 443, 444, 461-463, 466-999

SUBTASK 31-31-22-970-003

(4) Do these steps to make a copy of the ACMS data onto a diskette:

(a) Open the disk drive door in front of the FDAU.

(b) Make sure the disk drive is empty.

1) Do these steps if the disk drive is not empty:

a) Make sure the disk drive light is off.

b) Push the EJECT button on the front of the FDAU panel.

c) Remove the diskette.

(c) Install the formatted diskette into the disk drive.

(d) Remove the diskette when the downloading is complete.

END OF TASK

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460

TASK 31-31-22-400-806

11. Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface

A. General

(1) This procedure tells you how to install software in the flight data acquisition unit (FDAU) with the use of a personal computer memory card international association (PCMCIA) interface.

(2) The FDAU must contain these pieces of software:

(a) mandatory FDAU software

(b) ACMS non-mandatory FDAU software

(3) The airplane must be on the ground with the engines shutdown before you can install software.

(4) Make sure you know the correct software part number for the FDAU. For the FDAU to be an approved installation, the correct software part number must be installed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Procedure

SUBTASK 31-31-22-010-008

(1) Open the PCMCIA door on the front of the FDAU.

SUBTASK 31-31-22-200-005

(2) Make sure the PCMCIA slots are empty.

SUBTASK 31-31-22-410-006

(3) Install the load card into the left slot of the PCMCIA interface.

(a) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot. Inserting a PCMCIA card incorrectly can damage the FDAU.

(b) Make sure the IN PROG LED light is on.

NOTE: Do not remove the load card from the FDAU while the IN PROG LED is on. This will cause the FDAU to abort the upload. The upload takes approximately 5 minutes.

(c) Make sure the XFER COMP LED light comes on when the load is complete.

SUBTASK 31-31-22-020-011

(4) Push the eject button.

SUBTASK 31-31-22-020-012

(5) Remove the load card from the PCMCIA interface.

SUBTASK 31-31-22-470-002

(6) Do these steps to do a software configuration check of the FDAU:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(a) Do these steps at the data loader control panel:

1) Set the upper switch to SINGLE SYS.

2) Set the system select switch to the applicable position.

a) DFDAU position to install the mandatory FDAU software.

b) ACMS position to install the non-mandatory FDAU software.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460

(b) If you are not at the MAINT BITE INDEX menu on the CDU, select the line select key adjacent to the INDEX prompt.

(c) If you are at the MAINT BITE INDEX menu, select INIT REF key from the left CDU.

(d) Select the line-select-key adjacent to the INDEX prompt from the left CDU.

(e) Select the line-select-key adjacent to the SEL CONFIG prompt from the left CDU.

1) Make sure the correct software part number shows on the CDU.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-22-400-805

12. ACMS Data Output from the FDAU to an AlliedSignal PCMCIA Card

A. General

(1) This procedure tells you how to make a copy of ACMS data onto a personal computer memory card international association (PCMCIA) card with the use of the AlliedSignal FDAU P/N 967-0212-002.

(2) You must format the PCMCIA card with your applicable instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Procedure

SUBTASK 31-31-22-010-006

(1) Open the PCMCIA door on the front of the FDAU.

SUBTASK 31-31-22-200-004

(2) Make sure the PCMCIA slots are empty.

(a) If the PCMCIA slots are not empty, make sure the IN PROG LED is off before you remove an existing card.

SUBTASK 31-31-22-410-005

(3) Install the load card into the left slot of the PCMCIA interface.

(a) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot. Inserting a PCMCIA card incorrectly can damage the FDAU.

SUBTASK 31-31-22-860-013

(4) Make sure the IN PROG LED light comes on after approximately 5 seconds.

SUBTASK 31-31-22-860-014

(5) Make sure the XFER COMP LED does not blink at an approximately 1 second interval.

NOTE: This indicates that there is not sufficient space on the PCMCIA card. When this occurs, remove the PCMCIA card and install another PCMCIA card to complete the copy process.

SUBTASK 31-31-22-860-015

(6) Make sure the XFER FAIl LED does not come on.

NOTE: This indicates that there is a failure during the copy process.

SUBTASK 31-31-22-860-016

(7) Make sure the IN PROG LED light goes out when the copy process is complete.

SUBTASK 31-31-22-010-007

(8) PCMCIA Card Option 1.

(a) Leave the PCMCIA card installed to FDAU for ACMS recorded data.

NOTE: Remove the PCMCIA card only when the PCMCIA card is full and a new blank PCMCIA card is installed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426 (Continued)

SUBTASK 31-31-22-020-009

(9) PCMCIA card Option 2.

(a) Push the eject switch.

(b) Remove the PCMCIA card.

END OF TASK

LOM 433, 434, 439-442, 445-447, 453-460

TASK 31-31-22-400-818

13. ACMS Data Output from the FDAU to an Allied Signal PCMCIA Card

A. General

(1) This procedure tells you how to make a copy of ACMS data onto a personal computer memory card international association (PCMCIA) card.

(2) You must format the PCMCIA card with your applicable instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Procedure

SUBTASK 31-31-22-010-018

(1) Open the PCMCIA door on the front of the FDAU.

SUBTASK 31-31-22-200-012

(2) Make sure the PCMCIA slots are empty.

(a) If the PCMCIA slots are not empty, make sure the IN PROG LED is off before you remove an existing card.

SUBTASK 31-31-22-410-025

(3) Install the load card into the left slot of the PCMCIA interface.

(a) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot. Inserting a PCMCIA card incorrectly can damage the FDAU.

SUBTASK 31-31-22-860-073

(4) Make sure the IN PROG LED light comes on after approximately 5 seconds.

SUBTASK 31-31-22-860-074

(5) Make sure the XFER COMP LED does not blink at an approximately 1 second interval.

NOTE: This indicates that there is not sufficient space on the PCMCIA card. When this occurs, remove the PCMCIA card and install another PCMCIA card to complete the copy process.

SUBTASK 31-31-22-860-075

(6) Make sure the XFER FAIl LED does not come on.

NOTE: This indicates that there is a failure during the copy process.

SUBTASK 31-31-22-860-076

(7) Make sure the IN PROG LED light goes out when the copy process is complete.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 433, 434, 439-442, 445-447, 453-460 (Continued)

SUBTASK 31-31-22-010-019

(8) Push the eject button.

SUBTASK 31-31-22-020-039

(9) Remove the PCMCIA card.

——— END OF TASK ———

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460

TASK 31-31-22-400-819

14. ACMS In-Flight Output from the FDAU to an AlliedSignal PCMCIA Card

A. General

(1) This task makes an in-flight copy of ACMS data onto a personal computer memory card international association (PCMCIA) card.

(2) This task has a procedure to install the PCMCIA card before the flight and a procedure to remove the PCMCIA card after the flight.

(3) You must format the PCMCIA card with your applicable instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Install the PCMCIA Card Before the Flight

SUBTASK 31-31-22-010-024

(1) Open the PCMCIA card door on the front of the DFDAU.

SUBTASK 31-31-22-200-015

(2) Make sure the PCMCIA slots are empty.

(a) If the PCMCIA slots are not empty, make sure the IN PROG LED is off before you remove an existing card.

SUBTASK 31-31-22-410-030

(3) Install the PCMCIA card into the left slot of the card receptacle.

(a) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot. Inserting a PCMCIA card incorrectly can damage the FDAU.

SUBTASK 31-31-22-860-107

(4) Make sure the IN PROG LED light goes off after approximately 5 seconds.

SUBTASK 31-31-22-860-108

(5) During flight, the requested ACMS Reports, SAR Recording files, DAR Recordings, and/or QAR Recordings generated by the ACMS will be output to the PCMCIA card.

(a) Make sure the XFER FAIL LED does not come on.

NOTE: This indicates that there was a failure during the copy process.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Make sure the XFER COMP LED does not blink at an approximately 1 second interval.

NOTE: This indicates that there is not sufficient space on the PCMCIA card. When this occurs, remove the PCMCIA card and install another PCMCIA card to complete the copy process.

D. Remove the PCMCIA Card After the Flight

SUBTASK 31-31-22-860-109

(1) Make sure the IN PROG LED and all PCMCIA LEDs are off.

SUBTASK 31-31-22-010-025

(2) Push the eject button.

SUBTASK 31-31-22-020-048

(3) Remove the PCMCIA card.

SUBTASK 31-31-22-410-031

(4) Close the PCMCIA card door on the front of the DFDAU.

——— END OF TASK ———

LOM 427-431, 450, 461-999

TASK 31-31-22-400-823

15. ACMS In-Flight Output from the FDAU to a Teledyne PCMCIA Card

A. General

(1) This task makes an in-flight copy of ACMS data onto a personal computer memory card international association (PCMCIA) card.

(2) This task has a procedure to install the PCMCIA card before the flight and a procedure to remove the PCMCIA card after the flight.

(3) You must format the PCMCIA card with your applicable instructions before you can make a copy of the ACMS data. Please refer to your FDAU vendor's manual on how to format the recording media.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. PCMCIA Card Installation Before the Flight

SUBTASK 31-31-22-010-027

(1) Open the PCMCIA card door on the front of the DFDAU.

SUBTASK 31-31-22-200-016

(2) Make sure the PCMCIA slots are empty.

(a) If the PCMCIA slots are not empty, push the EJECT button located at the bottom of the PCMCIA.

(b) Remove the PCMCIA card.

SUBTASK 31-31-22-410-034

(3) Install the PCMCIA card into the left slot of the card receptacle.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-431, 450, 461-999 (Continued)

(a) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot.

NOTE: Inserting a PCMCIA card incorrectly can damage the FDAU.

SUBTASK 31-31-22-860-136

(4) During flight the requested ACMS Reports, SAR Recording files, DAR Recordings, and/or QAR Recordings generated by the ACMS will be output to the PCMCIA card.

D. PCMCIA Card Removal After the Flight

SUBTASK 31-31-22-010-028

(1) Push the EJECT button located at the bottom of the PCMCIA.

SUBTASK 31-31-22-020-051

(2) Remove the PCMCIA card.

SUBTASK 31-31-22-410-035

(3) Close the PCMCIA card door on the front of the DFDAU.

LOM ALL

——— END OF TASK ———

TASK 31-31-22-970-801

16. DFDAU Input Monitoring Maintenance Practices with DITS or Mnemonics

A. General

(1) A task to use the Digital Flight Data Acquisition Unit (DFDAU) for input monitoring with Digital Information Transfer System (DITS) or Mnemonics.

(2) For DITS the labels, Source Destination Identifier (SDI) and bit definitions are contained in the Interconnect document for that Line Replaceable Unit (LRU). The label and bit definitions are necessary for this task. If necessary, speak to your engineering department for specific information.

B. Location Zones

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

C. Procedure for Digital Information Transfer System (DITS)

SUBTASK 31-31-22-970-011

(1) Do these steps on the Control Display Unit (CDU) for input monitoring.

(a) Select the MENU key on the CDU.

(b) Select the <ACMS line select key.

(c) Select the <DISPLAY DATA line select key.

(d) Select the <DISP line select key adjacent to DITS.

NOTE: XXX is the DFDAU port number.
YYY is the label for the bus.
ZZ is the SDI (01 is sys 1, 10 is sys 2, 11 is sys 3 or center).
F is the Format of the data, (B is Binary, H is Hex).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Example 066/271/01/B. This example is to request data from port 66, label 271, SDI 01, Binary format.

(e) Put the information in the scratchpad in this format XXX/YYY/ZZ/F.

(f) Push an active line select key.

NOTE: The data can show in real time, or you can PRINT> line select key.

D. Procedures for Mnemonics

SUBTASK 31-31-22-970-012

(1) Do these steps on the CDU to monitor inputs.

(a) Select the MENU key on the CDU.

(b) Select the <ACMS line select key.

(c) Select the <DISPLAY DATA line select key.

(d) Select the <DISP line select key adjacent to MNEMONIC.

(e) Put the MNEMONIC name into the scratchpad and push an active line select key.

NOTE: The data will then be displayed in engineering units such as knots or PSI. For example if you enter TAT.L for the Mnemonic, total air temperature will show in degrees.

NOTE: The Mnemonics are programmed in the ACMS database and can change based on customization of the database.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DIGITAL FLIGHT DATA ACQUISITION UNIT (DFDAU) - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) Removal of the digital flight data acquisition unit (DFDAU).

(2) Installation of the FDAU.

B. The DFDAU is installed in the E3 electronics equipment rack, shelf No. 2, in the main equipment center.

C. The acquisition units are called many names by different suppliers. In this procedure the DFDAU, DFDMU, DFDAMU, FDAU and etc. will be referred to as the DFDAU.

TASK 31-31-22-000-801

2. Digital Flight Data Acquisition Unit (DFDAU) 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

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Removal Procedure

SUBTASK 31-31-22-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-22-010-001

(2) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-31-22-000-002

(3) Remove the Personal Computer Memory Card Interface Adapter (PCMCIA) or diskette from the Digital Flight Data Acquisition Unit (DFDAU) if one is installed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-22-000-001

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

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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELECTRONIC EQUIPMENT RACKS, E2, E3 AND E4

Flight Data Acquisition Unit Installation
Figure 401/31-31-22-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-22-400-801

3. Digital Flight Data Acquisition Unit (DFDAU) Installation

(Figure 401)

A. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
31-31-11-000-802	Flight Data Recorder Removal (P/B 401)
31-31-11-400-802	Flight Data Recorder Installation (P/B 401)
31-31-22-400-802	Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface (P/B 201)
31-31-22-400-803	Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL) (P/B 201)
31-31-22-400-806	Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface (P/B 201)
31-31-22-400-809	Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface (P/B 201)
31-31-22-470-801	Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader (P/B 201)
31-31-22-470-808	Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL) (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	DFDAU	31-31-22-04-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426, 433, 434, 439-442, 445-447, 453-460
		31-31-22-04-080	LOM 445
		31-31-22-05-005	LOM 427-432, 437, 438, 443, 444, 450-452, 461-999

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

D. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

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E. Digital Flight Data Acquisition Unit (DFDAU) Installation

SUBTASK 31-31-22-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-22-400-001

> **CAUTION** DO NOT TOUCH THE CONNECTORS PINS OR OTHER CONDUCTORS ON THE FDAU. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE FDAU.

(2) Install the DFDAU [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

(3) Install the Personal Computer Memory Card Interface Adapter (PCMCIA) or diskette to the Digital Flight Data Acquisition Unit (DFDAU) if one is provided.

(a) Make sure that the indentions on the edges of the PCMCIA card correctly align with the PCMCIA slot.

NOTE: Inserting a PCMCIA card incorrectly can damage the DFDAU.

F. Digital Flight Data Acquisition Unit (DFDAU) Installation Test

SUBTASK 31-31-22-860-004

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

NOTE: There can be a delay approximately from 90 seconds and up to 5 minutes before it becomes available to conduct the installation test after circuit breakers closure.

SUBTASK 31-31-22-710-001

(2) Check a software configuration of the DFDAU, do these steps:

NOTE: The software configuration check is written with Boeing test software installed in the DFDAU. If customized software is installed, the Airplane Condition And Monitoring System (ACMS) menu and functions can operate differently.

(a) Make sure that you know the correct software part number for the DFDAU.

NOTE: For the DFDAU to be an approved installation, the correct software part number must be installed.

(b) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

LOM ALL; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(c) For airplanes with two switches, on the P61 data loader control panel, do these steps at the data loader control panel:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Set the upper switch to SINGLE SYS.
2) Set the system select switch to the applicable position.
   a) DFDAU position for the DFDAU mandatory software.
   b) ACMS position for the DFDAU non-mandatory software.

      NOTE: The ACMS non-mandatory software is not displayed for SAGEM DFDAUs.

(d) On the Control Display Unit (CDU), do these steps:
1) Set the Line Select Key (LSK) labeled INDEX.
2) Set the LSK labeled SEL CONFIG.
   a) Make sure that the ACMS software part number in Line Labeled Disk P/N appears.
      <1> If the ACMS software part number is not correct, install the correct ACMS software or replace the DFDAU (Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface, TASK 31-31-22-400-806 or Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface, TASK 31-31-22-400-809 or Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL), TASK 31-31-22-400-803 or Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader, TASK 31-31-22-470-801 or Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface, TASK 31-31-22-400-802 or Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL), TASK 31-31-22-470-808).
   b) Make sure that the DFDAU mandatory software part number in Line Labeled Disk P/N is correct.
      <1> If necessary, install the correct DFDAU mandatory software or replace the DFDAU (Flight Data Acquisition Unit (FDAU) Software Installation with the use of the Allied Signal PCMCIA Interface, TASK 31-31-22-400-806 or Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne Integrated Optical Diskdrive Interface, TASK 31-31-22-400-809 or Flight Data Acquisition Unit (FDAU) Software Installation with an Airborne Data Loader (ADL), TASK 31-31-22-400-803 or Flight Data Acquisition Unit (FDAU) Software Installation with a Portable Data Loader, TASK 31-31-22-470-801 or Flight Data Acquisition Unit (FDAU) ACMS Application Software Installation with the use of the Teledyne PCMCIA Interface, TASK 31-31-22-400-802 or Digital Flight Data Acquisition Unit (DFDAU) Software Installation with an Enhanced Airborne Data Loader (eADL), TASK 31-31-22-470-808).

LOM ALL

SUBTASK 31-31-22-740-001

(3) Do this test of the DFDAU [1]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

1) Make sure that the flight recorder OFF light, on the P5 aft overhead panel, is off.

2) Make sure that the fault lights, on the DFDAU, are off.

(b) Remove the Solid-State Flight Data Recorder (SSFDR) (M00096), do this task: Flight Data Recorder Removal, TASK 31-31-11-000-802.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

1) Make sure that the DFDR light, on the DFDAU, comes on.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

(e) Install the SSFDR (M00096), do this task: Flight Data Recorder Installation, TASK 31-31-11-400-802.

(f) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999; AIRPLANES WITH TELEDYNE DFDAU P/N 2233000-815 OR 2233000-816-1

SUBTASK 31-31-22-740-004

(4) Make sure that the A/C registration is correct.

(a) Use the front panel of the DFDAU to make sure that the A/C registration is correct.

(b) If it is necessary, use the front panel to set the A/C registration to the correct value.

LOM 427-431, 437, 438, 443, 444, 450-452, 461-999; AIRPLANES WITH TELEDYNE DFDAU P/N 2233000-916

SUBTASK 31-31-22-740-002

(5) Make sure that the A/C registration is correct.

(a) Select the A/C registration on the DFDAU INIT page.

(b) Make sure that the A/C registration is correct.

(c) If it is necessary, set the A/C registration to the correct value.

SUBTASK 31-31-22-740-005

(6) As optional, check the A/C registration via CDU, do these steps:

(a) Set the LSK labeled INITIALIZATION on the DFDAU Main Menu page.

(b) Set the LSK labeled INITIALIZE AIRCRAFT.

(c) Make sure that the A/C registration is correct.

(d) If it is necessary, set the A/C registration to the correct value.

1) Use scratchpad to insert the three high order characters of the A/C registration.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

a) Push "-1L" button.

2) Use scratchpad to insert the three low order characters of the A/C registration.

a) Push "-2L" button.

LOM ALL

SUBTASK 31-31-22-410-001

(7) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

QUICK ACCESS RECORDER - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

(1) A removal of the recording media from the Wireless GroundLink - Quick Access Recorder (WQAR).

(2) An installation of the recording media in the WQAR.

LOM 423, 424, 427-431, 439, 441

(3) A procedure to verify and set the WQAR bipolar_rate parameter to AUTO.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

(4) A software load into the WQAR with the use of the Loadable Software Media Card.

(5) A software load into the WQAR with the use of the Compact Flash (CF) card.

B. For general information for software installation times and data loaders, do this task: On-Airplane Software - Installation, TASK 20-15-11-400-801.

TASK 31-31-24-000-802

2. WQAR Recording Media Removal

A. General

(1) This task provides the instructions on how to remove the recording media for the Wireless GroundLink - Quick Access Recorder (WQAR).

(2) Before you do this task, make sure that the airplane is on the ground with the engines shutdown and the FWD passenger door is OPEN.

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

SUBTASK 31-31-24-860-028

(1) Get access to the WQAR.

(a) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-31-24-860-027

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

E. Removal Procedure

SUBTASK 31-31-24-710-009

(1) Push the - or + keys to get to the CARTRIDGE EJECT menu.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-24-710-010

(2) Push the SEL key to change message to display TO CONTINUE PRESS +.

SUBTASK 31-31-24-710-011

(3) Push the + key to continue.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-210-004

(4) Make sure that the WQAR displays the message WAITING FOR CLEANUP for several seconds, followed by the message EJECT CARTRIDGE NOW.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

SUBTASK 31-31-24-210-001

(5) Make sure that the WQAR displays the message WAITING FOR CLEANUP, followed by the message REMOVE CF.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-010-022

(6) Open the access door of the WQAR.

NOTE: One of the Radio Frequency (RF) antennas may need to be removed to allow the door to open.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

SUBTASK 31-31-24-010-003

(7) Open the access door of the WQAR.

NOTE: One of the RF antennas may need to be removed to allow the door to open.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

SUBTASK 31-31-24-710-012

(8) Push the EJECT key on the WQAR.

SUBTASK 31-31-24-905-001

(9) Remove the recording media and put it in a container.

SUBTASK 31-31-24-410-002

(10) Close the access door of the WQAR.

——— END OF TASK ———

TASK 31-31-24-400-802

3. WQAR Recording Media Installation

A. General

(1) This task provides the instructions on how to install the recording media for the Wireless GroundLink - Quick Access Recorder (WQAR).

(2) Before you do this task, make sure that the airplane is on the ground with the engines shutdown and the FWD passenger door is OPEN.

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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 Installation

SUBTASK 31-31-24-860-085

(1) Get access to the WQAR.

(a) Make sure that this access panel is open:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-31-24-860-038

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

E. Installation Procedure

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-212-002

(1) Make sure that the WQAR displays the message INSERT NEW CARTRIDGE NOW.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

SUBTASK 31-31-24-210-002

(2) Make sure that the WQAR displays the message INSERT NEW CF.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-210-007

(3) Make sure that the FAIL light is on.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

SUBTASK 31-31-24-010-004

(4) Open the access door of the WQAR.

NOTE: One of the Radio Frequency (RF) antennas may need to be removed to allow the door to open.

SUBTASK 31-31-24-400-002

(5) Push the recording media into the WQAR.

SUBTASK 31-31-24-010-005

(6) Close the access door of the WQAR.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

NOTE: The WQAR will automatically reboot.

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LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-212-004

(7) Make sure that the WQAR displays the message SYSTEM WILL NOW REBOOT.

NOTE: The WQAR will automatically reboot.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

F. Put the Airplane Back to Its Normal Condition

SUBTASK 31-31-24-410-007

(1) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

——— END OF TASK ———

LOM 423, 424, 427-431, 439, 441

TASK 31-31-24-800-801

4. Verify and Set the bipolar_rate Parameter to AUTO

A. General

(1) This task includes steps to manually verify and change the bipolar_rate parameter via the front panel buttons of the QAR unit. Change the bipolar_rate parameter to AUTO when using a Teledyne wireless QAR where the dataframe has a different rate than the rate set via the QAR program pin.

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

D. Prepare the QAR

SUBTASK 31-31-24-760-001

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

SUBTASK 31-31-24-760-002

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

E. Procedure

SUBTASK 31-31-24-800-001

(1) Do these steps to view the current bipolar_rate parameter:

(a) Wait for the QAR to power on and for the front panel of the QAR to display “ILOff.”

(b) Press the MODE key. “SYSTEM STATE” will be displayed.

(c) Press the + key until “CONFIG” is displayed. Press the SEL key.

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LOM 423, 424, 427-431, 439, 441 (Continued)

(d) Press the + key until “DISPLAY” is displayed. Press the SEL key.

(e) Press the + key until the front panel displays the following:

bipolar_rate

[the current bipolar_rate parameter]

SUBTASK 31-31-24-860-017

(2) Do these steps to change the bipolar_rate parameter to AUTO:

(a) Press the MODE key. ”DISPLAY” will be displayed.

(b) Press the + key until “SET” is displayed. Press the SEL key.

(c) The front panel will display the following:

BoxId

[the unit serial number]

(d) Press the + key until the front panel displays the following:

bipolar_rate

[the current bipolar_rate parameter]

(e) Press the SEL key. The first character of the current bipolar_rate parameter will start to flash.

(f) Press the + or - key until the first character is changed to “A,” and then press the SEL key again. The second character will start to flash. Continue to change the next three characters so that the first four characters say “AUTO.”

NOTE: The bipolar_rate parameter change procedure can be aborted at any time by pressing the MODE key.

(g) Now that the first four characters say “AUTO,” use the + or - key to change the fifth character to be a blank character. Press the SEL key.

NOTE: The blank character is between the “z” and “!” characters.

(h) The front panel display of the QAR will display the following:

+ Accept Change

- Discard Change

(i) Press the + key to accept the change. Press the MODE key. The front panel will display the following:

+ Apply Change

- Discard Change

(j) Press the + key to apply the change. The front panel will display “SYSTEM WILL NOW REBOOT.”

(k) After the QAR comes on, make sure that the FAIL light on the front of the QAR is OFF.

(l) Press the MODE key. “SYSTEM STATE” will be displayed.

(m) Press the + key until “CONFIG” is displayed. Press the SEL key.

(n) Press the + key until “DISPLAY” is displayed. Press the SEL key.

(o) Press the + key until the front panel displays the following:

bipolar_rate

AUTO

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LOM 423, 424, 427-431, 439, 441 (Continued)

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-24-800-002

(1) Do these steps to display the system state on the front panel of the QAR:

(a) Press the MODE key until “CONFIG” is displayed.

(b) Press the + key until “SYSTEM STATE” is displayed. Press the SEL key to display the system state.

SUBTASK 31-31-24-760-003

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

——— END OF TASK ———

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

TASK 31-31-24-400-803

5. WQAR Software Load with the use of the Loadable Software Media Card

A. General

(1) This task provides the instructions on how to load software in the Wireless GroundLink - Quick Access Recorder (WQAR) with the use of the loadable software media card.

(2) The airplane must be on the ground with the engines shutdown before you can install software.

(3) If there are any errors that appear during the software load, stop the procedure and contact Teledyne Controls Product Support.

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Prepare for the Software Update

SUBTASK 31-31-24-470-001

(1) Make sure that you know the correct software part number for the WQAR. For the WQAR to be an approved installation, it must have the correct software part number installed

SUBTASK 31-31-24-860-019

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

SUBTASK 31-31-24-860-020

(3) Make sure that the WQAR is powered on and has completed booting up.

(a) Make sure that FAIL light is off.

1) If FAIL light is on, stop procedure and contact Teledyne Controls Product Support.

(b) Make sure that ILOff is shown in bottom right corner of the Front Panel Display.

1) If ILOff does not appear, stop procedure and wait for five minutes.

2) If ILOff stil does not appear, stop procedure and contact Teledyne Controls Product Support.

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D. WQAR Recording Media Card Removal

SUBTASK 31-31-24-020-001

(1) Do this task: WQAR Recording Media Removal, TASK 31-31-24-000-802.

(a) Make sure that INSERT NEW CATRIDGE NOW is shown on the Front Panel Display.

(b) Make sure that the FAIL light is on.

E. WQAR Software Load

SUBTASK 31-31-24-470-002

(1) Load software to the WQAR.

CAUTION	NO POWER INTERRUPTIONS CAN OCCUR DURING THIS UPDATE. IF POWER HAS STOPPED, YOU WILL NEED TO RETURN THE WQAR FOR REPAIR TO TELEDYNE CONTROLS.

CAUTION	MAKE SURE THAT WHEN YOU PUT PCMCIA CARDS INTO THE SLOT, IT IS IN THE CORRECT POSITION. THE CARD ONLY GOES IN ONE DIRECTION. THE BLACK ARROWS ON THE CARD LABEL SHOWS THE CORRECT CARD DIRECTION. EQUIPMENT DAMAGE WILL OCCUR, IF YOU FORCE THE CARD INTO THE DRIVE. IF YOU DO NOT OBEY INSTRUCTIONS, DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Insert the Loadable Software Media Card firmly into the right-most slot.

1) Use the black arrows on the card label for orientation.

(b) Make sure that SYSTEM WILL NOW REBOOT or REBOOTING PLEASE WAIT is shown on the Front Panel Display.

(c) Make sure that APPL LOAD SEL TO START is shown on the Front Panel Display.

(d) If the Front Panel Display does not shows APPL LOAD SEL TO START, do these steps:

1) Remove power from the WQAR.

2) Re-seat the Loadable Software Media Card.

3) Apply power to the WQAR.

4) Make sure that APPL LOAD SEL TO START is shown on the Front Panel Display.

a) If the problem still persist, contact Teledyne Controls Product support.

(e) Press the SEL button to initiate the WQAR Core software load.

1) Make sure that LOADING APPL PLEASE WAIT ... is shown on the Front Panel Display.

NOTE: This process takes approximately 5 minutes. During this process, the core software is loaded.

2) Make sure that REBOOTING... WAIT FOR PROMT is shown on the Front Panel Display.

3) Make sure that APPL LOAD SEL TO START is shown on the Front Panel Display.

(f) Press the SEL button to initiate the WQAR application software load.

1) Make sure that VERIFYING MEDIA PLEASE WAIT... is shown on the Front Panel Display.

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2) Make sure that LOADING APPL PLEASE WAIT is shown on the Front Panel Display.

NOTE: This process takes approximately 15 minutes. During this process, the Application software is verified and loaded.

F. Radio Firmware Installation

SUBTASK 31-31-24-470-003

(1) Install radio firmware.

(a) Make sure that G18 LDR:SEL=CONT MODE=EXIT is shown on the Front Panel Display.

(b) Check the MOD STATUS on the WQAR nameplate.

1) If MOD DOT 7 is punched, do these steps:

a) Press the MODE button to exit the firmware load.

b) Continue with the steps below for the LOAD IS COMPLETE EJECT LOAD MEDIA.

c) If MOD DOT 7 is not punched, than continue.

(c) Press the SEL button to initiate the radio firmware update.

NOTE: The radio firmware update process may take up to 1 hour depending on how many radios require the firmware. If all radios already have the new firmware, the update will take approximately 2 minutes per radio to verify the firmware version.

(d) Make sure that G18 SLDR LOAD PLEASE WAIT... and then G18: SLDR: DO NOT REMOVE WQAR PWR are shown on the WQAR Front Panel Display.

(e) Make sure that 1 2 3 4 5 6 7 8 LOADING XXXXXXXX SLDR... is shown on the WQAR Front Panel Display.

NOTE: The numbers refer to each radio installed in the WQAR. However, the display will show eight numbers irrespective of the numbers of radios installed in the WQAR. All Radios will go through three states: x, S, U - regardless of their firmware version. The display will update every few seconds. Not all interim states may be shown due the display update rate. If a radio is not installed or does not respond, (x) will be displayed at all times. Refer to the following table for radio status (x):

SLDR CODE	ALDR Code	Description
x	x	Radio Initializing or Radio installed
S	S	Deleting SMS messages (if any)
r	R	Reading image life
e	E	Erasing flash memory
p	P	Programming flash memory
v	V	Verifying Update
U	U	Update Complete
L	L	Radio could not be updated - Loader version mismatch

NOTE: When complete, the Front Panel Display displays “U” where a radio is installed and update is successful. See the 8–radio and 4–radio examples below:

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1 2 3 4 5 6 7 8 LOADING	or	1 2 3 4 5 6 7 8 LOADING
UUUUUUUU SLDR . . .		UUUUXXXX SLDR . . .

(f) Make sure that STARTING APPL LOAD ... and G18 APPL LOAD PLEASE WAIT... then G18 ALDR: DO NOT REMOVE WQAR PWR is shown on the Front Panel Display.

(g) Make sure that 1 2 3 4 5 6 7 8 LOADING XXXXXXXX APPL... is shown on the Front Panel Display.

NOTE: The numbers refer to each radio installed in the WQAR. However, the display will show eight numbers irrespective of the numbers of radios installed in the WQAR. All Radios will go through three states: x, S, U - regardless of their firmware version. The display will update every few seconds. Not all interim states may be shown due the display update rate. If a radio is not installed or does not respond, (x) will be displayed at all times. Refer to the table in step (5) for radio status (x). When complete, the Front Panel Display displays “U” where a radio is installed and update is successful. See the 8–radio and 4–radio examples below:

1 2 3 4 5 6 7 8 MODE	or	1 2 3 4 5 6 7 8 MODE
UUUUUUUU = EXIT		UUUUXXXX = EXIT

1) If after 1 hour, one or more installed radios still do not display a value of U, notify Teledyne Controls of the discrepancy.

(h) Press the MODE button to continue.

1) Make sure that G18 LOADER IS COMPLETE is shown on the Front Panel Display for about 5 seconds.

(i) Make sure that LOAD IS COMPLETE EJECT LOAD MEDIA is shown on the Front Panel Display.

(j) Eject the Loadable Software Media Card.

1) Press the black manual eject button located above the card (right-most card).

(k) Make sure that INSERT RECORDING MEDIA is shown on the Front Panel Display.

CAUTION

MAKE SURE THAT WHEN YOU PUT PCMCIA CARDS INTO THE SLOT, IT IS IN THE CORRECT POSITION. THE CARD ONLY GOES IN ONE DIRECTION. THE BLACK ARROWS ON THE CARD LABEL SHOWS THE CORRECT CARD DIRECTION. EQUIPMENT DAMAGE WILL OCCUR, IF YOU FORCE THE CARD INTO THE DRIVE. IF YOU DO NOT OBEY INSTRUCTIONS, DAMAGE TO EQUIPMENT CAN OCCUR.

(l) Insert firmly the original Recording Media Card that was removed into the right-most Personal Computer Memory Card Interface Adapter (PCMCIA) slot.

1) Use the black arrows on the card label for orientation.

(m) Make sure that REBOOTING PLEASE WAIT . . . is shown on the Front Panel Display.

NOTE: Then the WQAR will re-boot within 5 minutes.

(n) Make sure that the FAIL light extinguishes after the application has started.

(o) Make sure that the Front Panel Display shows a usual condition.

NOTE: Refer to OG2243800-300 for usual conditions.

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G. Application Software Load Verification

SUBTASK 31-31-24-470-004

(1) Check the application software load.

(a) Press the MODE button and make sure that the Front Panel Display shows SYSTEM STATE.

(b) Press the PLUS button and make sure that the Front Panel Display shows ADVISORIES.

(c) Press the SEL button and make sure that the Front Panel Display shows NO WARNINGS.

(d) Press the MODE button and make sure that the Front Panel Display shows ADVISORIES.

(e) Press the PLUS button repeatedly until the Front Panel Display shows S/W VERSION.

(f) Press the SEL button and make sure that the Front Panel Display shows correct BIOS and CORE version according to software part number installed.

(g) Press the PLUS button and make sure that the Front Panel Display shows correct WQAR version according to software part number installed.

CAUTION

DO NOT DO THIS TASK MORE TIMES THAN NECESSARY. IF YOU DO NOT OBEY, DAMAGE TO THE WQAR CAN OCCUR.

(h) If the software version letters do not appear in the display according to software part number installed, accomplish this task one additional time.

1) If there continues to be discrepancies, contact Teledyne Controls Product Support.

(i) Press the MODE button and make sure that the Front Panel Display shows S/W VERSION.

(j) Press the PLUS button repeatedly and make sure that the Front Panel Display shows CONFIG.

(k) Press the SEL button and make sure that the Front Panel Display shows DISPLAY.

(l) Press the SEL button and make sure that the Front Panel Display shows BoxId nnnn.

1) Make sure that the shown value nnnn is the same as the Line Replaceable Unit (LRU) serial number on the WQAR nameplate.

NOTE: The leading zeros in the serial number on the WQAR nameplate may not be present when viewing the Front Panel Display.

2) If the serial number does not appear or is different than the WQAR nameplate contact Teledyne Product Support.

(m) Press the MODE button twice and make sure that the Front Panel Display shows CONFIG.

(n) Press the PLUS button repeatedly until the Front Panel Display shows SYSTEM STATE.

(o) Press the SEL button and make sure that the Front Panel Display shows WQAR status.

H. WQAR Configuration Update Procedure

SUBTASK 31-31-24-470-005

(1) Update WQAR configuration.

(a) Press the MODE button and make sure that the Front Panel Display shows SYSTEM STATE.

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(b) Press the MINUS button and make sure that the Front Panel Display shows CANTRIDGE EJECT.

(c) Press the SEL button and make sure that the Front Panel Display shows TO CONTINUE PRESS +.

(d) Press the PLUS button and make sure that the Front Panel Display shows WAITING FOR CLEAN-UP.

1) Make sure that within a minute the Front Panel Display shows EJECT CARTRIDGE NOW.

2) Make sure that the FAIL light is on.

(e) Eject the WQAR Recording Media card.

1) Press the black manual eject button located above the card (right-most card).

(f) Make sure that INSERT NEW CARTRIDGE NOW is shown on the Front Panel Display.

CAUTION	MAKE SURE THAT WHEN YOU PUT PCMCIA CARDS INTO THE SLOT, IT IS IN THE CORRECT POSITION. THE CARD ONLY GOES IN ONE DIRECTION. THE BLACK ARROWS ON THE CARD LABEL SHOWS THE CORRECT CARD DIRECTION. EQUIPMENT DAMAGE WILL OCCUR, IF YOU FORCE THE CARD INTO THE DRIVE. IF YOU DO NOT OBEY INSTRUCTIONS, DAMAGE TO EQUIPMENT CAN OCCUR.

(g) Insert firmly the Configuration Load Media Card into the right-most slot.

1) Use the black arrows on the card label for orientation.

(h) Make sure that SYSTEM WILL NOW REBOOT is shown on the Front Panel Display.

1) Wait until the WQAR has fully rebooted.

(i) Press the MODE button and make sure that the Front Panel Display shows SYSTEM STATE.

(j) Press the MINUS button and make sure that the Front Panel Display shows CATRIDGE EJECT.

(k) Press the SEL button and make sure that the Front Panel Display shows TO CONTINUE PRESS +.

(l) Press the PLUS button and make sure that the Front Panel Display shows WAITING FOR CLEAN-UP.

1) Make sure that within a minute the Front Panel Display shows EJECT CARTRIDGE NOW.

(m) Eject the Configuration Load Media Card.

1) Press the black manual eject button located above the card (right-most card).

(n) Make sure that INSERT NEW CARTRIDGE NOW is shown on the Front Panel Display.

CAUTION	MAKE SURE THAT WHEN YOU PUT PCMCIA CARDS INTO THE SLOT, IT IS IN THE CORRECT POSITION. THE CARD ONLY GOES IN ONE DIRECTION. THE BLACK ARROWS ON THE CARD LABEL SHOWS THE CORRECT CARD DIRECTION. EQUIPMENT DAMAGE WILL OCCUR, IF YOU FORCE THE CARD INTO THE DRIVE. IF YOU DO NOT OBEY INSTRUCTIONS, DAMAGE TO EQUIPMENT CAN OCCUR.

(o) Insert firmly the original Recording Media Card that was removed into the right-most PCMCIA slot.

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1) Use the black arrows on the card label for orientation.

(p) Make sure that REBOOTING PLEASE WAIT . . . is shown on the Front Panel Display.

NOTE: Then the WQAR will re-boot within 5 minutes.

(q) Make sure that the FAIL light will extinguish during the reboot.

(r) After WQAR fully rebooted, press the MODE button and make sure that the Front Panel Display shows SYSTEM STATE.

I. WQAR Configuration Verification

NOTE: The following procedure verifies that an appropriate configuration has been loaded for this version of software. If there are any discrepancies between the values in the software part number installed and in the values displayed on the WQAR, contact Teledyne Controls Product Support for further guidance.

SUBTASK 31-31-24-470-006

(1) Check WQAR configuration.

(a) Press the MODE button and make sure that the Front Panel Display shows SYSTEM STATE.

(b) Press the MINUS button repeatedly until the Front Panel Display shows CONFIG.

(c) Press the SEL button and make sure that the Front Panel Display shows DISPLAY.

(d) Press the SEL button and make sure that the Front Panel Display shows BoxId nnnn.

(e) Press the PLUS button repeatedly until the Front Panel Display shows S/W VERSION.

1) Make sure that the shown value nnnn is the same as the LRU serial number on the WQAR nameplate.

2) If the serial number does not appear or is different than the WQAR nameplate contact Teledyne Product Support.

(f) Press the PLUS button and make sure that the Front Panel Display shows QARConfigVer n.

1) Make sure that the shown value “n” is the same as the “Q” value of the part number printed on the Configuration Load Media.

NOTE: For Example, if the part number printed on the Configuration Load Media is : XXX-Q2W3–11. The digit after the “Q” is “2” and it should be the same as the QARConfigVer parameter value (n).

2) If the shown value does not appear or is different than the WQAR nameplate contact Teledyne Controls Product Support.

(g) Press the PLUS button and make sure that the Front Panel Display shows WGLConfigVer m.

1) Make sure that the shown value “m” is the same as the “w” value of the part number printed on the Configuration Load Media.

NOTE: For Example, if the part number printed on the Configuration Load Media is : XXX-Q2W3–11. The digit after the “W” is “3” and it should be the same as the WGLConfigVer parameter value (m).

2) If the shown value does not appear or is different than the WQAR nameplate contact Teledyne Controls Product Support.

(h) Press the MODE button twice and make sure that the Front Panel Display shows CONFIG.

(i) Press the PLUS button repeatedly until the Front Panel Display shows SYSTEM STATE.

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(j) Press the SEL button and make sure that the Front Panel Display shows WQAR status.

(2) Close the access door of the WQAR.

——— END OF TASK ———

TASK 31-31-24-400-804

6. WQAR Software Load with the use of the Compact Flash (CF) Card

A. General

(1) This task provides the instructions on how to load software in the Wireless GroundLink - Quick Access Recorder (WQAR) with the use of the Compact Flash (CF) card.

(2) Before you install software, the airplane must be on the ground with the engines shutdown and the FWD passenger door is OPEN.

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 Software Load

SUBTASK 31-31-24-470-007

(1) Make sure that you know the correct software part number for the WQAR. For the WQAR to be an approved installation, it must have the correct software part number installed.

SUBTASK 31-31-24-470-008

(2) Make sure that the CF card, obtained from Teledyne Controls, formatted FAT-32 containing a Loadable Software Part (LSP) in ARINC 665 format.

NOTE: If the LSP card had been previously used as Recording Media for the WQAR, this card should be thoroughly (not QUICK) formatted (FAT-32) using a Windows® Vista (or newer) based PC before using it as an LSP card. Failure to comply may cause the LSP load to fail.

SUBTASK 31-31-24-470-009

(3) Make sure that you are aware of the ARINC 665 part number of the LSP on the CF card, do these steps:

(a) Insert the card into any Windows® based computer.

(b) Open the .LUH file using any text editor.

(c) Although most of the file will appear to be unreadable, the part number will be located in the first line of the file beginning with TDY.

SUBTASK 31-31-24-860-022

(4) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

SUBTASK 31-31-24-010-018

(5) Get access to the WQAR.

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(a) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-31-24-860-023

(6) Make sure that the WQAR is powered on and has completed booting up.

(a) Make sure that IOff is shown in bottom right corner of the Front Panel Display.

E. WQAR Software Load

SUBTASK 31-31-24-470-010

(1) Load software to the WQAR.

(a) Remove power from the WQAR.

1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

(b) Open the access door of the WQAR.

NOTE: One of the Radio Frequency (RF) antennas may need to be removed to allow the door to open.

(c) Remove the recording media card, do these steps:

1) Push the EJECT button under the CF card slot.

NOTE: The CF card slot is located at the bottom left of the compartment.

2) Remove the recording media card from the slot.

3) Keep this card ready to quickly insert when instructed.

CAUTION MAKE SURE THAT YOU TURN THE CF CARD CORRECTLY BEFORE YOU INSERT IT INTO THE SLOT. THE CARD INSERTS IN ONLY ONE DIRECTION. IF YOU PUSH THE CF CARD INTO THE DRIVE, DAMAGE TO EQUIPMENT CAN OCCUR.

(d) Orient and firmly insert the LSP CF card into the slot.

(e) Apply power to the WQAR.

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

(f) Make sure that the Load Media SEL TO CONTINUE is shown on the Front Panel Display for 30 seconds.

1) If you do not wish to install the LSP at this time, remove the LSP CF card within these 30 seconds.

(g) Press the SEL key to begin installation of the LSP, or wait 30 seconds to proceed with installation automatically.

(h) Make sure that Loadable CF Remove To Reboot is shown on the Front Panel Display.

(i) Remove the LSP CF card, do these steps:

1) Push the EJECT button under the CF card slot.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Remove the LSP CF card from the slot.

(j) Make sure that the WQAR immediately reboot and resume normal operation.

CAUTION	MAKE SURE THAT YOU TURN THE CF CARD CORRECTLY BEFORE YOU INSERT IT INTO THE SLOT. THE CARD INSERTS IN ONLY ONE DIRECTION. IF YOU PUSH THE CF CARD INTO THE DRIVE, DAMAGE TO EQUIPMENT CAN OCCUR.

(k) Firmly orient and insert the recording media card into the slot.

NOTE: A CF recording media card may be inserted any time during reboot. If a CF card is inserted after reboot, the WQAR may reboot again.

F. LSP Part Numbers after Software Load Verification

SUBTASK 31-31-24-470-011

(1) Check the LSP part numbers after software load.

(a) Press the MODE key and note that the Front Panel Display shows SYSTEM STATE.

(b) Press the + key repeatedly until the Front Panel Display shows UNIT INFO.

(c) Press the SEL key and note that the Front Panel Display shows DATE|TIME.

(d) Press the + key repeatedly until the Front Panel Display shows S/W VERSION.

(e) Press the SEL key and note that the Front Panel Display shows BOOT <Part Number>.

NOTE: The format of the part number will appear as an ARINC 665 part number. Contact Teledyne Controls Customer Services if the part number does not appear or is different than expected. Refer to OG2243800-300 for a discussion on part numbers for the WGL Comm+.

(f) Press the + or - keys repeatedly until the Front Panel Display shows other LSP entries such as:

1) “OPS”

2) “TMI”

3) “AMI”

4) “SWITCH”

5) “AII”

(g) Press the MODE key repeatedly until the Front Panel Display shows UNIT INFO.

(h) Press the + key repeatedly until the Front Panel Display shows SYSTEM STATE.

(i) Press the SEL key.

1) Make sure that the Front Panel Display shows a usual condition.

NOTE: Refer to OG2243800-300 for usual conditions.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-24-410-016

(1) Close the access door of the WQAR.

SUBTASK 31-31-24-410-017

(2) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

QUICK ACCESS RECORDER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the Quick Access Recorder (QAR).

(2) An installation of the QAR.

LOM 423, 424, 427-431, 437-439, 441, 445, 450, 458-460, 464-999

B. The QAR is on the E3 electronic equipment rack, shelf No. 3, in the main equipment center.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

TASK 31-31-24-000-801

2. Quick Access Recorder (QAR) Removal

(Figure 401)

A. References

Reference	Title
20-10-07-000-801	E/E Box Removal (P/B 201)
31-31-24-000-802	WQAR Recording Media Removal (P/B 201)

B. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

C. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

D. Prepare for the Removal

SUBTASK 31-31-24-860-111

(1) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

E. Removal Procedure

SUBTASK 31-31-24-710-013

(1) If necessary, remove the recording media from the Quick Access Recorder (QAR) (TASK 31-31-24-000-802).

SUBTASK 31-31-24-860-001

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-24-000-001

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

(3)

To remove the quick access recorder [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELECTRONIC EQUIPMENT RACKS E2, E3 AND E4

A

H58125 S0006574428_V2

Quick Access Recorder Installation
Figure 401/31-31-24-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD ELECTRONIC EQUIPMENT CENTER

A

1453293 S0000264521_V3

Quick Access Recorder Installation
Figure 401/31-31-24-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-24-400-801

3. Quick Access Recorder (QAR) Installation

(Figure 401)

A. General

(1) This task provides the instructions on how to install the Quick Access Recorder (QAR) and how to set the basic operator configuration parameters.

NOTE: Reference the QAR supplier operations guide for instructions on how to set operator specific configuration parameters.

B. References

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
31-31-24-400-802	WQAR Recording Media Installation (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Quick access recorder	31-31-24-06B-015	LOM 423, 424, 427-431, 439, 441
		31-31-24-06C-010	LOM 437, 438, 443-445, 450, 458-460, 464-999

D. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

E. Access Panels

Number	Name/Location
117A	Electronic Equipment Access Door

F. Preparation

SUBTASK 31-31-24-010-024

(1) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-31-24-860-110

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

G. Quick Access Recorder (QAR) Installation

SUBTASK 31-31-24-710-014

(1) If necessary, install the recording media in the Wireless GroundLink - Quick Access Recorder (WQAR) (TASK 31-31-24-400-802).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-24-420-010

> **CAUTION** DO NOT TOUCH THE CONNECTORS PINS OR OTHER CONDUCTORS ON THE QAR. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE QAR.

(2) To install the quick access recorder [1], do this task: E/E Box Installation, TASK 20-10-07-400-801.

SUBTASK 31-31-24-860-025

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	4	C01196	ACMS

H. Installed Software Check

SUBTASK 31-31-24-860-024

(1) Apply power to the WQAR.

(a) Make sure that the WQAR is powered on and has completed booting up.

(b) Make sure that the FAIL light is off and display shows normal QAR status.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

(c) Make sure that the ”ILOff” appears in bottom right corner of display.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

(d) Make sure that the ”IOff” appears in bottom right corner of display.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-710-015

(2) Check software version of the WQAR.

(a) Press the MODE button and note that the Front Panel Display shows SYSTEM STATE.

(b) Press the + button and note that the Front Panel Display shows ADVISORIES.

(c) Press the SEL button and note that the Front Panel Display shows NO WARNINGS.

(d) Press the MODE button and note that the Front Panel Display shows ADVISORIES.

(e) Press the + button repeatedly until the Front Panel Display shows S/W VERSION.

(f) Press the SEL button to see the software part number and their associated versions.

(g) Press the + or - buttons to scroll thru all software part numbers and versions.

(h) Make sure that the following version of software is displayed:

S/W: 709445 Version: x BIOS: 709219B CORE: 709446 y	or	BIOS: 709219 B CORE: 709446 y WQAR: 709445 x

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR (Continued)

NOTE: Take note of the Application software P/N 709445 version letter (x) and Core software P/N 709446 version letter (y). If the version of 709446 is M and 709445 is W, the unit already has the software per VSB 2243800–31–32. If any of the displayed versions are higher than M and W, then VSB 2243800–31–32 is not applicable to this unit.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

SUBTASK 31-31-24-710-016

(3) Check Loadable Software Part (LSP) of the WQAR.

(a) Press the MODE button and note that the Front Panel Display shows SYSTEM STATE.

(b) Press the + button repeatedly until the Front Panel Display shows UNIT INFO.

(c) Press the SEL button and note that the Front Panel Display shows DATE|TIME.

(d) Press the + button repeatedly until the Front Panel Display shows S/W VERSION.

(e) Press the SEL button and note that the Front Panel Display shows BOOT <Part Number>.

NOTE: The format of the part number will appear as an ARINC 665 part number. Contact Teledyne Controls Customer Services if the part number does not appear or is different than expected. Refer to OG2243800-300 for a discussion on part numbers for the WGL Comm+.

(f) Press the + or - buttons repeatedly until the Front Panel Display shows other LSP entries such as:

1) OPS

2) TMI

3) AMI

4) SWITCH

5) AII

(g) Press the MODE button repeatedly until the Front Panel Display shows UNIT INFO.

(h) Press the + button repeatedly until the Front Panel Display shows SYSTEM STATE.

(i) Press the SEL key.

1) Make sure that the Front Panel Display shows a usual condition.

NOTE: Refer to OG2243800-300 for usual conditions.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

I. Installation Test

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-860-012

(1) Do this to set the time and date on the WQAR:

(a) Push the MODE key to display WQAR MENU.

(b) Push the + or - keys until the DATE | TIME shows on the display.

(c) When DATE | TIME shows, push the SEL key.

(d) When DISPLAY shows, push SEL key.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR (Continued)

(e) When the current system date display shows, push SEL key.

NOTE: The DATE|TIME will show on the display.

(f) Push the + key to show SET on the display.

1) Use the SEL key to allow the calendar year to be modified.

2) When the year field on the display is flashing, use the + or - keys to select the year.

(g) Push the SEL key to allow the calendar month to be modified.

1) Use the + or - keys to select the month.

(h) Push the SEL key to allow the calendar day to be modified.

1) Use the + or - keys to select the day.

(i) Push the SEL key to allow the hour to be modified.

1) Use the + or - keys to select the hour.

(j) Push the SEL key to allow the minutes to be modified.

1) Use the + or - keys to select the minutes.

(k) Push the SEL key to allow the seconds to be modified.

1) Use the + or - keys to select the seconds.

(l) Push the SEL key to complete the entry of date and time.

NOTE: The WQAR will automatically reboot and display the new date and time.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

SUBTASK 31-31-24-860-015

(2) Do this to set the time and date on the WQAR.

(a) Push the MODE key to display SYSTEM STATE.

(b) Push the + or - keys until UNIT INFO shows on the display.

(c) Push the SEL key to display DATE | TIME.

(d) Push the SEL key to display DISPLAY.

(e) Push the + key to show SET on the display.

1) Push the SEL key to move the underscore cursor location as required.

a) Push the + or - keys to make changes.

(f) Push the MODE key to complete changes.

1) Push the + key to confirm changes.

NOTE: The WQAR will automatically reboot and display the new date and time.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-943-001

(3) Do this to enter the aircraft tail number into the QAR:

(a) Push the MODE key to display WQAR MENU.

(b) Push the + or - keys until the CONFIG Menu shows on the display.

(c) When CONFIG Menu shows, push the SEL key.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR (Continued)

(d) Push the + or - keys until SET is shows on the display and press the SEL key.

(e) Push the + or - keys until AircraftTailNum shows.

NOTE: The WQAR will display the first modifiable parameter with the parameter name on the top line and the current parameter value on the bottom line with the first character space blinking as a cursor.

(f) Push the SEL key to allow the AircraftTailNum to be modified.

(g) Do this to enter the aircraft tail number one character at a time:

1) Push the + or - until the applicable alphanumeric character is displayed.

2) Push the SEL key to select the character and move the cursor to the next character.

3) Continue until all the aircraft tail number characters have been entered.

(h) Press the SEL key.

1) Press the + key to accept the changes.

(i) Push the MODE key once to exit edit mode.

(j) Push + to apply the changes.

NOTE: The WQAR will automatically reboot and the new AircraftTailNum value will be in effect.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-362 OR 2243800-364 WQAR

SUBTASK 31-31-24-860-016

(4) Do this to enter the aircraft tail number into the WQAR:

(a) Push the MODE key to display SYSTEM STATE.

(b) Push the + or - keys until the display shows UNIT INFO.

(c) Push the SEL key to display DATE | TIME.

(d) Push the + or - keys until UPDATE TAIL NUMBER shows.

(e) Push the SEL key to allow the aircraft tail number to be modified.

(f) Do this to enter the aircraft tail number one character at a time:

1) Push the + or - until the applicable alphanumeric character is displayed.

2) Push the SEL key to select the character and move the cursor to the next character.

3) Continue until all the aircraft tail number characters have been entered.

(g) Press the MODE key.

1) Press the + key to accept the changes.

(h) Push + to confirm the tail number changes.

NOTE: The WQAR will automatically reboot and the new aircraft tail number value will be in effect.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR

SUBTASK 31-31-24-860-014

(5) Do this to enter the read_recen configuration parameter (Run Control Enable parameter) into the QAR.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999; AIRPLANES WITH 2243800-71, 2243800-73 OR 2243800-81 WQAR (Continued)

(a) Push the MODE key to display WQAR MENU.

(b) Push the + or - key until the CONFIG Menu shows on the display.

(c) When CONFIG Menu shows, push the SEL key.

(d) Push the + or - key until SET shows on the display and press the SEL key.

(e) Push the + or - key until read_recen shows on the display and press the SEL key.

NOTE: The WQAR will display the first modifiable parameter with the parameter name on the top line and the current parameter value on the bottom line with the first character space blinking as a cursor.

(f) The current value of read_recen (the Run Control Enable parameter) will flash.

(g) Press the + or - key to set the airline modifiable read_recen configuration parameter (Run Control Enable parameter) to “0”.

(h) Push the SEL key until Accept Change displays and press the + key.

(i) Push the MODE key until Apply Changes displays and press the + key.

NOTE: The WQAR will automatically reboot and the new read_recen value will be in effect.

(j) Do this to verify read_recen parameter change after system reboot.

1) Push the MODE key to display WQAR MENU.

2) Push the + or - key until the CONFIG Menu shows on the display and press the SEL key.

3) Push the + or - key until SET shows on the display and press the SEL key.

4) Push the + or - key until read_recen shows on the display and press the SEL key.

5) Verify value is the appropriate airline modifiable parameter.

6) Push the MODE key until WQAR MENU is displayed.

LOM 423, 424, 427-431, 437-439, 441, 443-445, 450, 458-460, 464-999

SUBTASK 31-31-24-710-002

(6) Make sure that the FAIL light does not show on the quick access recorder [1].

J. Put the Airplane Back to its Usual Condition

SUBTASK 31-31-24-410-003

(1) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

EVENT/PRINT SWITCH PANEL - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the event/print switch panel.

(2) An installation of the event/print switch panel.

B. The event/print switch panel is installed on the aisle stand, P8, in the flight compartment.

TASK 31-31-28-000-801

2. Event/Print Switch Panel Removal

(Figure 401)

A. Location Zones

Zone	Area
211	Flight Compartment - Left

B. Procedure

SUBTASK 31-31-28-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-28-020-001

(2) Loosen the four quarter-turn fasteners [3] on the event/print switch panel [1].

SUBTASK 31-31-28-010-001

(3) Remove the event/print switch panel [1].

SUBTASK 31-31-28-020-002

(4) Disconnect the electrical connector [2].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

NOTE:

THE LOCATION OF THE EVENT/PRINT SWITCH CAN VARY ON THE AISLE STAND.

AISLE STAND

A

H22520 S0006574441_V2

Event/Print Switch Module Installation
Figure 401/31-31-28-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-28-400-801

3. Event/Print Switch Panel Installation

A. Tools/Equipment

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

Reference	Description
COM-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Event/print switch panel	31-31-28-05-010	LOM 412, 415, 423, 424, 439, 441
		31-31-28-05A-010	LOM 465-999

C. Location Zones

Zone	Area
211	Flight Compartment - Left

D. Event/Print Switch Panel Installation

SUBTASK 31-31-28-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-28-420-001

(2) Connect the electrical connector [2].

SUBTASK 31-31-28-410-001

(3) Install the event/print switch panel [1].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-28-420-002

(4) Tighten the quarter-turn fasteners [3] on the event/print switch panel [1].

E. Installation Test

SUBTASK 31-31-28-480-001

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(1) Do these steps to prepare the L3 portable interface unit, COM-2553:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

(b) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

(d) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

(e) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

(f) Set the WORD and SUBFRAME as specified.

SUBTASK 31-31-28-480-002

(2) Do these steps to prepare the tester, COM-1807, for the installation test:

(a) Remove the shorting plug from the system test plug on the P18 panel.

(b) Use the adapter cable, SPL-1808, to connect the tester, COM-1807, to the system test plug.

(c) Make sure that the DFDAU switch on the adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

(d) Make sure that the FDEP switch on the adapter cable, SPL-1808, is in the DISCONNECT position.

(e) Put the power switch on the tester, COM-1807, to the on position.

(f) Set the tester, COM-1807, to read 256 WPS:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-28-480-003

(3) Do the steps below to prepare the handheld download unit, COM-913, for the event switch test.

NOTE: These steps are only applicable to airplanes with AlliedSignal Solid-State Flight Data Recorder (SSFDR).

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

(b) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

(d) Push the red button on the handheld download unit, COM-913.

(e) Set the DSDU switch on the handheld download unit, COM-913.

(f) Set the BASE switch handheld download unit, COM-913.

(g) Set the WORD and SUBFRAME as specified.

SUBTASK 31-31-28-710-001

(4) Do this test of the event switch:

(a) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

LOM 412, 415, 423, 424

(b) Set the tester, to word 144, subframe 0.

LOM 439, 441, 465-999

(c) Set the tester, to word 368, subframe 0.

LOM 412, 415, 423, 424, 439, 441, 465-999

(d) Push and hold the event switch on the event/print switch panel [1].

1) Make sure that bit 1 on the tester, is a 0.

(e) Release the event switch.

1) Make sure that bit 1 on the tester, is a 1.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-28-860-004

(1) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-28-760-001

(2) Remove power from the tester.

SUBTASK 31-31-28-080-001

(3) Remove the tester from the Flight Data Recorder System (FDRS).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-28-420-004

(4) If necessary, install the shorting plug on the system test plug on the P18 panel.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AILERON POSITION TRANSMITTER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the aileron position transmitter

(2) An installation of the aileron position transmitter

(3) An installation test of the aileron position transmitter.

TASK 31-31-31-000-801

2. Aileron Position Transmitter Removal

(Figure 401)

A. References

Reference	Title
27-11-00-860-801	Pressure from the Aileron Hydraulic Systems A and B - Deactivation (P/B 201)

B. Location Zones

Zone	Area
572	Left Wing - Aileron
672	Right Wing - Aileron

C. Access Panels

Number	Name/Location
571BB	Lower Outboard Fixed Trailing Edge Access Panel

D. Aileron Position Transmitter Removal

SUBTASK 31-31-31-840-001

(1) Do this task: Pressure from the Aileron Hydraulic Systems A and B - Deactivation, TASK 27-11-00-860-801.

SUBTASK 31-31-31-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-31-020-001

(3) Remove the screws [2] and screws [3].

(a) Remove this access panel:

Number	Name/Location
571BB	Lower Outboard Fixed Trailing Edge Access Panel

SUBTASK 31-31-31-020-002

> **WARNING**
> PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(4) Remove the aileron position transmitter [9], do these steps:

(a) Disconnect the electrical connector [4] from the aileron position transmitter [9].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Loosen the crank clamping screw [6] and support bracket clamping screw [8].

(c) Remove the aileron position transmitter [9] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Aileron Position Transmitter Installation
Figure 401/31-31-31-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AILERON POSITION TRANSMITTER
(LEFT TRANSMITTER IS SHOWN,
RIGHT TRANSMITTER IS EQUIVALENT)

B

F98526 S0006574449_V4

Aileron Position Transmitter Installation
Figure 401/31-31-31-990-801 (Sheet 2 of 3)

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F98527 S0006574450_V3

Aileron Position Transmitter Installation
Figure 401/31-31-31-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-31-400-801

3. Aileron Position Transmitter Installation

(Figure 401)

A. References

Reference	Title
27-11-00-860-801	Pressure from the Aileron Hydraulic Systems A and B - Deactivation (P/B 201)
27-11-00-860-802	Pressure to the Aileron Hydraulic Systems A and B - Activation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
9	Transmitter	31-31-31-01-135	LOM ALL

C. Location Zones

Zone	Area
572	Left Wing - Aileron
672	Right Wing - Aileron

D. Installation Procedure

SUBTASK 31-31-31-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-31-860-003

WARNING

MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS AND THE THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) If the Ailerons Hydraulic Systems are not depressurized, do this task: Pressure from the Aileron Hydraulic Systems A and B - Deactivation, TASK 27-11-00-860-801.

SUBTASK 31-31-31-020-003

(3) Install the aileron position transmitter [9]:

(a) Make sure that the adjustable rod is set at 17.01 inches (432.05 mm).

(b) Install the aileron position transmitter [9] into the transmitter support bracket [7] and crank [5].

(c) Align the EZ marks on the aileron position transmitter [9] body and the index mark on the transmitter shaft with the centerline of the crank [5] (View A-A, Figure 401).

(d) Tighten the crank clamping screw [6] and the transmitter support bracket clamping screw [8] to 30-35 pound-inches (3.39-3.95 newton-meter).

(e) Install the electrical connector [4] onto the aileron position transmitter [9].

(4) Do this task: Pressure to the Aileron Hydraulic Systems A and B - Activation, TASK 27-11-00-860-802.

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SUBTASK 31-31-31-700-001

(5) Do this task: Aileron Position Transmitter Installation Test, TASK 31-31-31-700-801.

END OF TASK

TASK 31-31-31-700-801

4. Aileron Position Transmitter Installation Test

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70

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(Continued)

Reference	Description
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I
C00528	Compound - Corrosion Preventive, Petroleum Hot Application (Soft Film)	MIL-C-11796 Class III

D. Location Zones

Zone	Area
572	Left Wing - Aileron
672	Right Wing - Aileron

E. Access Panels

Number	Name/Location
571BB	Lower Outboard Fixed Trailing Edge Access Panel

F. Installation Test

SUBTASK 31-31-31-710-001

(1) Use one of the tester listed below to do the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the HHMPI cable to the SSFDR:

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- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Select the LIVE DATA VIEW.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Use the portable tester adapter cable, SPL-1808, to connect the tester to the system test plug.

3) Make sure that the DFDAU switch on the portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

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LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) Do these steps to prepare the handheld download unit, COM-913, for the system test:

NOTE: The Handheld Download unit can only be used on airplane with AlliedSignal/Honeywell solid state FDR installed.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the red button on the tester.

6) Set the DSDU switch.

7) Set the BASE switch.

8) Set the WORD and SUBFRAME as specified.

NOTE: The HHDLU do not have a selection for subframe 0. Make a selection of subframe ALL or subframe 1 through 4 when a task uses subframe 0.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do these steps to prepare the data acquisition ruggedized tool, COM-23709:

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT.
    b) Select the applicable DATA RATE.
    c) Select Normal DISPLAY MODE.
    d) Select the applicable SYNC TYPE.
    e) Select NO for the SUPER FRAME.
12) Push the F4 button to select NEXT.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.

    NOTE: For SUBFRAME 0, select ALL.
14) Push the F4 button to select START MONITORING.
15) If it is necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push the F4 button to select OK.

LOM ALL

SUBTASK 31-31-31-860-005

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-31-860-006

(3) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, is in the TEST position.

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SUBTASK 31-31-31-860-007

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 31-31-31-860-011

(5) Make sure that the aileron is set at the zero unit of trim.

SUBTASK 31-31-31-820-001

(6) Do these steps to test the aileron position transmitter:

(a) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(b) Set the FLT CONTROL A and B switches, on the P5 forward overhead panel, to the OFF position.

(c) Loosen the support bracket clamping screw [8] on the transmitter support bracket [7].

(d) Set the tester to the following subframe and word:

1) For the left aileron, set to subframe 0, word 17.

2) For the right aileron, set to subframe 0, word 23.

(e) Rotate the aileron position transmitter [9] slowly in each direction until you get an octal value of between 0000-0037 or 7741-7777 on the portable tester.

(f) Tighten the support bracket clamping screw [8] to 30 in-lb (3.4 N·m) - 35 in-lb (4.0 N·m).

(g) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(h) Set the FLT CONTROL A and B switches, on the P5 forward overhead panel, to the ON position.

(i) Do these steps to test a left aileron position transmitter [9] installation:

1) Rotate the Captain's control wheel to the full left position.

2) Make sure that you get an octal value between 7172 - 7314.

3) Rotate the Captain's control wheel to the full right position.

4) Make sure that you get an octal value between 0466 - 0610.

(j) Do these steps to test a right aileron position transmitter [9] installation:

1) Rotate the Captain's control wheel to the full left position.

2) Make sure that you get an octal value between 7167 - 7311.

3) Rotate the Captain's control wheel to the full right position.

4) Make sure that you get an octal value between 0463 - 0605.

(k) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-31-31-410-001

(7) Do these steps to install this access panel:

Number	Name/Location
571BB	Lower Outboard Fixed Trailing Edge Access Panel

(a) Put the lower outboard fixed trailing edge access panel [1] into position in the lower wing.

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(b) Apply primer, C00259, to the holes of the lower outboard fixed trailing edge access panel [1].

(c) Apply compound, C00528, to the screws [2] and screws [3].

(d) Install the screws [2] and screws [3].

G. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-31-710-002

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-31-860-008

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-31-840-004

(3) Remove power from the tester.

SUBTASK 31-31-31-860-009

(4) Remove the tester from the Flight Data Recorder System (FDRS).

SUBTASK 31-31-31-420-001

(5) Install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CONTROL WHEEL POSITION SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the control wheel position sensor.

(2) An installation of the control wheel position sensor.

(3) An installation test of the control wheel position sensor.

TASK 31-31-32-000-801

2. Control Wheel Position Sensor Removal

(Figure 401)

A. References

Reference	Title
27-11-00-860-801	Pressure from the Aileron Hydraulic Systems A and B - Deactivation (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. Prepare for the Control Wheel Position Sensor Removal

SUBTASK 31-31-32-840-001

(1) Do this task: Pressure from the Aileron Hydraulic Systems A and B - Deactivation, TASK 27-11-00-860-801.

SUBTASK 31-31-32-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-32-010-001

(3) Open this access panel:

Number	Name/Location
112A	Forward Access Door

E. Control Wheel Position Sensor Removal

SUBTASK 31-31-32-020-004

WARNING

PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(1) Remove the control wheel position sensor [5]:

(a) Disconnect the electrical connector [1].

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(b) Remove the screws [6], washers [7] and clamps [8].

(c) Loosen the flex coupling screw [4] and the mounting bolts [2] and washers [3].

(d) Remove the control wheel position sensor [5].

END OF TASK

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Control Wheel Position Sensor Installation
Figure 401/31-31-32-990-801 (Sheet 1 of 3)

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G03673 S0006574457_V3

Control Wheel Position Sensor Installation
Figure 401/31-31-32-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FIRST OFFICER'S AILERON TRANSFER MECHANISM

C

G05542 S0006574458_V4

Control Wheel Position Sensor Installation
Figure 401/31-31-32-990-801 (Sheet 3 of 3)

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TASK 31-31-32-400-801

3. Control Wheel Position Sensor Installation

(Figure 401)

A. References

Reference	Title
27-11-00-860-801	Pressure from the Aileron Hydraulic Systems A and B - Deactivation (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-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
5	Sensor	27-11-61-01-180	LOM ALL
		27-41-51-01-135	LOM ALL
		27-41-51-02-150	LOM ALL
		31-31-32-01-055	LOM ALL

E. Location Zones

Zone	Area
110	Subzone - Body Station 130 to Station 396
112	Area Forward of Nose Landing Gear Wheel Well

F. Prepare for the Control Wheel Position Sensor Installation

SUBTASK 31-31-32-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-32-860-003

(2) If the hydraulic system are not depressurized, do this task: Pressure from the Aileron Hydraulic Systems A and B - Deactivation, TASK 27-11-00-860-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G. Procedure

SUBTASK 31-31-32-020-005

> **WARNING** PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(1) Install the control wheel position sensor [5]:

> **WARNING** USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the shaft of the sensor.

NOTE: Make sure the compound does not get on the sensor bearing. This can cause friction on the bearing.

(b) Install the rig pins A/S-1 and A/S-1A from the test set rigging pin kit, SPL-1585 into the aileron transfer mechanism.

1) Make sure the rig pin A/S-1 is fully in the aileron transfer mechanism.

2) Hold the two rig pins to make sure they do not fall out.

(c) Make a pencil line on the sensor mounting bracket so that the line is center and perpendicular to the flat side of the flex coupling hole.

NOTE: This will help to align the index mark on the sensor body to the center line of the sensor shaft.

(d) Insert the shaft of the sensor into the hole of the flex coupling.

(e) Install the mounting bolts [2] and washers [3].

(f) Thread the mounting bolts [2] until it clamp down on the sensor body.

(g) Align the index mark on the sensor body to the pencil line on the sensor mounting bracket.

(h) Tighten the 3 sensor mounting bolts [2] to 25 - 30 pound-inches (2.8 - 3.4 newton-meters).

(i) Tighten the flex coupling screw [4] to 12 - 15 pound-inches (1.4 - 1.7 newton-meters).

(j) Install the cable and the cable clamp screws [6].

(k) Install the sensor [5].

(l) Install the electrical connector [1].

H. Control Wheel Position Sensor Installation Test

SUBTASK 31-31-32-710-002

(1) Do this task: Control Wheel Position Sensor Installation Test, TASK 31-31-32-820-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-32-820-801

4. Control Wheel Position Sensor Installation Test

(Figure 401)

A. References

Reference	Title
27-11-00-860-802	Pressure to the Aileron Hydraulic Systems A and B - Activation (P/B 201)
27-21-00-700-820-002	Wheel to Rudder Interconnect System Test (P/B 501)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1670	Mount - Control Wheel Protractor Part #: F72790 Supplier: 81205
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Location Zones

Zone	Area
110	Subzone - Body Station 130 to Station 396
112	Area Forward of Nose Landing Gear Wheel Well

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Installation Test

SUBTASK 31-31-32-710-001

(1) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Select the LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push the SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Use the portable tester adapter cable, SPL-1808, to connect the portable tester to the system test plug.

3) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) Do the steps below to prepare the handheld download unit, COM-913, for the system test:

NOTE: The handheld download unit, COM-913, used only on the airplane with AlliedSignal SSFDR.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the power button on the handheld download unit, COM-913.

6) Set the DSDU switch.

7) Set the BASE switch.

8) Set the WORD and SUBFRAME as specified.

NOTE: The Hand-Held Down-load Unit (HHDLU) do not have a selection for subframe 0. Make a selection of subframe ALL or subframe 1 thru 4 when a task uses subframe 0.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709.

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23 (Continued)

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT
    b) Select the applicable DATA RATE
    c) Select Normal DISPLAY MODE
    d) Select the applicable SYNC TYPE
    e) Select NO for the SUPER FRAME.
12) Push F4 button to select NEXT.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.

    NOTE: For SUBFRAME 0, select ALL.
14) Push F4 button to select START MONITORING.
15) If it is necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-32-860-005

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-32-860-006

(3) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-32-860-007

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU REMOVE OR INSTALL HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU REMOVE HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Do this task: Pressure to the Aileron Hydraulic Systems A and B - Activation, TASK 27-11-00-860-802.

SUBTASK 31-31-32-200-001

(5) Make sure that the rigging pins A/S-1 and A/S-1A are installed in the aileron transfer mechanism.

SUBTASK 31-31-32-020-006

(6) Make sure that the map holder assembly is removed from the control wheel.

SUBTASK 31-31-32-490-001

(7) Make sure that the control wheel protractor mount, SPL-1670, is installed.

NOTE: The intent is to make sure that the control wheel is in the neutral position prior to adjustment of the control wheel position sensor.

SUBTASK 31-31-32-820-001

(8) Do these steps to adjust the control wheel position sensor [5]:

(a) Loosen the sensor mounting bolts [2].

(b) Do this step to adjust the left control wheel position transmitter:

1) Set the tester to subframe 0, word 19.

(c) Do this step to adjust the right control wheel position sensor [5]:

1) Set the tester to subframe 0, word 25.

(d) Turn the body of the control wheel position sensor [5] slowly in each direction until you get an octal value between 7771 to 0007 on the tester.

(e) Tighten the sensor mounting bolts [2] to 30 in-lb (3.4 N·m) - 35 in-lb (4.0 N·m).

SUBTASK 31-31-32-090-001

(9) Remove the control wheel protractor mount, SPL-1670, from the control wheel.

SUBTASK 31-31-32-420-001

(10) Install the map holder assembly on the control wheel.

SUBTASK 31-31-32-020-003

(11) Remove the rig pins A/S-1 and A/S-1A from the aileron transfer mechanism.

SUBTASK 31-31-32-860-011

(12) Do this task: Wheel to Rudder Interconnect System Test, TASK 27-21-00-700-820-002.

SUBTASK 31-31-32-410-001

(13) Close this access panel:

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-32-020-007

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-32-860-008

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-32-840-003

(3) Remove power from the tester.

SUBTASK 31-31-32-860-009

(4) Remove the tester from the Flight Data Recorder System (FDRS).

SUBTASK 31-31-32-420-002

(5) Install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER POSITION TRANSMITTER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the rudder position transmitter.

(2) An installation of the rudder position transmitter.

(3) An installation test of the rudder position transmitter.

TASK 31-31-41-000-801

2. Rudder Position Transmitter Removal

(Figure 401)

A. References

Reference	Title
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (P/B 201)

B. Location Zones

Zone	Area
325	Vertical Fin - Rudder

C. Access Panels

Number	Name/Location
324HL	Vertical Fin, Access

D. Removal Procedure

SUBTASK 31-31-41-840-001

(1) Do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

SUBTASK 31-31-41-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-41-010-001

(3) Open this access panel:

Number	Name/Location
324HL	Vertical Fin, Access

SUBTASK 31-31-41-020-001

> **WARNING** PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(4) Remove the rudder position transmitter [1]:

(a) Disconnect the electrical connector [2] from the rudder position transmitter [1].

(b) Loosen the support bracket screw [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Remove the crank screw [6].

(d) Remove the rudder position transmitter [1] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Rudder Position Transmitter Installation
Figure 401/31-31-41-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Rudder Position Transmitter Installation
Figure 401/31-31-41-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

A-A

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Rudder Position Transmitter Installation
Figure 401/31-31-41-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-41-400-801

3. Rudder Position Transmitter Installation

(Figure 401)

A. References

Reference	Title
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Transmitter	31-31-41-01-020	LOM ALL

C. Location Zones

Zone	Area
325	Vertical Fin - Rudder

D. Installation Procedure

SUBTASK 31-31-41-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-41-860-003

(2) If the rudder hydraulic systems are not depressurized, do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

SUBTASK 31-31-41-020-002

WARNING PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(3) Install the rudder position transmitter [1]:

(a) Make sure that the adjustable control rod [4] is set at 10.59 inches (268.97 mm).

(b) Install the rudder position transmitter [1] into the support bracket [7] and crank [5] with the transmitter shaft pointing downward.

(c) Align the EZ marks on the rudder position transmitter [1] body and the index mark on the transmitter shaft [8] with the centerline of the crank [5].

(d) Install the crank screw [6].

(e) Tighten the transmitter support bracket screw [3] and the crank screw [6] to 30-35 pound-inches (3.39-3.95 newton-meters).

(f) Install the electrical connector [2] to the rudder position transmitter.

SUBTASK 31-31-41-860-014

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-41-700-002

(5) Do this task: Rudder Position Transmitter Installation Test, TASK 31-31-41-700-801.

END OF TASK

TASK 31-31-41-700-801

4. Rudder Position Transmitter Installation Test

(Figure 401)

A. References

Reference	Title
27-21-00-800-801	Rudder Hydraulic System A, B, or Standby Pressurization (P/B 201)
27-21-00-840-801	Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Location Zones

Zone	Area
325	Vertical Fin - Rudder

D. Access Panels

Number	Name/Location
324HL	Vertical Fin, Access

E. Installation Test

SUBTASK 31-31-41-710-001

(1) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696

ECCN 9E991 BOEING PROPRIETARY - See title page for details

- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Select the LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR: Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Use the portable tester adapter cable, SPL-1808, to connect the portable tester to the system test plug.

3) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

7) Set the WORD and SUBFRAME as specified.

(d) Do the steps below to prepare the handheld download unit, COM-913, for the system test:

NOTE: These steps are only applicable to airplanes with AlliedSignal SSFDR.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the red button on the tester.

6) Set the DSDU switch.

7) Set the BASE switch.

8) Set the WORD and SUBFRAME as specified.

NOTE: The Hand-Held Down-load Unit (HHDLU) do not have a selection for subframe 0. Make a selection of subframe ALL or subframe 1 thru 4 when a task uses subframe 0.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709.

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT
    b) Select the applicable DATA RATE
    c) Select Normal DISPLAY MODE
    d) Select the applicable SYNC TYPE
    e) Select NO for the SUPER FRAME.
12) Push F4 button to select NEXT.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.

    NOTE: NOTE: For SUBFRAME 0, select ALL.
14) Push F4 button to select START MONITORING.
15) If it is necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-41-860-006

(2) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-41-860-007

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU REMOVE OR INSTALL HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU REMOVE HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) Pressurize the Rudder Hydraulic Systems A or B (TASK 27-21-00-800-801).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-41-860-011

(4) Make sure that the rudder is set to zero unit of trim position.

SUBTASK 31-31-41-860-012

(5) Move the rudder pedal to make sure that the system is at the center.

SUBTASK 31-31-41-860-013

(6) Make sure that the trailing edge of the rudder is in neutral position.

SUBTASK 31-31-41-820-001

(7) Do these steps to adjust the rudder position sensor:

(a) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

(b) Loosen the screw [3] on the transmitter support brackets.

(c) Set the tester to subframe 0, word 37.

(d) Turn the body of the rudder position transmitter slowly in each direction until you get an octal value between 7745 to 0034 on the tester.

(e) Tighten the transmitter support bracket screw [3] to 30 in-lb (3.4 N·m) - 35 in-lb (4 N·m).

(f) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

(g) Put the rudder to the full left position.

1) Make sure that the tester shows 7032 to 7121.

(h) Put the rudder to the full right position.

1) Make sure that the tester shows 0656 to 0745.

(i) Do this task: Put the Rudder Hydraulic systems A, B, and Standby Back to the Condition Before the Pressurization, TASK 27-21-00-840-801.

(j) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-31-41-410-001

(8) Close this access panel:

Number	Name/Location
324HL	Vertical Fin, Access

F. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-41-020-003

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-41-860-008

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-41-840-003

(3) Remove power from the tester.

SUBTASK 31-31-41-860-009

(4) Remove the tester from the Flight Data Recorder System (FDRS).

SUBTASK 31-31-41-420-001

(5) Install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL POSITION SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the rudder pedal position sensor.

(2) An installation of the rudder pedal position sensor.

(3) An installation test of the rudder pedal position sensor.

TASK 31-31-42-000-801

2. Rudder Pedal Position Sensor Removal

(Figure 401)

A. References

Reference	Title
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (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. Removal Procedure

SUBTASK 31-31-42-840-001

(1) Do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

SUBTASK 31-31-42-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-42-010-001

(3) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-42-020-001

WARNING

PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(4) Remove the rudder pedal position sensor [2]:

(a) Disconnect the electrical connector [1] from the rudder pedal position sensor [2].

(b) Remove the screw [4], washer [12] and nut [13].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Remove the sensor clamp screws [3], and washer [11].

(d) Remove the cable drum [6] from the sensor shaft.

(e) Remove cotter pins [9] and [10].

(f) Remove the cables.

(g) Remove the rudder pedal position sensor [2] from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F99917 S0006574471_V2

Rudder Pedal Position Sensor Installation
Figure 401/31-31-42-990-801 (Sheet 1 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F99919 S0006574472_V2

Rudder Pedal Position Sensor Installation
Figure 401/31-31-42-990-801 (Sheet 2 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1845291 S0000322230_V2

Rudder Pedal Position Sensor Installation
Figure 401/31-31-42-990-801 (Sheet 3 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CABLE REF	DRAWING NUMBER	NO. REQ	LENGTH	CABLE SIZE	FITTINGS	
					1	2
A	69-40951-31	1	3.97 in (100.84mm)	3/64 7 X 7	RA2487-047	RA2487-047 and 69-40947-1
B	69-40951-31	1	3.97 in (100.84mm)	3/64 7 X 7	RA2487-047	RA2487-047 and 69-40947-1
C	69-40951-35	1	9.77 in (248.16mm)	3/64 7 X 7	RA2487-047	RA2487-047

MATERIAL - CABLE STAINLESS STEEL CABLE, AIRCRAFT QUALITY, CAROLINA STEEL & WIRE CORP., LEXINGTON, CA, OR EQUIV TERMINALS AMERICAN CHAIN AND CABLE CO., BRIDGEPORT, CT

G58993 S0006574474_V2

Rudder Pedal Position Sensor Installation
Figure 401/31-31-42-990-801 (Sheet 4 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K04508 S0006574475_V2

Rudder Pedal Position Sensor Installation
Figure 401/31-31-42-990-801 (Sheet 5 of 5)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-42-400-801

3. Rudder Pedal Position Sensor Installation

(Figure 401)

A. References

Reference	Title
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (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-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
C00174	Compound - Corrosion Preventive, Solvent Cutback, Cold Application	MIL-PRF-16173 (Supersedes MIL-C-16173)
D00016	Grease - Aircraft, General Purpose, Wide Temperature Range	MIL-PRF-81322

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
2	Sensor	31-31-42-02-130	LOM ALL

E. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

F. Access Panels

Number	Name/Location
112A	Forward Access Door

G. Installation Procedure

SUBTASK 31-31-42-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-42-860-003

(2) If the rudder hydraulic systems are not depressurized, do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-42-020-002

WARNING PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(3) Install the rudder pedal position sensor [2]:

(a) Set the rudder pedals to the neutral position.

(b) Install R2 rigging pin kit, SPL-1585, into the first officer rudder pedal.

(c) Turn the sensor until the mark on the shaft of the sensor aligns with the EZ mark on the sensor body.

(d) Install the rudder pedal position sensor [2] into the sensor bracket [5].

(e) Apply a thin layer of compound, C00174, on the internal and external surfaces of the thread on the sensor clamp screws [3].

(f) Install the sensor clamp screws [3], washers [11].

(g) Tighten the screws [3] to 30-35 pound-inches (3-4 newton-meters).

(h) Install the cable drum [6] to the sensor shaft.

(i) Install screw [4], washer [12] and nut [13].

(j) Tighten the screw [4] to 30-35 pound-inches (3-4 newton-meters).

(k) Do these steps to install the cable C:

1) Install cable C between the top part of the quadrant [8] and the top spool on the cable drum [6].

2) Install the cotter pins [9] to the top part of quadrant [8].

3) Install cotter pin [10] to the top spool on the cable drum [6].

(l) Do these steps to install cable A and B:

1) Install the ball terminal of cable A and the cotter pin [9] to the lower part of the quadrant [8].

CAUTION MAKE SURE YOU INSTALL COTTER PIN [9] CORRECTLY. THE HEAD OF THE COTTER PIN SHOULD BE VISIBLE ON THE LOWER, OUTER SURFACE OF THE CABLE DRUM AS SHOWN IN FIGURE 401, SHEET 3. IF THE COTTER PIN IS NOT INSTALL CORRECTLY, DAMAGE TO THE RUDDER PEDAL POSITION SENSOR CABLE CAN OCCUR.

2) Install the ball terminal cable B and the cotter pin [9] to the lower spool of the cable drum [6].

3) Install the spring [8] between the loose ends of cable A and B.

4) Lubricate the cables with grease, D00016.

5) Make sure the dimension across the spring [7] between the cable terminal is 2.03 ± 0.02 inches (51.56 ± 0.51 mm).

6) Tighten the two sensor clamp screws [3] to 30-35 pound-inches (3-4 newton-meters).

(m) Install the electrical connector [1] onto the rudder pedal position sensor [2].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-42-410-001

(4) If you do not accomplish the installation test immediately, close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-42-410-003

(5) Do this task: Rudder Pedal Position Sensor Installation Test, TASK 31-31-42-700-801.

——— END OF TASK ———

TASK 31-31-42-700-801

4. Rudder Pedal Position Sensor Installation Test

(Figure 401)

A. References

Reference	Title
27-21-00-800-801	Rudder Hydraulic System A, B, or Standby Pressurization (P/B 201)
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Installation Test

SUBTASK 31-31-42-010-002

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-42-710-001

(2) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the HHMPI cable to the SSFDR:
   - HHMPI interface cable (L-3 Comm FA2100), COM-13697
   - HHMPI interface cable (Honeywell SSDFDR), COM-13695
   - HHMPI interface cable (Honeywell HFR5-D), COM-13696
   - HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Select the LIVE DATA VIEW on the Hand Held Multi-Purpose Interface (HHMPI).

   NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the Teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Use the portable tester adapter cable, SPL-1808, to connect the portable tester to the system test plug.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

3) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) Do the steps below to prepare the handheld download unit, COM-913, for the system test:

NOTE: The handheld download unit, COM-913, used only on the airplane with AlliedSignal Solid-State Flight Data Recorder (SSFDR).

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the red button on the handheld download unit, COM-913.

6) Set the DSDU switch.

7) Set the BASE switch.

8) Set the WORD and SUBFRAME as specified.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709.

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT
    b) Select the applicable DATA RATE
    c) Select Normal DISPLAY MODE
    d) Select the applicable SYNC TYPE
    e) Select NO for the SUPER FRAME.
12) Push F4 button to select NEXT.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.

    NOTE: For SUBFRAME 0, select ALL.
14) Push F4 button to select START MONITORING.
15) If necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-42-860-005

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-42-860-006

(4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-42-860-007

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU REMOVE OR INSTALL HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU REMOVE HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(5) Do this task: Rudder Hydraulic System A, B, or Standby Pressurization, TASK 27-21-00-800-801.

SUBTASK 31-31-42-820-001

(6) Do these steps to adjust the rudder pedal position sensor [2]:

(a) Make sure that the rudder pedal is set in the neutral position.

(b) Loosen the sensor clamp screw [3].

(c) Set the portable tester to subframe 0, word 39.

(d) Hold the cable drum and rotate the rudder pedal position sensor [2] body slowly in each direction until you get an octal value between 7751 to 0027 on the tester.

(e) Tighten the sensor clamp screw [3] to 30 in-lb (3.4 N·m) - 35 in-lb (4 N·m).

(f) Remove R2 rigging pin kit, SPL-1585, from the first officer rudder pedal.

(g) Push the captain's right rudder pedal full forward against stop.

1) Make sure that the tester shows 5763 to 6423.

(h) Push the captain's left rudder pedal full forward against stop.

1) Make sure that the tester shows 1354 to 2014.

(i) Do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

F. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-42-020-003

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-42-410-002

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-42-860-008

(3) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-42-840-003

(4) Remove power from the tester.

SUBTASK 31-31-42-860-009

(5) Remove the tester from the Flight Data Recorder System (FDRS).

SUBTASK 31-31-42-420-001

(6) If necessary, install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

RUDDER PEDAL FORCE TRANSMITTER ROD - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the rudder pedal force transmitter rod.

(2) An installation of the rudder pedal force transmitter rod.

(3) An installation test of the rudder pedal force transmitter.

TASK 31-31-43-000-801

2. Rudder Pedal Force Transmitter Rod Removal

(Figure 401)

A. References

Reference	Title
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (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-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-9118	Kit - Rigging Pin Part #: F70207-128 Supplier: 81205

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

D. Access Panels

Number	Name/Location
323FL	Vertical Fin, Access
323GL	Vertical Fin, Access
324EL	Vertical Fin, Access

E. Removal Procedure

SUBTASK 31-31-43-840-001

(1) Do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

SUBTASK 31-31-43-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-43-010-001

(3) Open these access panels:

Number	Name/Location
323FL	Vertical Fin, Access
323GL	Vertical Fin, Access
324EL	Vertical Fin, Access

SUBTASK 31-31-43-410-001

(4) Install the rig pins A/S-3 and A/S-4 from the test set rigging pin kit, SPL-1585 into the R3 and R4 rig pin holes in the rudder forward quadrant.

SUBTASK 31-31-43-410-002

(5) Install the rig pins R5 from the test set rigging pin kit, SPL-1585 into the R-5 rig pin hole in the feel and centering unit.

NOTE: The rigging pin kit, SPL-9118 is required to use with the test set rigging pin kit, SPL-1585.

SUBTASK 31-31-43-020-001

WARNING BEFORE YOU MOVE THE RUDDER PEDALS, MAKE SURE THE AREA AROUND THE RUDDER IS CLEAR OF ALL PERSONS AND EQUIPMENT. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Do these steps to remove the rudder pedal force transmitter [2]:

(a) Disconnect the electrical connector [1] from the rudder pedal force transmitter [2].

(b) Do these steps to disconnect electrical ground [6]:

1) Remove bolt [3].

2) Remove washers [4], [5] and [7].

3) Remove nut [8].

(c) Remove bolt [9], washer [10] and nut [11].

(d) Remove bolt [12], washer [13] and nut [14].

(e) Remove the rudder pedal force transmitter [2].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K03785 S0006574481_V2

Rudder Force Transmitter Rod Installation
Figure 401/31-31-43-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K04436 S0006574482_V2

Rudder Force Transmitter Rod Installation
Figure 401/31-31-43-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

K06328 S0006574483_V2

Rudder Force Transmitter Rod Installation
Figure 401/31-31-43-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD QUADRANTS

E

K23559 S0006574484_V2

Rudder Force Transmitter Rod Installation
Figure 401/31-31-43-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-43-400-801

3. Rudder Pedal Force Transmitter Rod Installation

(Figure 401)

A. References

Reference	Title
27-21-00-800-802	Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation (P/B 201)
27-21-00-840-802	Pressure to the Rudder Systems A, B, and Standby - Activation (P/B 201)

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

C. Access Panels

Number	Name/Location
323FL	Vertical Fin, Access
323GL	Vertical Fin, Access
324EL	Vertical Fin, Access

D. Rudder Pedal Force Transmitter Rod Installation

SUBTASK 31-31-43-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-43-860-003

(2) If the rudder hydraulic systems are not depressurized, do this task: Pressure from the Rudder Hydraulic Systems A, B, and Standby - Deactivation, TASK 27-21-00-800-802.

SUBTASK 31-31-43-020-002

> **WARNING**
> BEFORE YOU MOVE THE RUDDER PEDALS, MAKE SURE THE AREA AROUND THE RUDDER IS CLEAR OF ALL PERSONS AND EQUIPMENT. THIS WILL PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) Do these steps to install the rudder pedal force transmitter [2]:

(a) Install the rudder pedal force transmitter [2].

(b) Install the bolt [12], washer [13], and nut [14].

(c) Install the bolt [9], washer [10], and nut [11].

(d) Tighten the nut [11].

(e) Do these steps to install the electrical ground [6]:

1) Install the bolt [3], washers [4], and washers [5].

2) Install the electrical ground [6].

3) Install the washer [7] and nut [8].

4) Tighten the nut [8].

(f) Install the electrical conector [1].

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SUBTASK 31-31-43-410-003

(4) Close these panels:

Number	Name/Location
323FL	Vertical Fin, Access
323GL	Vertical Fin, Access
324EL	Vertical Fin, Access

SUBTASK 31-31-43-010-002

(5) Remove the rig pins A/S-3 and A/S-4 from the rig pin hole R3 and R4 in rudder forward quadrant.

SUBTASK 31-31-43-010-003

(6) Remove the rig pins A/S-5 from the feel and centering unit.

SUBTASK 31-31-43-860-014

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-43-860-017

(8) Do this task: Pressure to the Rudder Systems A, B, and Standby - Activation, TASK 27-21-00-840-802.

SUBTASK 31-31-43-410-004

(9) Do this task: Rudder Pedal Force Transmitter Installation Test, TASK 31-31-43-700-801.

——— END OF TASK ———

TASK 31-31-43-700-801

4. Rudder Pedal Force Transmitter Installation Test

(Figure 401)

A. References

Reference	Title
27-21-00-800-801	Rudder Hydraulic System A, B, or Standby Pressurization (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896

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(Continued)

Reference	Description
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Access Panels

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Rudder Pedal Force Transmitter Installation Test

SUBTASK 31-31-43-710-001

(1) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Select LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

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3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push the SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Use the portable tester adapter cable, SPL-1808, to connect the portable tester to the system test plug.

3) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) Do the steps below to prepare the handheld download unit, COM-913:

NOTE: The handheld download unit, COM-913, used only on the airplane with Allied Signal Solid State FDR.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Handheld Download unit to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the red button on the handheld download unit, COM-913.

6) Set the DSDU switch.

7) Set the BASE switch.

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8) Set the WORD and SUBFRAME as specified.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709.

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.

7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.

9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.

10) Push the F3 button for MONITOR DATA on the DART screen.

11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:

a) Select Octal DATA FORMAT

b) Select the applicable DATA RATE

c) Select Normal DISPLAY MODE

d) Select the applicable SYNC TYPE

e) Select NO for the SUPER FRAME.

12) Push F4 button to select NEXT.

13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.

NOTE: For SUBFRAME 0, select ALL.

14) Push F4 button to select START MONITORING.

15) If necessary, enter the aircraft tail number.

a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.

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b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.

c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-43-860-005

(2) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-43-860-006

(3) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-43-860-007

WARNING

MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(4) Do this task: Rudder Hydraulic System A, B, or Standby Pressurization, TASK 27-21-00-800-801.

SUBTASK 31-31-43-860-016

(5) Set the tester to subframe 0, word 40.

SUBTASK 31-31-43-860-009

(6) With no pressure to the left or right rudder pedals, make sure that the tester shows an octal value between 3012 to 4112.

SUBTASK 31-31-43-840-004

(7) Put pressure to the left rudder pedal.

(a) Make sure that the octal value increases.

NOTE: It may take 1 to 4 seconds to update. Hold the rudder pedal until an octal value shows on the display.

SUBTASK 31-31-43-840-006

(8) Put pressure to the right rudder pedal.

(a) Make sure that the octal value decreases.

NOTE: It may take 1-4 seconds to update. Hold the rudder pedal until an octal value shows on the display.

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F. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-43-020-003

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-43-410-005

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-43-860-010

(3) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-43-840-005

(4) Remove power from the tester.

SUBTASK 31-31-43-860-011

(5) Remove the tester from the Flight Data Recorder System (FDRS).

SUBTASK 31-31-43-420-001

(6) Install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELEVATOR POSITION TRANSMITTER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the elevator position transmitter.

(2) An installation of the elevator position transmitter.

(3) An installation test of the elevator position transmitter.

TASK 31-31-51-000-801

2. Elevator Position Transmitter Removal

(Figure 401)

A. References

Reference	Title
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
55-10-11-000-801	Balance Bay Panels Removal (P/B 401)

B. Location Zones

Zone	Area
334	Left Horizontal Stabilizer - Elevator
344	Right Horizontal Stabilizer - Elevator

C. Access Panels

Number	Name/Location
333BB	Horizontal Stabilizer, Access Panel, Trailing Edge
343BB	Horizontal Stabilizer, Access Panel - T.E. Area

D. Elevator Position Transmitter Removal

SUBTASK 31-31-51-840-001

(1) Do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 31-31-51-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-51-010-001

(3) For the right elevator position, open this access panel:

(TASK 55-10-11-000-801)

Number	Name/Location
343BB	Horizontal Stabilizer, Access Panel - T.E. Area

SUBTASK 31-31-51-010-002

(4) For the left elevator position, open this access panel:

(TASK 55-10-11-000-801)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Number	Name/Location
333BB	Horizontal Stabilizer, Access Panel, Trailing Edge

SUBTASK 31-31-51-020-001

WARNING PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(5) Remove the elevator position transmitter [1] as follows:

(a) Disconnect the electrical connector [2] from the elevator position transmitter [1].

(b) Put protective cover on the electrical connector [2].

(c) Loosen the screw [3] and screw [4].

(d) Remove the elevator position transmitter [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

A

G26393 S0006574490_V4

Elevator Position Transmitter Installation
Figure 401/31-31-51-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELEVATOR POSITION TRANSMITTER

B

G26724 S0006574491_V4

Elevator Position Transmitter Installation
Figure 401/31-31-51-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C

H91271 S0006574492_V2

Elevator Position Transmitter Installation
Figure 401/31-31-51-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2915319 S0000700316_V3

Elevator Position Transmitter Installation
Figure 401/31-31-51-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-51-400-801

3. Elevator Position Transmitter Installation

(Figure 401)

A. References

Reference	Title
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Transmitter	31-31-51-03-115	LOM ALL

C. Location Zones

Zone	Area
334	Left Horizontal Stabilizer - Elevator
344	Right Horizontal Stabilizer - Elevator

D. Elevator Position Transmitter Installation

SUBTASK 31-31-51-860-002

(1) If the elevator hydraulic systems are not depressurized, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 31-31-51-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-51-020-002

> **WARNING** PRIOR AND DURING REMOVAL/INSTALLATION PROCEDURES OF THE SURFACE POSITION SENSORS, DO NOT ATTEMPT TO OPERATE ANY FLIGHT CONTROL SYSTEM OR DAMAGE TO CONTROL MECHANISMS AND INJURY TO PERSONNEL MAY RESULT.

(3) Install the elevator position transmitter [1]:

(a) Install the shaft of the elevator position transmitter [1] into the support bracket.

(b) Align the EZ marks on the elevator position transmitter [1] body and the index mark on the shaft of the transmitter with the centerline of the crank.

(c) Tighten the screw [3] and screw [4].

(d) Remove protective cover from the electrical connector [2].

(e) Install the electrical connector [2] onto the elevator position transmitter [1].

E. Elevator Position Transmitter Installation Test

SUBTASK 31-31-51-860-017

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-51-860-018

(2) Do this task: Elevator Position Transmitter Installation Test, TASK 31-31-51-700-801.

END OF TASK

TASK 31-31-51-700-801

4. Elevator Position Transmitter Installation Test

(Figure 402)

A. General

(1) This task includes the steps to do a test of the elevator position transmitter.

B. References

Reference	Title
22-11-30-400-801	Elevator Position Sensor Installation (P/B 401)
27-31-00-800-801	Elevator Hydraulic System A and B - Pressurization (P/B 201)
27-31-00-800-802	Remove Pressure from the Elevator Hydraulic Systems A and B (P/B 201)
27-31-00-840-802	Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (P/B 201)
55-10-11-400-801	Balance Bay Panels 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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1677	Trammel Bar Assembly - Stabilizer Trim Actuator Part #: F80055-36 Supplier: 81205 Opt Part #: F80055-1 Supplier: 81205
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

D. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door
318BR	Tailcone Access Door
333BB	Horizontal Stabilizer, Access Panel, Trailing Edge
343BB	Horizontal Stabilizer, Access Panel - T.E. Area

E. Prepare for the Test

SUBTASK 31-31-51-860-005

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-51-710-001

(2) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Select the LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the Teledyne portable tester, COM-1807:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Remove the shorting plug from the system test plug on the P18 panel.
2) Use the portable tester adapter cable, SPL-1808, to connect the tester to the system test plug.
3) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.
4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) To prepare the handheld download unit, COM-913, (HHDLU) for the system test, do these steps:

NOTE: Do these steps only for airplanes with a Honeywell SSFDR.

1) Connect the Hand-Held Down-load Unit (HHDLU) to the connector on the FDR.
2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.
3) Turn on the power supply on the HHDLU.
4) Select the EHHDLU icon on touchscreen.
5) Select the Monitor Flight Data.
6) Select the Recorder Type that is connected to the HHDLU.
7) Select the Format to octal.
8) Set the Word and Subframe as specified.

NOTE: The HHDLU do not have a selection for subframe 0. Make a selection of subframe ALL or subframe 1 thru 4 when a task uses subframe 0.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709:

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.
2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that the DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that the RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that the function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT
    b) Select the applicable DATA RATE
    c) Select Normal DISPLAY MODE
    d) Select the applicable SYNC TYPE
    e) Select NO for the SUPER FRAME.
12) Push F4 button to select NEXT.

    NOTE: For SUBFRAME 0, select ALL.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.
14) Push F4 button to select START MONITORING.
15) If it is necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-51-860-007

(3) If the elevator hydraulic systems are not depressurized, do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

SUBTASK 31-31-51-010-003

(4) To get access to the stabilizer trim jackscrew, do this step:

Remove this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Installation Test

SUBTASK 31-31-51-980-001

(1) Do these steps to set the B dimension (Figure 402):

NOTE: The B dimension measures the distance between the center of the upper and lower Gimbal pins on the stabilizer trim jackscrew. To do this, one person must be in the tail of the airplane with a headset and the other person in the flight compartment.

(a) Turn the stab trim wheel handle on the control stand to set the horizontal stabilizer to 4 units of trim.

NOTE: This B dimension is equivalent to the horizontal stabilizer at 4 units of trim (zero degree).

(b) Use the trammel trammel bar, SPL-1677, to measure the B dimension.

1) Make sure that the B dimension is 39.89 ±0.01 in. (1013.21 ±0.25 mm).

SUBTASK 31-31-51-820-001

(2) Make sure that the mach trim actuator is at the null position (TASK 22-11-30-400-801).

SUBTASK 31-31-51-860-008

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-51-860-009

(4) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-51-700-001

(5) Do these steps to adjust the elevator position transmitter:

(a) Make sure that the elevator trailing edge is positioned in line with index on tailcone within +/- 0.06 in. (1.52 mm).

(b) Make sure that the length of the linkage rod from center to center is 7.23 in. (183.64 mm) - 7.27 in. (184.66 mm).

(c) Loosen the screw.

(d) Set the tester subframe and word:

1) For the left elevator position transmitter, set the tester to subframe 0, word 4.

2) For the right elevator position transmitter, set the tester to subframe 0, word 10.

(e) Rotate the elevator position transmitter slowly in each direction until you get an octal value between 7733 to 7777 or 0000 to 0044 on the tester.

(f) Tighten the screw.

(g) Turn the thumb wheel on the linkage rod slowly in each direction until you get an octal value between 7733 to 7777 or 0000 to 0044 on the tester.

(h) Lockwire the thumb wheel.

NOTE: After final adjustments the tester should shows between 7733 to 7777 or 0000 to 0044 octal when stabilizer is set to 39.89 and elevators are faired to neutral within 0.06 in. (1.52 mm) of the index on the tailcone.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-51-700-002

(6) Do these steps to test the elevator position transmitter signal:

WARNING	MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

CAUTION	DO NOT OPERATE THE HYDRAULIC SYSTEM IF THERE IS LESS THAN A SUFFICIENT QUANTITY OF FUEL IN THE APPLICABLE TANK. DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Do this task: Elevator Hydraulic System A and B - Pressurization, TASK 27-31-00-800-801.

(b) Make sure that the horizontal stabilizer is at 4 units of trim.

(c) Set the tester to subframe 0, word 4.

(d) Move the control column full aft against stop.

1) Make sure that the tester shows 6710 to 7056.

(e) Move the control column full forward against stop.

1) Make sure that the tester shows 0500 to 0646.

(f) Set the tester to subframe 0, word 10.

(g) Move the control column full aft against stop.

1) Make sure that the tester shows 0730 to 1056.

(h) Move the control column full forward against stop.

1) Make sure that the tester shows 7140 to 7266.

(i) Do this task: Remove Pressure from the Elevator Hydraulic Systems A and B, TASK 27-31-00-800-802.

G. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-51-860-019

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-51-010-004

(2) For the left elevator position, close this access panel, do this task: Balance Bay Panels Installation, TASK 55-10-11-400-801.

Panel:

Number	Name/Location
333BB	Horizontal Stabilizer, Access Panel, Trailing Edge

SUBTASK 31-31-51-410-001

(3) For the right elevator position, close this access panel, do this task: Balance Bay Panels Installation, TASK 55-10-11-400-801.

Panel:

Number	Name/Location
343BB	Horizontal Stabilizer, Access Panel - T.E. Area

SUBTASK 31-31-51-410-002

(4) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 31-31-51-840-003

(5) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-51-860-010

(6) Remove power from the tester.

SUBTASK 31-31-51-860-011

(7) Remove the tester from the Flight Data Recorder System (FDRS).

SUBTASK 31-31-51-420-001

(8) Install the shorting plug on the system test plug on the P18 panel.

SUBTASK 31-31-51-010-007

(9) Close this access panel:

Number	Name/Location
318BR	Tailcone Access Door

SUBTASK 31-31-51-010-008

(10) Do this task: Put the Elevator Systems A and B Back to the Condition Before the Pressure Removal, TASK 27-31-00-840-802.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Stabilizer Trim Jackscrew Setting
Figure 402/31-31-51-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STABILIZER TRIM JACKSCREW

B

NOTE:

THE STABILIZER TRIM JACKSCREW IS SHOWN WITH THE STABILIZER LEADING EDGE AT ZERO DEGREE.

1 THE DIMENSION B IS MEASURED BETWEEN THE CENTER OF THE UPPER AND LOWER GIMBAL PINS.

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Stabilizer Trim Jackscrew Setting
Figure 402/31-31-51-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CONTROL COLUMN POSITION SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the control column position sensor.

(2) An installation of the control column position sensor.

(3) An installation test of the control column position sensor.

TASK 31-31-52-000-801

2. Control Column Position Sensor Removal

(Figure 401)

A. References

Reference	Title
27-11-00-860-801	Pressure from the Aileron Hydraulic Systems A and B - Deactivation (P/B 201)
27-41-51-000-801	Column Cutout Switch Removal (P/B 401)

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. Removal Procedure

SUBTASK 31-31-52-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-52-860-002

(2) Do this task: Pressure from the Aileron Hydraulic Systems A and B - Deactivation, TASK 27-11-00-860-801.

SUBTASK 31-31-52-010-001

(3) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-52-020-001

WARNING

MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE AREAS AROUND THE CONTROL SURFACES. IF POWER IS SUPPLIED TO THE CADC, THE AIRCRAFT CONTROL SURFACES CAN MOVE. SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Do this task: Column Cutout Switch Removal, TASK 27-41-51-000-801.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-52-020-002

(5) Remove the control column position sensor [1] from the Control Cutoff Switch Module:

(a) Turn the electrical connector [6] counterclockwise to remove the connector.

(b) Loosen the flex coupling screw.

(c) Remove the bolts [2] and washers [3].

(d) Remove the bolt [4] and clamp [5] to remove the cable from its mounting.

(e) Remove the control column position sensor [1] from the control cutoff switch module.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G11634 S0006574501_V2

Control Column Position Sensor Installation
Figure 401/31-31-52-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CONTROL CUTOUT SWITCH (EXAMPLE)

B

G11635 S0006574502_V2

Control Column Position Sensor Installation
Figure 401/31-31-52-990-801 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-52-400-801

3. Control Column Position Sensor Installation

(Figure 401)

A. References

Reference	Title
27-11-00-860-801	Pressure from the Aileron Hydraulic Systems A and B - Deactivation (P/B 201)
27-41-51-400-801	Column Cutout Switch Installation (P/B 401)

B. Consumable Materials

Reference	Description	Specification
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Sensor	27-41-51-01-145	LOM ALL
		27-41-51-02-160	LOM ALL

D. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

E. Access Panels

Number	Name/Location
112A	Forward Access Door

F. Installation Procedure

SUBTASK 31-31-52-860-003

(1) If hydraulic systems are not depressurized, do this task: Pressure from the Aileron Hydraulic Systems A and B - Deactivation, TASK 27-11-00-860-801.

SUBTASK 31-31-52-860-004

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-52-020-003

(3) Install the control column position sensor [1]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(a) Apply Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the shaft of the sensor [1].

NOTE: Make sure the compound does not get on the sensor bearing. This can cause friction on the bearing.

(b) Insert the shaft of the sensor [1] into the flex coupling.

(c) Install the bolts [2] and washers [3].

(d) Tighten the flex coupling screw to 12-15 pound-inches (1.13-1.70 newton-meter).

(e) Install the cable, bolt [4] and clamp [5].

(f) Install the sensor electrical connector [6].

SUBTASK 31-31-52-420-001

WARNING

MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE AREAS AROUND THE CONTROL SURFACES. IF POWER IS SUPPLIED TO THE CADC, THE AIRCRAFT CONTROL SURFACES CAN MOVE. SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Do this task: Column Cutout Switch Installation, TASK 27-41-51-400-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-31-52-840-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-52-410-001

(2) If you do not accomplish the installation test immediately, close this access panel:

Number	Name/Location
112A	Forward Access Door

H. Control Column Position Sensor Installation Test

SUBTASK 31-31-52-410-004

(1) Do this task: Control Column Position Sensor Installation Test, TASK 31-31-52-820-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-52-820-801

4. Control Column Position Sensor Installation Test

(Figure 401)

A. References

Reference	Title
27-11-00-860-802	Pressure to the Aileron Hydraulic Systems A and B - Activation (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1585	Kit - Rigging Pin Part #: F70207-109 Supplier: 81205
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

D. Access Panels

Number	Name/Location
112A	Forward Access Door

E. Installation Test

SUBTASK 31-31-52-410-002

(1) Open this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-31-52-860-006

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-52-710-001

(3) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):
   - HHMPI interface cable (L-3 Comm FA2100), COM-13697
   - HHMPI interface cable (Honeywell SSDFDR), COM-13695
   - HHMPI interface cable (Honeywell HFR5-D), COM-13696
   - HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.
3) Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.
5) Select the LIVE DATA VIEW on the HHMPI.

   NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:
1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).
3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.
5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.
6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:
1) Remove the shorting plug from the system test plug on the P18 panel.
2) Use the portable tester adapter cable, SPL-1808, to connect the portable tester to the system test plug.
3) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.
4) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

5) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

6) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) Do the steps below to prepare the handheld download unit, COM-913 (HHDLU), for the system test:

NOTE: These steps are for airplanes equipped with Alliedsignal FDR only.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand-Held Down-load Unit (HHDLU) to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the red button on the HHDLU.

6) Set the DSDU switch.

7) Set the BASE switch.

8) Set the WORD and SUBFRAME as specified.

NOTE: The HHDLU do not have a selection for subframe 0. Make a selection of subframe ALL or subframe 1 thru 4 when a task uses subframe 0.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709:

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that the DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that the RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that the function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT
    b) Select the applicable DATA RATE
    c) Select Normal DISPLAY MODE
    d) Select the applicable SYNC TYPE
    e) Select NO for the SUPER FRAME.
12) Push F4 button to select NEXT.

    NOTE: For SUBFRAME 0, select ALL.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.
14) Push F4 button to select START MONITORING.
15) If it is necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-52-860-007

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-52-860-008

(5) Make sure that the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-52-420-002

> **WARNING**
> MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE AREAS AROUND THE CONTROL SURFACES. IF POWER IS SUPPLIED TO THE CADC, THE AIRCRAFT CONTROL SURFACES CAN MOVE. SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(6) Make sure that the captain's control column is in the neutral position.

(a) Install rigging pin kit, SPL-1585, rigging pin E-1 in the elevator forward quadrant, on the captains side (Figure 402).

(b) Install rigging pin kit, SPL-1585, rigging pin ST-4 in the captains column, actuated cutout switch module (Figure 402).

SUBTASK 31-31-52-863-001

> **WARNING**
> BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM, MAKE SURE THAT THE REVERSERS, FLAPS, SPOILERS, NOSEWHEEL, ELEVATORS, RUDDER, SLATS, RUDDER PEDALS, AND CONTROL COLUMNS ARE CLEAR OF PERSONS AND EQUIPMENT. THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(7) Do this task: Pressure to the Aileron Hydraulic Systems A and B - Activation, TASK 27-11-00-860-802.

SUBTASK 31-31-52-820-001

(8) Do these steps to adjust the captain's control column position sensor [1]:

(a) Loosen the bolts [2].

(b) Set the tester to subframe 0, word 6.

(c) Turn the body of the control column position sensor [1] slowly in each direction until you get an octal value between 7765 to 0013 on the tester.

(d) Tighten the bolts [2] to 30 in-lb (3.4 N·m) - 35 in-lb (4 N·m).

SUBTASK 31-31-52-020-004

(9) Remove rigging pin kit, SPL-1585, rigging pin ST-4 from the captain's control column, actuated cutout switch module.

SUBTASK 31-31-52-420-003

> **WARNING**
> BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM, MAKE SURE THAT THE REVERSERS, FLAPS, SPOILERS, NOSEWHEEL, ELEVATORS, RUDDER, SLATS, RUDDER PEDALS, AND CONTROL COLUMNS ARE CLEAR OF PERSONS AND EQUIPMENT. THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(10) Make sure that the first officer's control column is in the neutral position.

(a) Make sure that rigging pin kit, SPL-1585, rigging pin E-1 is in the elevator forward quadrant, on the captains side (Figure 402).

(b) Install rigging pin kit, SPL-1585, rigging pin ST-4 in the first officers column, actuated cutout switch module (Figure 403).

SUBTASK 31-31-52-820-002

(11) Do this step for the first officer's control column position sensor [1]:

(a) Set the tester to subframe 0, word 12.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Turn the body of the control column position sensor [1] slowly in each direction until you get an octal value between 7765 to 0013 on the tester.

(c) Tighten the bolts [2] to 30 in-lb (3.4 N·m) - 35 in-lb (4 N·m).

SUBTASK 31-31-52-030-001

(12) Remove the rigging pins.

SUBTASK 31-31-52-410-003

(13) Close this access panel:

Number	Name/Location
112A	Forward Access Door

F. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-52-860-012

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on the data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on the data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-52-860-009

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-52-840-003

(3) Remove power from the tester.

SUBTASK 31-31-52-860-010

(4) Remove the tester.

SUBTASK 31-31-52-420-004

(5) Install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F67100 S0006569533_V2

Elevator Forward Control Quadrant - Rig Pin Location - E-5 and E-1
Figure 402/31-31-52-990-802 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

B

F67101 S0006569534_V2

Elevator Forward Control Quadrant - Rig Pin Location - E-5 and E-1
Figure 402/31-31-52-990-802 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

MASS BALANCE WEIGHT

C

1 LEFT SIDE OF FORWARD QUADRANT ASSEMBLY ONLY

F67167 S0006569535_V2

Elevator Forward Control Quadrant - Rig Pin Location - E-5 and E-1
Figure 402/31-31-52-990-802 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELEVATOR FORWARD CONTROL QUADRANT ASSEMBLY

D

F67174 S0006569536_V2

Elevator Forward Control Quadrant - Rig Pin Location - E-5 and E-1
Figure 402/31-31-52-990-802 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F46294 S0006569744_V2

Column Cutout Switch - Rig Pin Location - ST-4
Figure 403/31-31-52-990-803 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAPTAIN'S COLUMN CUTOUT SWITCH

B

FIRST OFFICER'S COLUMN CUTOUT SWITCH

C

F46298 S0006569745_V3

Column Cutout Switch - Rig Pin Location - ST-4
Figure 403/31-31-52-990-803 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

BRAKE PRESSURE TRANSMITTER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the brake pressure transmitters (T492, T493, T494, T495).

(2) An installation of the brake pressure transmitters (T492, T493, T494, T495).

(3) An installation test of the main and alternate brake pressure transmitters.

TASK 31-31-61-000-801

2. Brake Pressure Transmitter - Removal

(Figure 401)

A. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
10-11-05-500-802	Chock Installation in Winds More than 35 Knots - Handling (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
32-41-00-720-801	Accumulator - Operational Test (P/B 501)

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Prepare for the Removal

SUBTASK 31-31-61-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-61-020-001

WARNING MAKE SURE THAT YOU INSTALL THE DOWNLOCKS ON THE NOSE AND MAIN LANDING GEAR. WITHOUT THE DOWNLOCKS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE THE EQUIPMENT.

(2) Make sure that the downlock pins are installed in the nose and main landing gear (TASK 32-00-01-480-801).

SUBTASK 31-31-61-020-002

(3) Make sure that the chocks are installed on the tires (TASK 10-11-05-500-801 or TASK 10-11-05-500-802).

SUBTASK 31-31-61-020-004

(4) Remove pressure from the left and right hydraulic system and the hydraulic reservoirs (TASK 29-11-00-860-805).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-61-020-005

(5) Fully push the brake pedals 12 times to remove hydraulic pressure from the brake accumulator (TASK 32-41-00-720-801).

D. Procedure

SUBTASK 31-31-61-020-006

(1) Do these steps to remove the alternate brake transmitter (T494 or T495):

(a) Disconnect the electrical connector [3] from the brake pressure transmitter [1].

(b) Loosen the hydraulic tube B-nut [6].

(c) Pull the hydraulic tube [4] away from the brake pressure transmitter [1].

(d) Install a plug to the hydraulic tube [4].

(e) Remove the lockwire [7] from the brake pressure transmitter [1].

(f) Remove the nut [2] and washer [5].

(g) Remove the brake pressure transmitter [1].

SUBTASK 31-31-61-020-007

(2) Do these steps to remove the main brake pressure transmitter (T492 or T493):

(a) Disconnect the electrical connector [8] from the brake pressure transmitter [1].

(b) Loosen the hydraulic tube B-nut [12].

(c) Pull the hydraulic tube [9] away from the brake pressure transmitter [1].

(d) Install a plug to the hydraulic tube [9].

(e) Remove the lockwire [13] from the brake pressure transmitter [1].

(f) Remove the nut [11] and washer [10].

(g) Remove the brake pressure transmitter [1].

END OF TASK

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ALTERNATE BRAKE PRESSURE TRANSMITTER (EXAMPLE)

A

2843153 S0000663868_V1

Brake Pressure Transducer Installation
Figure 401/31-31-61-990-801 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

M34078 S0006574509_V3

Brake Pressure Transducer Installation
Figure 401/31-31-61-990-801 (Sheet 2 of 2)

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TASK 31-31-61-400-801

3. **Brake Pressure Transmitter - Installation**

(Figure 401)

A. **References**

Reference	Title
20-10-34-110-801	Remove Paint from Metal Surfaces with Lacquer Thinner or Solvent (P/B 701)
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
32-00-01-480-801	Landing Gear Downlock Pins Installation (P/B 201)
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 Meter - 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 #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659

C. **Consumable Materials**

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS5-95
B00083	Solvent - VM&P Naphthas	TT-N-95 Type II, ASTM D-3735 Type III
C50315	Coating - Chemical Conversion - Bonderite M-CR 600 Aero (Formerly Alodine 600)	BAC5719 Class A, C or D, MIL-DTL-81706 Type I Class 1A or 3
G00034	Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze)	AMS3819 Class 1 Grade A or B Form 1 (Supersede BMS15-5 CL A)

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Brake pressure transmitter	31-31-60-01-015	LOM ALL
		31-31-60-02-015	LOM ALL
		31-31-60-03-015	LOM ALL

E. **Location Zones**

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

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F. Prepare for the Brake Pressure Transmitter Installation

SUBTASK 31-31-61-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-61-420-003

> **WARNING** MAKE SURE THE GROUND LOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE GROUND LOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(2) Make sure that the downlock pins are installed in the nose and main landing gear (TASK 32-00-01-480-801).

SUBTASK 31-31-61-100-001

> **WARNING** DO NOT GET SOLVENTS IN YOUR MOUTH OR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. PUT ON A RESPIRATOR, PROTECTIVE SPLASH GOGGLES, AND GLOVES WHEN YOU USE SOLVENTS. KEEP THE SOLVENTS AWAY FROM SPARKS, FLAME, AND HEAT. SOLVENTS ARE POISONOUS AND FLAMMABLE. SOLVENTS CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(3) Do these steps to prepare the bonding areas for installation (SWPM 20-20-00):

(a) Remove paint or chemical conversion coating (TASK 20-10-34-110-801).

(b) Use the solvent cleaning method to prepare the bonding surfaces of the brake pressure transmitter [1].

1) Apply a solvent, B00083, to bonding surfaces with a cotton wiper, G00034.

2) Rub the bonding surfaces with a cotton wiper, G00034.

3) Immediately dry the surfaces with a cotton wiper, G00034.

(c) Use the abrasive cleaning method to prepare the bonding surfaces of the bracket.

G. Procedure

SUBTASK 31-31-61-420-001

(1) Do these steps to install the alternate brake pressure transmitter [1]:

(a) Install the brake pressure transmitter [1] to the bracket.

(b) Install the washer [5] and nut [2].

(c) Tighten the nut [2] to 360 ±36 in-lb (41 ±4 N·m).

(d) Measure the resistance between the structure and the bracket with a intrinsically safe approved bonding meter, COM-1550.

1) Make sure the resistance value is less than 0.0025 ohm.

(e) Apply a Bonderite M-CR 600 Aero coating, C50315, manually to the bare aluminum surfaces that is not covered by electrical faying surfaces.

(f) Apply a sealant, A00247, along the edges of the joint between the electrical faying surface to form a fillet seal.

(g) Install the lockwire [7] (TASK 20-10-44-400-801).

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(h) Remove the plug from the hydraulic tube [4].

(i) Install the hydraulic tube [4] to the brake pressure transmitter [1].

(j) Tighten the hydraulic tube B-nut [6] to 126 in-lb (14.2 N·m) - 154 in-lb (17.4 N·m).

(k) Install the electrical connector [3] to the brake pressure transmitter [1].

SUBTASK 31-31-61-420-002

(2) Do these steps to install the main brake pressure transmitter [1] (T492, T493):

(a) Install the main brake pressure transmitter [1] to the bracket.

(b) Install the washer [10] and nut [11].

(c) Tighten the nut [11] to 360 ±36 in-lb (41 ±4 N·m).

(d) Measure the resistance between the structure and the bracket with an intrinsically safe approved bonding meter, COM-1550.

1) Make sure that the resistance value is less than 0.0025 ohms.

(e) Apply a Bonderite M-CR 600 Aero coating, C50315, manually to the bare aluminum surfaces that is not covered by electrical faying surfaces.

(f) Apply a sealant, A00247, along the edges of the joint between the electrical faying surface to form a fillet seal.

(g) Install the lockwires [13] (TASK 20-10-44-400-801).

(h) Remove the plug from the hydraulic tube [9].

(i) Install the hydraulic tube [9] to the brake pressure transmitter [1].

(j) Tighten the hydraulic tube B-nut [12] to 126 in-lb (14.2 N·m) - 154 in-lb (17.4 N·m).

(k) Install the electrical connector [8] to the brake pressure transmitter [1].

SUBTASK 31-31-61-410-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	8	C00544	FLIGHT RECORDER POSITION SENSOR

SUBTASK 31-31-61-480-001

(4) Do this task: Brake Pressure Transmitter - Installation Test, TASK 31-31-61-820-801.

END OF TASK

TASK 31-31-61-820-801

4. Brake Pressure Transmitter - Installation Test

(Figure 401)

A. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
29-21-00-000-802	Standby Hydraulic System Power Removal (P/B 201)
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (P/B 201)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

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C. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well

D. Prepare for the Test

SUBTASK 31-31-61-860-015

(1) Use one of the testers listed below to perform the installation test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, in the TEST position.

5) Select the LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

3) Use the portable tester adapter cable, SPL-1808, to connect the portable tester, COM-1807, to the system test plug.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

5) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

6) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

7) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

8) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) Do these steps to prepare the handheld download unit, COM-913:

NOTE: These steps are for airplanes equipped with Alliedsignal FDR only.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Push the red button on the handheld download unit, COM-913.

5) Set the DSDU switch.

6) Set the BASE switch.

7) Set the WORD and SUBFRAME as specified.

NOTE: The Hand-Held Down-load Unit (HHDLU) do not have a selection for subframe 0. Make a selection of subframe ALL or subframe 1 thru 4 when a task uses subframe 0.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709.

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable .

7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.

9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.

10) Push the F3 button for MONITOR DATA on the DART screen.

11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:

a) Select Octal DATA FORMAT

b) Select the applicable DATA RATE

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c) Select Normal DISPLAY MODE

d) Select the applicable SYNC TYPE

e) Select NO for the SUPER FRAME.

12) Push F4 button to select NEXT.

13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.

a) For SUBFRAME 0, select ALL.

14) Push F4 button to select START MONITORING.

15) If necessary, enter the aircraft tail number.

a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.

b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.

c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-61-860-007

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

SUBTASK 31-31-61-860-008

(3) Make sure that the parking brake is off.

E. Brake Pressure Transmitter Installation Test

SUBTASK 31-31-61-860-009

(1) Do these steps to do an installation test of the alternate brake pressure transmitters, T494 or T495:

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.

CAUTION	MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

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(CAUTION PRECEDES)

CAUTION	DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Supply hydraulic pressure for system A, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

1) Make sure that system B does not have hydraulic pressure.

a) If system B has hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

2) Make sure that the standby hydraulic system does not have hydraulic pressure.

a) If the standby hydraulic system has pressure, do this task: Standby Hydraulic System Power Removal, TASK 29-21-00-000-802.

(b) For T494, left alternate brake pressure transmitter, do these steps:

1) Push and hold the captain's left brake pedal fully against the stop.

LOM 402, 406, 407, 411

2) Set the tester to subframe 0, word 169 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

3) Set the tester to subframe 0, word 86 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

4) Set the tester to subframe 0, word 122 (Dataframe 7).

LOM ALL

(c) Find a value in Table 401 below that best agrees with the value for the hydraulic system pressure.

1) Make sure that the octal value that shows on the tester agrees with the octal value shown in the table.

(d) Release the captain's left brake pedal.

(e) For T495, right alternate brake pressure transmitter, do these steps:

1) Push and hold the captain's right brake pedal fully against the stop.

LOM 402, 406, 407, 411

2) Set the tester to subframe 0, word 171 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

3) Set the tester to subframe 0, word 214 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

4) Set the tester to subframe 0, word 250 (Dataframe 7).

LOM ALL

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(f) Find a value in the table below that best agrees with the value for the hydraulic system pressure.

1) Make sure that the octal value that shows on the tester agrees with the octal value shown in the table below:

Table 401/31-31-61-993-801

Hydraulic Pressure	Tester Display (octal)
2400	5525 to 6131 (nominal 5727)
2500	5713 to 6317 (nominal 6115)
2600	6101 to 6505 (nominal 6303)
2700	6267 to 6673 (nominal 6471)
2800	6456 to 7062 (nominal 6660)
2900	6644 to 7250 (nominal 7046)
3000	7032 to 7436 (nominal 7234)
3100	7220 to 7624 (nominal 7422)
3200	7406 to 7777 (nominal 7610)
3300	7574 to 7777 (nominal 7777)

(g) Release the captain's right brake pedal.

SUBTASK 31-31-61-860-010

(2) Do these steps to do an installation test of the main brake transmitters (T492 or T493):

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.

CAUTION MAKE SURE THAT THE INBOARD AND OUTBOARD THRUST REVERSER COWLS ARE IN THE CLOSED POSITION BEFORE YOU DO THIS TEST. YOU CAN CAUSE DAMAGE TO THE FLAPS AND COWLS IF THE COWLS ARE OPEN WHEN THE FLAPS EXTEND.

CAUTION DO NOT OPERATE THE ELECTRIC MOTOR-DRIVEN PUMP (EMDP) MORE THAN TWO MINUTES UNLESS THE FUEL TANKS CONTAIN MORE THAN 1675 LBS (761 KG) OF FUEL. IF THE PUMP OPERATES FOR TWO MINUTES WITHOUT THE FUEL IN THE TANK, LET THE RESERVOIR GO BACK TO AMBIENT TEMPERATURE BEFORE YOU OPERATE THE PUMP AGAIN. IF YOU DO NOT OBEY, DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Supply hydraulic pressure for system B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

1) Make sure that system A does not have hydraulic pressure.

a) If system A has hydraulic pressure, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

2) Make sure that the Standby Hydraulic System does not have hydraulic pressure.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

a) If the standby hydraulic system has pressure, do this task: Standby Hydraulic System Power Removal, TASK 29-21-00-000-802.

(b) Do these steps for the left main brake transmitter, T492;

1) Push and hold the captain's left brake pedal fully against the stop.

LOM 402, 406, 407, 411

2) Set the tester to subframe 0, word 169 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

3) Set the tester to subframe 0, word 86 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

4) Set the tester to subframe 0, word 58 (Dataframe 7).

LOM ALL

(c) Find a value in Table 402 that best agrees with the value for the hydraulic system pressure.

1) Make sure that the octal value that shows on the tester agrees with the octal value shown in the table.

(d) Release the captain's left brake pedal.

(e) Do these steps for the right main brake transmitter, T493;

1) Push and hold the captain's right brake pedal fully against the stop.

LOM 402, 406, 407, 411

2) Set the tester to subframe 0, word 171 (Dataframe 3, 3A or 3B).

LOM 404, 412, 415, 416, 420, 422-426

3) Set the tester to subframe 0, word 214 (Dataframe 3C).

LOM 427-434, 437-447, 450-999

4) Set the tester to subframe 0, word 186 (Dataframe 7).

LOM ALL

(f) Find a value in the table below that best agrees with the value for the hydraulic system pressure.

1) Make sure that the octal value that shows on the tester agrees with the octal value shown in the table below:

Table 402/31-31-61-993-802

Hydraulic Pressure	Tester Display (octal)
2400	5525 to 6131 (nominal 5727)
2500	5713 to 6317 (nominal 6115)
2600	6101 to 6505 (nominal 6303)
2700	6267 to 6673 (nominal 6471)
2800	6456 to 7062 (nominal 6660)
2900	6644 to 7250 (nominal 7046)
3000	7032 to 7436 (nominal 7234)

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Table 402/31-31-61-993-802 (Continued)

Hydraulic Pressure	Tester Display (octal)
3100	7220 to 7624 (nominal 7422)
3200	7406 to 7777 (nominal 7610)
3300	7574 to 7777 (nominal 7777)

(g) Release the captain's right brake pedal.

F. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-61-860-016

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-61-860-011

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORMAL position.

SUBTASK 31-31-61-840-002

(3) Remove power from the tester.

SUBTASK 31-31-61-860-012

(4) Remove the tester.

SUBTASK 31-31-61-420-004

(5) Install the shorting plug on the system test plug on the P18 panel.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Brake Pressure Transmitter Installation Test
Figure 402/31-31-61-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT DATA RECORDER ACCELEROMETER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the flight data recorder accelerometer

(2) An installation of the flight data recorder accelerometer.

TASK 31-31-81-000-801

2. Flight Data Recorder Accelerometer - Removal

(Figure 401)

A. Tools/Equipment

Reference	Description
STD-764	Scraper - Non-metallic

B. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

C. Flight Data Recorder Accelerometer Removal

SUBTASK 31-31-81-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-81-020-001

(2) Remove the flight data recorder accelerometer [1]:

(a) Disconnect the electrical connector [3] from the flight data recorder accelerometer [1].

(b) Remove the bolts [2].

LOM ALL; AIRPLANES WITH ACCELEROMETER PART NUMBERS 822-2019-101, 971-4193-001 AND 3001-01-111

(c) Use a non-metallic scraper, STD-764, to remove the sealant from the joint between the flight data recorder accelerometer [1] and the bracket.

NOTE: Not all airplanes have sealant.

LOM ALL

(d) Remove the flight data recorder accelerometer [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Flight Data Recorder Accelerometer Installation
Figure 401/31-31-81-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-31-81-400-801

3. Flight Data Recorder Accelerometer - Installation

(Figure 401)

A. References

Reference	Title
31-31-00-040-801	Flight Data Recorder System - Deactivation (P/B 201)
31-31-00-440-801	Flight Data Recorder System - Activation (P/B 201)
31-31-00-730-801	Flight Data Recorder System - System Test (P/B 501)
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-913	Download Unit - Handheld Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-001 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-1550	Bonding Meter - 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 #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659
COM-1807	Tester - DFDAU Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 2229738-7 Supplier: 98571 Opt Part #: 2229738-8 Supplier: 98571 Opt Part #: HT717-1 Supplier: 0H231
COM-2550	Unit - Download, Hand-Held (Solid State DFDR only) Part #: 69001074-080 Supplier: 97896 Opt Part #: 69001074-060 Supplier: 97896 Opt Part #: 69001074-070 Supplier: 97896 Opt Part #: 964-0446-001 Supplier: 97896
COM-2553	Unit - Interface, Portable (PI) Part #: 17TES0043 Supplier: 06141 Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: 17TES0065 Supplier: 06141 Opt Part #: FDS400-301 Supplier: Z7C70
COM-4132	Display Unit - Multi-Purpose AIDS (MADU) Part #: FAA-0032-005 Supplier: 4Z487

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-10631	Display Unit - Digital, Signal Part #: TS-UA1401-01 Supplier: 0H231 Opt Part #: 981-6301-002 Supplier: 97896 Opt Part #: HT717-1 Supplier: 0H231
COM-13694	Unit - Interface, Hand-Held Multi-Purpose (HHMPI) Part #: FDS40-0301 Supplier: Z7C70 Opt Part #: FDS400-301 Supplier: Z7C70
COM-13695	Cable - Interface, HHMPI (Honeywell SSDFDR only) Part #: FDS40-0203 Supplier: Z7C70 Opt Part #: FDS400-203 Supplier: Z7C70
COM-13696	Cable - Interface, HHMPI (Honeywell HFR5-D only) Part #: FDS40-0232 Supplier: Z7C70 Opt Part #: FDS400-232 Supplier: Z7C70
COM-13697	Cable - Interface, HHMPI (L-3 Comm FA2100) Part #: FDS40-0202 Supplier: Z7C70 Opt Part #: FDS400-202 Supplier: Z7C70
COM-13750	Cable - Interface, HHMPI (L-3 Comm F1000 DFDR only) Part #: FDS40-0201 Supplier: Z7C70 Opt Part #: FDS400-201 Supplier: Z7C70
COM-23709	Ruggedized Tool - Data Acquisition (DART) Part #: KGB750-001 Supplier: 73ZG6
COM-23711	Cable - Interface, DART (For Honeywell HFR5) Part #: KGB750-108 Supplier: 73ZG6
COM-23712	Cable - Interface, DART (For L-3 FA2100) Part #: KGB750-100 Supplier: 73ZG6
COM-23713	Cable - Interface, DART (For Honeywell SSFDR) Part #: KGB750-102 Supplier: 73ZG6
SPL-1808	Cable - Adapter (Use with Teledyne DFDAU Flight Line Tester P/N 2229738) Part #: A31007-59 Supplier: 81205

C. Consumable Materials

Reference	Description	Specification
A50110	Sealant - Fuel Tank	BMS5-45 Class B-2
A50231	Sealant - Pressure And Environmental - Chromate Type	BMS5-95 Class B
A50296	Sealant - Pressure And Environmental - Chromate Type	BMS5-95 Class C
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I

ECCN 9E991 BOEING PROPRIETARY - See title page for details

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Accelerometer	31-31-81-01-050	LOM ALL
		31-31-81-01-055	LOM ALL

E. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

F. Flight Data Recorder Accelerometer Installation

SUBTASK 31-31-81-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

SUBTASK 31-31-81-200-001

(2) Make sure that the flight data recorder accelerometer [1] does not have external damage.

SUBTASK 31-31-81-110-001

(3) Prepare a fay surface bond between the mating surfaces of the flight data recorder accelerometer [1] and bracket (SWPM 20-20-00).

(a) Do the abrasive cleaning procedure for the bonding surfaces of the flight data recorder accelerometer [1] and bracket.

(b) Do the solvent cleaning procedure for the bonding surfaces of the flight data recorder accelerometer [1] and bracket.

(c) Install a fay surface bond between the flight data recorder accelerometer [1] and bracket (SWPM 20-20-00).

LOM ALL; AIRPLANES WITH ACCELEROMETER PART NUMBERS 822-2019-101, 971-4193-001 AND 3001-01-111

(d) Apply sealant, A50110, sealant, A50231, or sealant, A50296, to one of the mating surfaces.

NOTE: If there were no sealant found during accelerometer removal, sealant should not be applied.

LOM ALL

SUBTASK 31-31-81-020-002

(4) Install the flight data recorder accelerometer [1]:

(a) Install the flight data recorder accelerometer [1] onto the mounting bracket.

LOM ALL; AIRPLANES WITH ACCELEROMETER PART NUMBERS 822-2019-101, 971-4193-001 AND 3001-01-111

1) Make sure that the sealant squeeze-out is continuous and visible along the edges.

2) Remove the unwanted sealant from the flight data recorder accelerometer [1] and bracket.

LOM ALL

(b) Install the bolts [2].

(c) Install the electrical connector [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-81-760-001

(5) Measure the electrical bonding resistance between the flight data recorder accelerometer [1] and bracket (SWPM 20-20-00).

(a) Use an intrinsically safe approved bonding meter, COM-1550.

LOM ALL; AIRPLANES WITH ACCELEROMETER PART NUMBERS 971-4193-001 AND 3001-01-111

(b) Make sure that the electrical bonding resistance is 0.0005 ohm (0.5 milliohm) or less.

LOM ALL; AIRPLANES WITH ACCELEROMETER PART NUMBER 822-2019-101

(c) Make sure that the electrical bonding resistance is 0.001 ohm (1.0 milliohm) or less.

LOM ALL; AIRPLANES WITH ACCELEROMETER PART NUMBER 18-3001-3

(d) Make sure that the electrical bonding resistance is 0.01 ohm (10 milliohm) or less.

LOM ALL

SUBTASK 31-31-81-600-001

(6) Manually apply coating, C00064, to the remaining bare aluminium areas on the structure.

SUBTASK 31-31-81-600-002

(7) Apply one coat of primer, C00259, to cover all exposed bare areas on the bracket around the bolts [2].

G. Installation Test

NOTE: This is not a full system test. If the full test is necessary, refer to TASK 31-31-00-730-801.

SUBTASK 31-31-81-710-001

(1) Use one of the testers listed below to perform the system test:

NOTE: When a task uses subframe 0 it indicates that a parameter is for all 4 subframes. Some portable testers do not have a selection switch for subframe 0. On these testers, you can make a selection of subframes ALL or subframe 1 through 4 when a task uses subframe 0.

(a) Do these steps to prepare the Flight Data Systems Hand-Held Multi-Purpose Interface Unit (HHMPI), COM-13694:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the Hand Held Multi-Purpose Interface (HHMPI) cable to the Solid-State Flight Data Recorder (SSFDR):

- HHMPI interface cable (L-3 Comm FA2100), COM-13697
- HHMPI interface cable (Honeywell SSDFDR), COM-13695
- HHMPI interface cable (Honeywell HFR5-D), COM-13696
- HHMPI interface cable (L-3 Comm F1000 DFDR), COM-13750.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Select the LIVE DATA VIEW on the HHMPI.

NOTE: Once the parameters start loading scroll through each data sub frame using the up and down arrows. Use the left and right arrows to view through the word numbers.

(b) Do these steps to prepare the L3 portable interface unit, COM-2553:

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the L3 portable interface unit, COM-2553, to the connector on the Flight Data Recorder (FDR).

3) Make sure that these circuit breakers are closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Put the cursor on FDR Word Monitor in the Main Menu and push SELECT.

6) Set the WORD and SUBFRAME as specified.

(c) Do these steps to prepare the teledyne portable tester, COM-1807:

1) Remove the shorting plug from the system test plug on the P18 panel.

2) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

3) Use the portable tester adapter cable, SPL-1808, to connect the teledyne portable tester, COM-1807, to the system test plug.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

5) Make sure that the DFDAU switch on portable tester adapter cable, SPL-1808, is in the OUTPUT TO DFDR position.

6) Make sure that the FDEP switch on the portable tester adapter cable, SPL-1808, is in the DISCONNECT position.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

7) Set the portable tester, COM-1807, to read 256 WPS.

LOM 427-434, 437-447, 450-999

8) Set the portable tester, COM-1807, to read 512 WPS.

LOM ALL

(d) If you use the STP tester, set the control switches as follows:

1) Set the ON/OFF power switch to the ON position.

2) Push the STP TEST switch and make sure there is no failure message on the tester.

3) Push the CLR switch.

4) Push the FDAU switch.

5) Set the UPDATE switch to the AUTO position.

6) Set the SUBFRAME and WORD as specified.

(e) If you use the digital signal display unit, COM-10631, set the control switches as follows:

1) Set the ON/OFF power switch to the on Position.

2) Set the SYNC switch to SYNC B.

3) Set the INPUT switch to the ARINC INPUT DATA position.

4) Set the OCTAL DISPLAY switch to 12 BITS.

5) Set the PARAMETER DATA/DOC DATA switch to the PARAMETER DATA position.

6) Set the SUBFRAME and WORD as specified.

(f) If you use the handheld download unit, COM-2550, do the steps that follow:

NOTE: These steps are for airplanes equipped with Alliedsignal FDR only.

1) Set the function switch on the flight recorder control panel to the ON position.

2) Push the red button on top of the handheld download unit, COM-2550.

3) Set the DSDU switch.

4) Set the BASE switch.

5) In the BASE SELECT menu, set OCT for octal values.

6) Set the SUBFRAME and WORD as specified.

NOTE: For SUBFRAME 0, select ALL.

(g) If you use the MADU, COM-4132, set the control switches as follow:

1) Set the ON/OFF power switch to the ON position.

2) Push the FUN switch, then enter numeric 5 on the MADU.

3) Push the DATA switch, then numeric 03.

4) Push the FUN switch, then numeric 03 for SUBFRAME.

5) Push the DATA switch, then numeric 4 for WORD.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

6) Set the SUBFRAME and WORD as specified.

(h) Do the steps below to prepare the handheld download unit, COM-913, for the system test:

NOTE: These steps are only applicable to airplanes with AlliedSignal SSFDR.

1) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

2) Connect the handheld download unit, COM-913, to the connector on the FDR.

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

4) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the TEST position.

5) Push the power button on the handheld download unit, COM-913.

6) Set the DSDU switch.

NOTE: This is only for the HHDLU.

7) Set the BASE switch.

NOTE: This is only for the HHDLU.

8) Run the EHHDLU program.

NOTE: This is only for the EHHDLU.

9) Push the MONITOR button.

NOTE: This is only for the EHHDLU.

10) Set the recorder type.

NOTE: This is only for the EHHDLU.

11) Set the WORD and SUBFRAME as specified.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(i) Do the steps below to prepare the data acquisition ruggedized tool, COM-23709.

1) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

2) Make sure that the data acquisition ruggedized tool, COM-23709, is turned ON.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

3) Connect the DART interface cable, COM-23713, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

4) Connect the DART interface cable, COM-23711, to the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

5) Connect the DART interface cable, COM-23712, to the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

6) Make sure that DETECTED CABLE field, on the DART screen, indicates the attached cable.
7) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.
8) Make sure that RECORDER field, on the DART screen, shows CONNECTED.
9) Make sure that function buttons, F1, F2, and F3, on the DART screen, are red in color.
10) Push the F3 button for MONITOR DATA on the DART screen.
11) Use the Up, Down, Left, and Right arrow buttons and Enter button to make the following selections on the DATA DEFINITION screen:
    a) Select Octal DATA FORMAT
    b) Select the applicable DATA RATE
    c) Select Normal DISPLAY MODE
    d) Select the applicable SYNC TYPE
    e) Select NO for the SUPER FRAME.
12) Push F4 button to select NEXT.
13) On the Data Word Definition screen, set the WORD and SUBFRAME as specified.
    a) For SUBFRAME 0, select ALL.
14) Push F4 button to select START MONITORING.
15) If necessary, enter the aircraft tail number.
    a) Use the Up, Down, Left, and Right arrow buttons to navigate around the keyboard.
    b) Push the Enter button to add the selected alphanumeric digit to the aircraft tail number text entry area.
    c) Push F4 button to select OK.

LOM ALL

SUBTASK 31-31-81-860-004

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
C	9	C00109	FLIGHT RECORDER AC
C	10	C00468	FLIGHT RECORDER DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-81-700-001

(3) Do this test of the flight data recorder accelerometer [1]:

NOTE: For SUBFRAME 0, select ALL.

(a) For Vertical Acceleration, set the portable tester to subframe 0, word 34.

1) Make sure that octal value 3514 to 3636 shows on the tester.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-426

(b) For Lateral Acceleration, set the portable tester to subframe 0, word 36.

1) Make sure that octal value 4031 to 4213 shows on the tester.

LOM 427-434, 437-447, 450-999

(c) For Lateral Acceleration, set the tester to subframe 0, word 21.

1) Make sure that the tester shows 4030 to 4213.

LOM ALL

(d) For Longitudinal Acceleration, set the portable tester to subframe 0, word 45.

1) Make sure that octal value 4031 to 4213 shows on the tester.

H. Put the Airplane Back to Its Usual Condition

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

SUBTASK 31-31-81-860-008

(1) For the data acquisition ruggedized tool, COM-23709, do these steps:

(a) Do this task: Flight Data Recorder System - Deactivation, TASK 31-31-00-040-801.

LOM 402, 406, 407, 411, 412, 415, 420, 422-426; AIRPLANES WITH FDR PART NUMBER 980-4700-003 or 980-4700-042

(b) Disconnect the DART interface cable, COM-23713, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM 432-434, 437-442, 445-447, 450, 453-460, 464, 465; AIRPLANES WITH FDR PART NUMBER 980-4750-00X

(c) Disconnect the DART interface cable, COM-23711, from the FDR and J2 connector on data acquisition ruggedized tool, COM-23709.

LOM 404, 416, 427-431, 443, 444, 451, 452, 461-463, 466-999; AIRPLANES WITH FDR PART NUMBER 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(d) Disconnect the DART interface cable, COM-23712, from the FDR and J1 connector on data acquisition ruggedized tool, COM-23709.

LOM ALL; AIRPLANES WITH FDR PART NUMBER 980-4700-003, 980-4700-042, 980-4750-00X, 2100-4043-00, 2100-4045-22, 2100-4945-22, or 2100-4945-23

(e) Do this task: Flight Data Recorder System - Activation, TASK 31-31-00-440-801.

LOM ALL

SUBTASK 31-31-81-840-002

(2) Put the FLIGHT RECORDER TEST switch, on the P5 aft overhead panel, to the NORM position.

SUBTASK 31-31-81-860-005

(3) Remove power from the tester.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-31-81-860-006

(4) Remove the tester from the airplane.

SUBTASK 31-31-81-420-001

(5) Install the shorting plug on the system test plug on the P18 panel.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1. General
   A. This procedure has these tasks:
      (1) Printer Deactivation
      (2) Printer Activation

TASK 31-33-01-040-801

2. Printer - Deactivation
   A. General
      (1) This procedure removes electrical power to the Printer.
   B. Location Zones

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

   C. Procedure

SUBTASK 31-33-01-860-045

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

   D. Printer - Tryout

NOTE: This tryout is to make sure the Printer is in a zero energy state.

SUBTASK 31-33-01-860-046

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

SUBTASK 31-33-01-860-049

(2) Make sure the power on light on the front of the printer is off.

——— END OF TASK ———

TASK 31-33-01-440-801

3. Printer - Activation
   A. General
      (1) This procedure adds electrical power to the Printer.
   B. Location Zones

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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Procedure

SUBTASK 31-33-01-860-048

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PRINTER - SERVICING

1. **General**
   A. This procedure has this task:
      (1) An installation of paper in the printer.
   B. The printer is on the aisle stand, P8.

TASK 31-33-01-400-802

2. **Printer Paper Installation**
   (Figure 301)

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. Consumable Materials

Reference	Description	Specification
B50019	Solvent - Azeotropic Mixture Of HCFC-141b & Methanol - MicroCare Genesolv 2004	

C. Location Zones

Zone	Area
117	Electrical and Electronics Compartment - Left

D. Installation Procedure

SUBTASK 31-33-01-860-007

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

LOM 402, 406, 407, 412, 415, 420, 422-425, 427, 428, 432-434, 437-447, 450, 453-460, 465-999

SUBTASK 31-33-01-860-042

(2) Do these steps to install the printer paper:
   (a) Open the printer door by turning the latch [2] counterclockwise.
   (b) Release the paper spindle [3] from the right side of the printer door [1].
   (c) Move the paper spool [4] to the left until the right spindle disengages from the door bracket.
   (d) Pull out the paper spindle [3].
   (e) Remove and discard the cardboard tube.
   (f) Insert the new paper roll [5] onto the spindle.
   (g) Latch the paper spindle into position.
   (h) Thread the end of the paper through the guide bar and out of the paper cutter slot.
   (i) Close the printer door.
   (j) Do this task: Supply Electrical Power, TASK 24-22-00-860-811.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

(l) Push and hold the SLEW switch [6] on the front of the printer until paper comes out of the slot.

LOM 429-431, 461-464

SUBTASK 31-33-01-020-007

(3) Do these steps to install the printer paper:

(a) Push the two fasteners toward the control panel.

(b) Open the printer door.

(c) Remove the paper supply shaft from the printer chassis.

(d) Do these steps when the printer has print two rolls of paper:

1) Moisten a cotton swab with MicroCare Genesolv 2004 solvent, B50019.

2) Clean the printhead with the cotton swab.

(e) Discard the empty paper roll.

(f) Put a new paper roll into the paper supply shaft.

1) Make sure the paper is rolling off from the top.

(g) Put the paper roll shaft into the printer chassis.

(h) Pull out approximately 12 inches (31 cm) of paper.

(i) Close the printer door by pushing, where indicated, on the front panel.

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

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

(l) Push the PPR ADV switch on the front of the printer.

1) Make sure the printer paper advances.

LOM 402, 406, 407, 412, 415, 420, 422-425, 427-434, 437-447, 450, 453-999

SUBTASK 31-33-01-400-012

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

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Printer Servicing
Figure 301/31-33-01-990-802 (Sheet 1 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PRINTER

AIRBORNE PRINTER PAPER INSTALLATION

H13334 S0006574524_V2

Printer Servicing
Figure 301/31-33-01-990-802 (Sheet 2 of 2)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

PRINTER - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the printer.

(2) An installation of the printer.

B. The printer is on the aisle stand, P8.

TASK 31-33-01-000-801

2. Printer Removal

(Figure 401)

A. Location Zones

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

B. Printer Removal

SUBTASK 31-33-01-860-001

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

Circuit Breaker Panel 5, P8

Row	Col	Number	Name
---	---	C01097	ELEX PANEL LIGHTS AFT F/O

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

SUBTASK 31-33-01-860-002

(2) Loosen the fasteners that hold the printer [1] to the panel.

SUBTASK 31-33-01-010-001

(3) Remove the printer [1] from the panel.

SUBTASK 31-33-01-000-001

CAUTION

PUT A TAG ON THE CONNECTOR IF YOU REMOVE MORE THAN ONE CONNECTOR IN THE SAME AREA. IF YOU INCORRECTLY CONNECT THE CONNECTORS, IT CAN CAUSE DAMAGE TO THE EQUIPMENT.

(4) Disconnect the electrical connector [3] from the printer [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THE LOCATION OF THE PRINTER CAN VARY ON THE AISLE STAND.

G92296 S0006574534_V2

Printer Installation
Figure 401/31-33-01-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-33-01-400-801

3. Printer Installation

(Figure 401)

A. References

Reference	Title
31-33-01-400-802	Printer Paper Installation (P/B 301)
SWPM 20-10-11	WIRING ASSEMBLY AND INSTALLATION CONFIGURATION

B. Location Zones

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

C. Printer Installation

SUBTASK 31-33-01-860-003

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

Circuit Breaker Panel 5, P8

Row	Col	Number	Name
---	---	C01097	ELEX PANEL LIGHTS AFT F/O

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

SUBTASK 31-33-01-400-013

(2) Connect the electrical connector [3] to the printer [1].

(a) Make sure that the wire bundle does not have excessive slack and can maintain clearance.

NOTE: The wire should be adjusted to maintain clearance from the printer and its connector backshell. If it is necessary, a protective sleeve can be installed on the wire bundle in accordance with SWPM 20-10-11.

SUBTASK 31-33-01-400-001

(3) Install the printer [1].

SUBTASK 31-33-01-400-002

(4) Tighten the fasteners that hold the printer [1].

D. Installation Test

SUBTASK 31-33-01-860-004

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

Circuit Breaker Panel 5, P8

Row	Col	Number	Name
---	---	C01097	ELEX PANEL LIGHTS AFT F/O

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	5	C01216	PRINTER

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 407, 412, 415, 420, 422-425, 427, 428, 432-434, 437-447, 450, 453-460, 465-999

SUBTASK 31-33-01-400-004

(2) Do these steps to do an installation test of the printer:

(a) Push the SLEW switch to make sure that the printer [1] has paper.

NOTE: If the edge of the paper shows a color, there is not sufficient paper in the printer.

1) If there is not sufficient paper in the printer, install paper in the printer (Printer Paper Installation, TASK 31-33-01-400-802).

(b) Push the TEST and RESET switch at the same time.

(c) Make sure that the printer prints a page of test pattern.

LOM 429-431, 461-464

SUBTASK 31-33-01-710-001

(3) Do these steps to do an installation test of the printer:

(a) Push the PPR ADV switch, on the front panel of the printer [1].

1) Make sure that there is no red stripe on the printer paper.

NOTE: The red stripe on the printer paper indicates that there is 6 feet or less of paper in the printer.

a) If there is not sufficient paper in the printer, install paper in the printer (Printer Paper Installation, TASK 31-33-01-400-802).

(b) Push the TEST switch on the front of the printer [1].

1) Make sure that the printer prints a page of test symbols.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AURAL WARNING SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

(1) Aural Warning System Deactivation.

(2) Aural Warning System Activation.

TASK 31-51-00-040-801

2. Aural Warning System - Deactivation

(Figure 201)

A. General

(1) This procedure removes electrical power from the Aural Warning System.

B. Location Zones

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

C. Procedure

SUBTASK 31-51-00-860-180

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	3	C00170	MACH WARN SYS-1

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
A	21	C00396	FIRE PROT DETECTION MA WRN & CONT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

D. Aural Warning System - Tryout

NOTE: This tryout is to make sure the Aural Warning System is in a zero energy state.

SUBTASK 31-51-00-860-181

(1)

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	3	C00170	MACH WARN SYS-1

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
A	21	C00396	FIRE PROT DETECTION MA WRN & CONT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-00-700-001

(2) Do the following steps at the aural warning module:

(a) Turn and hold the ROTATE TO TEST switch on top of the aural warning module to the A position.

1) Make sure you do not hear the intermittent horn.

(b) Release the ROTATE TO TEST switch.

1) Make sure you do not hear the clacker.

(c) Turn and hold the ROTATE TO TEST switch on top of the aural warning module to the B position.

1) Make sure you do not hear the intermittent horn.

(d) Release the ROTATE TO TEST switch.

1) Make sure you do not hear the clacker.

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

2382910 S0000545658_V2

Aural Warning Module
Figure 201/31-51-00-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-00-440-801

3. **Aural Warning System - Activation**
(Figure 201)

A. General

(1) This procedure adds electrical power to the Aural Warning System.

B. Location Zones

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

C. Procedure

SUBTASK 31-51-00-860-182

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	3	C00170	MACH WARN SYS-1

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES
A	21	C00396	FIRE PROT DETECTION MA WRN & CONT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AURAL WARNING SYSTEM - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) An aural warning module BITE test

(2) A system test

(3) A landing warning system test

(4) A takeoff warning system test

(5) An autothrottle switchpack test

TASK 31-51-00-740-801

2. Aural Warning Module BITE Test

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The BITE does an operational check of the two channels within the aural warning module. You need to do a test of channel A and channel B separately. Failure of this BITE test indicates a failure of the module only.

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 31-51-00-860-001

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

SUBTASK 31-51-00-860-002

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-00-740-001

(3) Do the channel A BITE test as follows:

(a) Turn and hold the ROTATE TO TEST switch on top of the aural warning module to the A position.

1) Make sure you hear the intermittent horn.

(b) Release the ROTATE TO TEST switch.

1) Make sure you hear the clacker for approximately 5 seconds.

SUBTASK 31-51-00-740-002

(4) Do the channel B BITE test as follows:

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(a) Turn and hold the ROTATE TO TEST switch on top of the aural warning module to the B position.

1) Make sure you hear the intermittent horn.

(b) Release the ROTATE TO TEST switch.

1) Make sure you hear the clacker for approximately 5 seconds.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-00-860-003

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

——— END OF TASK ———

TASK 31-51-00-730-801

3. Aural Warning System - System Test

A. General

(1) The System Test does an operation test of the takeoff and landing aural warning systems.

(a) You can do the entire system test or the individual takeoff warning and landing warning system tests.

B. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear

C. Procedure

SUBTASK 31-51-00-740-003

(1) Do this task: Aural Warning Module BITE Test, TASK 31-51-00-740-801.

SUBTASK 31-51-00-730-001

(2) Do this task: Landing Warning System Test, TASK 31-51-00-730-802.

SUBTASK 31-51-00-730-002

(3) Do this task: Takeoff Warning System Test, TASK 31-51-00-730-803.

SUBTASK 31-51-00-741-008

(4) Do this task: Autothrottle - Switchpack Test, TASK 31-51-00-741-804

——— END OF TASK ———

TASK 31-51-00-730-802

4. Landing Warning System Test

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The Landing Warning System (LWS) will come on if the airplane is in a landing configuration and any of the gear is not down and locked. The landing warning horn that you will hear is continuous.

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(2) The LWS receives inputs from the gear down lock sensors, the landing gear lever position, the radio altimeters, the thrust lever position switches, the flap landing warning switch (S138), the Stall Warning Yaw Damper (SWYD) computers, the horn cutout switch and the engine running relays.

(3) The continuous landing warning horn will sound when a gear is not down and locked and one of these conditions exist:

(a) The trailing edge flaps are from 0 and 10 units when one thrust lever is set to a Thrust Lever Angle (TLA) that is less than 21 degrees of thrust, while the other thrust lever is set to a TLA that is less than 34 degree of thrust and the radio altitude is less than 800 ft (244 m).

NOTE: The horn can be silenced with the horn cutout switch only when the radio altitude is between 200 ft (61 m) and 800 ft (244 m).

(b) The trailing edge flaps are positioned from 15 to 25 units with one of the TLA is at less than 21 degrees of thrust and the other TLA is at less than 34 degrees of thrust. The horn cannot be stopped with the horn cutout switch.

NOTE: The thrust lever settings are different during a one engine landing.

(c) The trailing edge flaps are at more than 25 units. The position of the TLAs does not matter. The horn cannot be stopped with the horn cutout switch.

B. References

Reference	Title
10-11-05-500-801	Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots (P/B 201)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (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)
34-33-00-700-801	Radio Altitude Simulation Test (P/B 201)
36-00-00-860-806	Remove Pressure from the Pneumatic System (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-706	Protractor - Thrust Reverser Levers, Digital Readout Part #: G76002-42 Supplier: 81205 Opt Part #: G76002-19 Supplier: 81205 Opt Part #: G76002-37 Supplier: 81205
SPL-1680	Protractor Assembly - Control Column Part #: A27021-29 Supplier: 81205 Part #: G76002-42 Supplier: 81205 Opt Part #: 4MIT65B80307-1 Supplier: 81205 Opt Part #: F52485-500 Supplier: 81205 Opt Part #: G76002-19 Supplier: 81205 Opt Part #: G76002-37 Supplier: 81205
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205

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D. Location Zones

Zone	Area
133	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Left
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear

E. Prepare for the Test

SUBTASK 31-51-00-860-141

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

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
B	4	C01003	ENGINE 1 THRUST REVERSER IND
B	5	C00276	ENGINE 1 THRUST REVERSER CONT
B	6	C01412	ENGINE 1 THRUST REVERSER INTLK
B	7	C01266	ENGINE 1 THRUST REVERSER SYNC LOCK

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	6	C00148	ANTI-ICE & RAIN ENG 1 & WING CONT
B	6	C00149	ANTI-ICE & RAIN ENGINE 2 CONTROL

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	5	C01267	ENGINE 2 THRUST REVERSER SYNC LOCK
C	6	C01413	ENGINE 2 THRUST REVERSER INTLK
C	7	C00277	ENGINE 2 THRUST REVERSER CONT
C	8	C01004	ENGINE 2 THRUST REVERSER IND

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

SUBTASK 31-51-00-420-013

(2) Use one of the methods below to set the thrust levers:

NOTE: The value that shows on the digital protractor is measured in TLA.

NOTE: The value that shows on the Control Display Unit (CDU) is measured in Thrust Resolver Angle (TRA).

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(a) Install the thrust reverser lever protractor, SPL-706, or protractor, SPL-1680, on the thrust levers No. 1 and 2 to measure the TLA.

NOTE: Idle = 0 degree

(b) Use TRA value on CDU to set the thrust levers.

1) Do these steps to show engine test menu on the Flight Management Computer System (FMCS) CDU:

a) Make sure that the applicable engine thrust lever and reverse thrust lever is at the IDLE stop.

b) Get access to the FMCS CDU in the flight compartment.

c) Press the INIT REF key to show the PERF INIT screen on the FMCS CDU.

d) Push these Line Select Key (LSK) on the FMCS CDU:

<1> INDEX.

<2> MAINT.

NOTE: This LSK causes the MAINT BITE INDEX screen to show.

<3> ENGINE.

NOTE: This LSK causes the ENGINE/EXCEED BITE INDEX screen to show.

<4> ENGINE X for the applicable resolver.

NOTE: This LSK causes the ENGINE X BITE TEST MAIN MENU to show. Also, the ENGINE X LSK automatically applies power to the Electronic Engine Control (EEC) and causes the EEC to initialize. The CDU will show INITIALIZING EEC X, and EEC SORTING FAULT HISTORY DATA for a short time, just before the ENGINE X BITE TEST MAIN MENU shows.

2) Do these steps to show the TRA values for the Engine X thrust lever:

a) Push the INPUT MONITORING LSK.

NOTE: This will cause the CAUTION SCREEN OF INPUT MONITORING to show.

b) Push the CONTINUE LSK.

c) Push the CONTROL LOOPS LSK.

NOTE: This will cause screen 1 of the CONTROL LOOPS to show.

d) Push the NEXT PAGE key two times.

NOTE: This will cause screen 3 of the CONTROL LOOPS to show.

e) Push the TRA LSK on screen 3 of the CONTROL LOOPS.

NOTE: This causes the TRA for channels A and B, of Engine X, to show.

NOTE: The data for the channel that is in control will show first.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Landing Warning System Test

SUBTASK 31-51-00-860-160

> **WARNING**
> MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDER, ELEVATORS, FLAPS, SPOILERS, SLATS, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

> **CAUTION**
> MAKE SURE THAT THE INBOARD FAN COWL PANEL AND THE INBOARD AND OUTBOARD THRUST REVERSERS ARE CLOSED AND IN THE STOWED POSITION OR REMOVED BEFORE YOU EXTEND THE LEADING EDGE FLAPS AND SLATS. THERE IS NOT SUFFICIENT CLEARANCE FOR THE FLAPS AND SLATS TO EXTEND IF THE INBOARD FAN COWL PANEL AND THE INBOARD AND OUTBOARD THRUST REVERSERS ARE IN THE OPEN POSITION. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

(1) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 31-51-00-860-159

(2) Make sure that the trailing edge flaps are in the 1 unit position.
   (a) Set the stabilizer within 1 unit center of the green band.
   (b) Set the speed brake lever to the DOWN position.
   (c) Do this task: Chock Installation in Winds or Wind Gusts to a Maximum of 35 Knots, TASK 10-11-05-500-801.
   (d) Release the parking brake.

SUBTASK 31-51-00-420-016

> **WARNING**
> MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

(3) Set the landing gear lever to the OFF position.
   (a) Make sure that the green and red NOSE GEAR Lights are on.

SUBTASK 31-51-00-860-158

(4) Do these steps to simulate the engine operations:
   (a) Make sure that the pneumatic power is OFF to the engine starters.
      1) If it is necessary, do this task: Remove Pressure from the Pneumatic System, TASK 36-00-00-860-806.
   (b) Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1

(c) Set the two engine start levers to the IDLE position.

1) Wait a minimum of 5 minutes before proceeding.

SUBTASK 31-51-00-860-122

WARNING

MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(5) Move the thrust levers No. 1 and 2 to the full forward thrust position.

SUBTASK 31-51-00-480-001

(6) Put deactuators from the proximity sensor test set, SPL-1690, between the sensor and the target for these switches to simulate a nose gear not down condition:

(a) The #1 nose gear down sensor, S845

(b) The #2 nose gear down sensor, S853.

SUBTASK 31-51-00-210-001

(7) Make sure that the red and green NOSE GEAR lights go off.

NOTE: If the red and green NOSE gear lights do not go off, add additional deactuators as necessary until the lights go out.

SUBTASK 31-51-00-750-050

(8) Do a radio simulation of 700 ft (213 m) at the no.1 radio altimeters, do this task: Radio Altitude Simulation Test, TASK 34-33-00-700-801.

SUBTASK 31-51-00-750-071

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	3	C01046	AFCS SYS B FCC DC

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-750-051

WARNING	MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(10) Set thrust lever no. 1 to 30 degree TLA or 61 degree TRA.

SUBTASK 31-51-00-750-001

(11) Move the thrust lever no. 2 to the idle position.

(a) Make sure that the continuous horn comes on when the TLA is approximately less than 20 degree or 52 degree TRA forward of idle.

SUBTASK 31-51-00-750-052

(12) Push the horn cutout switch.

(a) Make sure that the continuous horn stops.

SUBTASK 31-51-00-750-053

(13) Move the thrust levers no. 1 and 2 to the full forward thrust position.

SUBTASK 31-51-00-750-054

(14) Set thrust lever no. 2 to 30 degree TLA or 61 degree TRA.

SUBTASK 31-51-00-750-003

(15) Move the thrust lever no. 1 to the idle position.

(a) Make sure that a continuous horn comes on when the TLA is approximately less than 20 degree TLA or 52 degree TRA forward of idle.

SUBTASK 31-51-00-750-004

(16) Push the horn cutout switch.

(a) Make sure the continuous horn stops.

SUBTASK 31-51-00-860-161

(17) Move the thrust lever no. 1 to the full forward thrust position.

SUBTASK 31-51-00-860-162

(18) Set thrust lever no. 2 to 30 degree TLA or 61 degree TRA.

SUBTASK 31-51-00-860-163

(19) Set the radio altitude simulation test set to an altitude that is less than 200 ft (61 m).

SUBTASK 31-51-00-860-164

(20) Set the thrust lever no. 1 to a position that is less than 20 degree TLA or 52 degree TRA.

(a) Make sure that a continuous horn comes on.

SUBTASK 31-51-00-860-165

(21) Push the horn cutout switch.

(a) Make sure that the continuous horn stays on.

SUBTASK 31-51-00-860-166

(22) Move the thrust lever no. 1 to the full forward thrust position.

(a) Make sure that a continuous horn stops.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-860-127

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	3	C01046	AFCS SYS B FCC DC

SUBTASK 31-51-00-750-072

(24) Do a radio simulation of 700 ft (213 m) at the no.2 radio altimeters, do this task: Radio Altitude Simulation Test, TASK 34-33-00-700-801.

SUBTASK 31-51-00-860-128

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

CAPT Electrical System Panel, P18-1

Row	Col	Number	Name
B	4	C01384	RADIO NAVIGATION RADIO ALTM 1
D	2	C01045	AFCS SYS A FCC DC

SUBTASK 31-51-00-860-129

WARNING

MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(26) Set thrust lever no. 1 to 30 degree TLA or 61 degree TRA.

SUBTASK 31-51-00-750-073

(27) Move the thrust lever no. 2 to the idle position.

(a) Make sure that the continuous horn comes on when the TLA is approximately less than 20 degree TLA or 52 TRA forward of idle.

SUBTASK 31-51-00-730-007

(28) Push the horn cutout switch.

(a) Make sure that the continuous horn stops.

SUBTASK 31-51-00-860-130

(29) Move the thrust levers no. 1 and 2 to the full forward thrust position.

SUBTASK 31-51-00-860-131

(30) Set thrust lever no. 2 to 30 degree TLA or 61 degree TRA.

SUBTASK 31-51-00-750-074

(31) Move the thrust lever no. 1 to the idle position.

(a) Make sure that a continuous horn comes on when the TLA is approximately less than 20 degree TLA or 52 degree TRA forward of idle.

SUBTASK 31-51-00-750-075

(32) Push the horn cutout switch.

(a) Make sure that the continuous horn stops.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-860-167

(33) Move the thrust lever no. 1 to the full forward thrust position.

SUBTASK 31-51-00-860-168

(34) Set thrust lever no. 2 to 30 degree TLA or 61 degree TRA.

SUBTASK 31-51-00-860-169

(35) Set the radio altitude simulation test set to an altitude that is less than 200 ft (61 m).

SUBTASK 31-51-00-860-170

(36) Set the thrust lever no. 1 to a position that is less than 20 degree TLA, or 52 degree TRA.

(a) Make sure that a continuous horn comes on.

SUBTASK 31-51-00-860-171

(37) Push the horn cutout switch.

(a) Make sure that the continuous horn stays on.

SUBTASK 31-51-00-860-172

(38) Move the thrust lever no. 1 to the full forward thrust position.

(a) Make sure that a continuous horn stops.

SUBTASK 31-51-00-860-132

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	3	C01046	AFCS SYS B FCC DC

SUBTASK 31-51-00-750-062

(40) Set thrust lever no. 2 to 30 degree TLA or 61 degree TRA.

(a) Move the thrust lever no. 1 to the idle position.

1) Make sure that the horn does not come on.

(b) Move the thrust lever no. 1 to the full forward position.

SUBTASK 31-51-00-750-056

(41) Move the trailing edge flaps to the 15 unit position.

SUBTASK 31-51-00-750-040

(42) Move thrust lever no. 1 to the idle position.

(a) Make sure that the continuous horn comes on when the TLA is less than 20 degree TLA, or 52 degree TRA forward of idle.

SUBTASK 31-51-00-750-063

(43) Push the horn cutout switch.

(a) Make sure that the continuous horn stays on.

SUBTASK 31-51-00-860-013

(44) Move the thrust lever no. 1 to the full forward thrust position.

(a) Make sure that the continuous horn stops.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-860-099

(45) Move thrust lever no. 2 to the full forward thrust position.

SUBTASK 31-51-00-860-179

(46) 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
D	2	C01045	AFCS SYS A FCC DC

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
A	16	C01385	RADIO NAVIGATION RADIO ALTM 2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
B	3	C01046	AFCS SYS B FCC DC

SUBTASK 31-51-00-860-174

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.

(47) Use the PSEU BITE panel to set SYS 1 and SYS 2 to the air mode. To set SYS 1 and SYS 2 to the air mode, do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

SUBTASK 31-51-00-860-186

(48) 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 31-51-00-860-014

(49) Move the trailing edge flaps to any position that is greater than 25 units.

(a) Make sure that the continuous horn comes on when the trailing edge flaps go past 25 units.

SUBTASK 31-51-00-750-008

(50) Move the thrust lever no. 1 to the idle position.

(a) Make sure that the continuous horn stays on.

SUBTASK 31-51-00-750-058

(51) Move the thrust lever no. 2 to the idle position.

(a) Make sure that the continuous horn stays on.

SUBTASK 31-51-00-750-009

(52) Push the horn cutout switch.

(a) Make sure that the continuous horn stays on.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-750-059

(53) Move the thrust lever no. 1 and 2 to the full forward thrust position.

SUBTASK 31-51-00-750-060

(54) Move the trailing edge flaps to the 1 unit position.

(a) Make sure that the continuous horn has stopped when the trailing edge flaps are at 25 units.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-00-860-177

(1) Set the two engine start levers to the CUT OFF position.

SUBTASK 31-51-00-860-176

(2) Move the trailing edge flaps to the 0 units position.

SUBTASK 31-51-00-860-107

(3) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-51-00-480-005

(4) Remove the deactuator from these switches:

(a) The #1 nose gear down sensor, S845

(b) The #2 nose gear down sensor, S853.

SUBTASK 31-51-00-860-178

(5) Use the PSEU BITE panel to set SYS 1 and SYS 2 to the ground mode. To set SYS 1 and SYS 2 to the ground mode, do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 31-51-00-480-007

(6) Set the landing gear lever to the DOWN position.

SUBTASK 31-51-00-480-008

(7) Return the brake to the usual condition.

SUBTASK 31-51-00-420-003

(8) Move the thrust levers no. 1 and 2 to the idle position.

SUBTASK 31-51-00-420-002

(9) Remove the thrust reverser lever protractor, SPL-706, or protractor, SPL-1680, if installed.

SUBTASK 31-51-00-420-005

(10) Remove the radio altimeter test set (TASK 34-33-00-700-801).

SUBTASK 31-51-00-860-173

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

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	1	C00458	ENGINE 1 IGNITION RIGHT
A	3	C00153	ENGINE 1 IGNITION LEFT
B	4	C01003	ENGINE 1 THRUST REVERSER IND
B	5	C00276	ENGINE 1 THRUST REVERSER CONT

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(Continued)

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	6	C01412	ENGINE 1 THRUST REVERSER INTLK
B	7	C01266	ENGINE 1 THRUST REVERSER SYNC LOCK

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	6	C00148	ANTI-ICE & RAIN ENG 1 & WING CONT
B	6	C00149	ANTI-ICE & RAIN ENGINE 2 CONTROL

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	13	C00120	WEATHER RADAR RT

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	5	C01267	ENGINE 2 THRUST REVERSER SYNC LOCK
C	6	C01413	ENGINE 2 THRUST REVERSER INTLK
C	7	C00277	ENGINE 2 THRUST REVERSER CONT
C	8	C01004	ENGINE 2 THRUST REVERSER IND
D	4	C00459	ENGINE 2 IGNITION RIGHT
D	6	C00151	ENGINE 2 IGNITION LEFT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	3	C00360	FUEL SPAR VALVE ENG 2
B	4	C00359	FUEL SPAR VALVE ENG 1
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

END OF TASK

TASK 31-51-00-730-803

5. Takeoff Warning System Test

NOTE: This procedure is a scheduled maintenance task.

A. General

LOM 415, 420 PRE SB 737-31A1332

(1) The TAKEOFF CONFIG indicator lights installed on the P1-3 captains' instrument panel and the P3-1 first officer's instrument panel have been placarded inoperative. However, these indicator lights will come on when the lights switch on the captain's instrument panel P1-3 is set to the TEST position.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

(2) TAKEOFF CONFIG indicator lights are installed on the P1-3 captains instrument panel, and the P3-1 first officer's instrument panel. They will come on when the takeoff warning horn comes on.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(3) The takeoff warning system will come on if the airplane is not in a takeoff configuration and you move the thrust levers forward for takeoff. The takeoff warning horn that you will hear is intermittent.

(4) The parking brake is released during the takeoff warning test. This prevents the parking brake function of the takeoff warning horn from overriding the tests. Put chocks on the landing gear wheels.

(5) The intermittent takeoff warning horn will sound when the airplane is on the ground and you move one or both of the thrust levers forward for takeoff and at least one of these conditions exist:

(a) The stabilizer is not in the green band

(b) The trailing edge flaps are at less than 1 unit or more than 25 units

(c) The leading edge flaps/slats are not in the extend or full extend position, or are in a UCM condition

(d) The speedbrake handle is not down

(e) The parking brake is set

(f) The ground spoilers are not down

(6) The intermittent takeoff warning horn will also sound when the airplane is in the air and all of the conditions below exist:

(a) The ground spoiler valve is not closed

(b) The leading edge flaps are not extended.

(c) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

(7) The takeoff warning system has these inputs:

(a) A left throttle forward input from the left autothrottle switchpack, M1766

(b) A right throttle forward input from the right autothrottle switchpack, M1767

(c) Ground spoiler up pressure switch, S1049

(d) Ground spoiler interlock valve, S1050

(e) A logic input from the flap/slat electronics unit, M1746

(f) The speed brake switch, S651

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

(g) The airplane nose up (stabilizer leading edge down) switch, S132

(h) The airplane nose down (stabilizer leading edge up) switch, S546

LOM 422-434, 437-447, 450-999

(i) The airplane nose up (stabilizer leading edge down) switches, S132 & S1184

(j) The airplane nose down (stabilizer leading edge up) switches, S546 & S1183

LOM ALL

(k) A parking brake input.

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B. References

Reference	Title
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-09-00-860-801	Put the Airplane in the Air Mode (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)

C. Tools/Equipment

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

Reference	Description
SPL-706	Protractor - Thrust Reverser Levers, Digital Readout Part #: G76002-42 Supplier: 81205 Opt Part #: G76002-19 Supplier: 81205 Opt Part #: G76002-37 Supplier: 81205
SPL-1690	Actuators/Deactuators Set - Proximity Sensor Part #: 8-758-01 Supplier: 08748 Part #: A27092-146 Supplier: 81205

D. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
211	Flight Compartment - Left
212	Flight Compartment - Right
713	Nose Landing Gear

E. Prepare for the Test

SUBTASK 31-51-00-860-022

(1) Use the PSEU to make sure that SYS 1 and SYS 2 is in the ground mode, do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

SUBTASK 31-51-00-010-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	4	C01003	ENGINE 1 THRUST REVERSER IND
B	5	C00276	ENGINE 1 THRUST REVERSER CONT
B	6	C01412	ENGINE 1 THRUST REVERSER INTLK
B	7	C01266	ENGINE 1 THRUST REVERSER SYNC LOCK

SUBTASK 31-51-00-010-004

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	6	C00148	ANTI-ICE & RAIN ENG 1 & WING CONT
B	6	C00149	ANTI-ICE & RAIN ENGINE 2 CONTROL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-010-005

(4) 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 31-51-00-010-006

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	5	C01267	ENGINE 2 THRUST REVERSER SYNC LOCK
C	6	C01413	ENGINE 2 THRUST REVERSER INTLK
C	7	C00277	ENGINE 2 THRUST REVERSER CONT
C	8	C01004	ENGINE 2 THRUST REVERSER IND

SUBTASK 31-51-00-420-014

(6) Use one of the methods below to set the thrust levers:

NOTE: The value that shows on the digital protractor is measured in Thrust Lever Angle (TLA).

NOTE: The value that shows on the Control Display Unit (CDU) is measured in Thrust Resolver Angle (TRA).

(a) Install a thrust reverser lever protractor, SPL-706, on the thrust levers No. 1 and 2 to measure the TLA.

NOTE: Idle = 0 degree

(b) Use TRA value on the CDU to set the thrust levers.

1) Do these steps to show engine test menu on the Flight Management Computer System (FMCS) CDU:

a) Make sure that the applicable engine thrust lever and reverse thrust lever is at the IDLE stop.

b) Get access to the FMCS CDU in the flight compartment.

c) Press the INIT REF key to show the PERF INIT screen on the FMCS CDU.

d) Push these Line Select Key (LSK) on the FMCS CDU:

<1> INDEX.

<2> MAINT.

NOTE: This LSK causes the MAINT BITE INDEX screen to show.

<3> ENGINE.

NOTE: This LSK causes the ENGINE/EXCEED BITE INDEX screen to show.

<4> ENGINE X for the applicable resolver.

NOTE: This LSK causes the ENGINE X BITE TEST MAIN MENU to show. Also, the ENGINE X LSK automatically applies power to the EEC and causes the EEC to initialize. The CDU will show INITIALIZING EEC X, and EEC SORTING FAULT HISTORY DATA for a short time, just before the ENGINE X BITE TEST MAIN MENU shows.

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2) Do these steps to show the TRA values for the Engine X thrust lever:

a) Push the INPUT MONITORING LSK.

NOTE: This will cause the CAUTION SCREEN OF INPUT MONITORING to show.

b) Push the CONTINUE LSK.

c) Push the CONTROL LOOPS LSK.

NOTE: This will cause screen 1 of the CONTROL LOOPS to show.

d) Push the NEXT PAGE key two times.

NOTE: This will cause screen 3 of the CONTROL LOOPS to show.

e) Push the TRA LSK on screen 3 of the CONTROL LOOPS.

NOTE: This causes the TRA for channels A and B, of Engine X, to show.

NOTE: The data for the channel that is in control will show first.

SUBTASK 31-51-00-860-108

WARNING	KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

CAUTION	MAKE SURE THAT THE INBOARD FAN COWL PANEL AND THE INBOARD AND OUTBOARD THRUST REVERSERS ARE CLOSED AND IN THE STOWED POSITION OR REMOVED BEFORE YOU EXTEND THE LEADING EDGE FLAPS AND SLATS. THERE IS NOT SUFFICIENT CLEARANCE FOR THE FLAPS AND SLATS TO EXTEND IF THE INBOARD FAN COWL PANEL AND THE INBOARD AND OUTBOARD THRUST REVERSERS ARE IN THE OPEN POSITION. THIS CAN CAUSE DAMAGE TO EQUIPMENT.

(7) Do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 31-51-00-860-102

(8) Do these steps to set the airplane in the takeoff configuration:

(a) Move the trailing edge flaps to the 15 unit position.

(b) Set the stabilizer within 1 unit center of the green band.

(c) Set the speed brake lever to the DOWN position.

(d) Release the parking brakes.

(e) Set the thrust lever no. 2 to the idle position.

WARNING	MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(f) Set the thrust lever no. 1 to the full forward thrust position.

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F. Takeoff Warning System Test

SUBTASK 31-51-00-750-064

(1) Do these steps to do a test of the autothrottle inputs to the takeoff warning system:

(a) Wait for a minimum of 12 second before you start.

(b) Make sure that you did the Prepare for Test.

(c) Set the parking brakes.

1) Make sure that the intermittent horn comes on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(d) Move the thrust lever no. 1 to the idle position.

1) Make sure that the intermittent horn stops when the thrust lever is approximately less than 20 degrees TLA (52 degree TRA) forward of idle.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

WARNING	MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(e) Move the thrust lever no. 2 to the full forward thrust position.

1) Make sure that the intermittent horn comes on when the thrust lever is greater than approximately 20 degree TLA (52 degree TRA) forward of idle.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(f) Move the thrust lever no. 2 to the idle position.

1) Make sure that the intermittent horn goes out when the thrust lever is approximately less than 20 degree TLA (52 degree TRA) forward of idle.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

(g) Release the parking brakes.

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(h) Move the thrust lever no. 1 to the full forward thrust position.

SUBTASK 31-51-00-750-065

(2) Do these steps to do a test of the trailing edge flaps input to the takeoff warning system:

(a) If the airplane is not in the takeoff configuration, do the steps in the Prepare for the Test that put the airplane into the takeoff configuration.

(b) Move the trailing edge flaps to the 0 unit position.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

1) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

2) Make sure that the intermittent horn comes on.

NOTE: The intermittent horn can sound when the leading edge flaps are in transit.

(c) Move the thrust lever no. 1 to the idle position.

1) Make sure that the intermittent horn stops.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

(d) Move the trailing edge flaps to a position in the takeoff range (1, 2, 5, 10, 15, or 25 units detent).

(e) Move the thrust lever no. 1 to the full forward thrust position.

1) Make sure that the intermittent horn does not come on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, do not come on.

LOM ALL

(f) Move the trailing edge flaps to a position greater than 25 units.

1) Make sure that the intermittent horn comes on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(g) Move the trailing edge flaps to the 15 unit position.

1) Make sure that the intermittent horn stops when the trailing edge flaps are in a position in the takeoff range.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

SUBTASK 31-51-00-750-066

(3) Do these steps to do a check of the parking brake input and circuit breaker function to the takeoff warning system:

(a) If the airplane is not in the takeoff configuration, do the steps in the Prepare for the Test that put the airplane in the takeoff configuration.

(b) Set the parking brakes.

1) Make sure that the intermittent horn comes on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(c) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

1) Make sure that the intermittent horn stops.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(e) 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

1) Make sure that the intermittent horn turns on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(f) Release the parking brakes.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the intermittent horn stops.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

SUBTASK 31-51-00-750-067

(4) Do these steps to do a check of the speed brake handle input to the takeoff warning system:

(a) If the airplane is not in the takeoff configuration, do the steps in the Prepare for the Test that put the airplane in the takeoff configuration.

(b) Set the speed brake handle to the up position.

1) Make sure that the intermittent horn comes on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(c) Set the speed brake handle to the down position.

1) Make sure that the intermittent horn stops.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

SUBTASK 31-51-00-750-068

(5) Do these steps to do a check of the stabilizer input to the takeoff warning system:

(a) If the airplane is not in the takeoff configuration, do the steps in the Prepare for the Test that put the airplane into the takeoff configuration.

(b) Move the stabilizer through the full range of motion.

1) Make sure that the intermittent horn comes on when the green band pointer is outside of the green band range by ±1/2 unit.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

a) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

2) Set the stabilizer outside the green band range by greater than 1 unit toward the nose down position.

3) Do the following steps at the PSEU BITE panel to access the state of the input output pin:

a) Push ON/OFF to start PSEU BITE display.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

b) Select OTHER FUNCTIONS MENU.

NOTE: Push the Up and Down Arrows to move through menu options.

c) Select I/O MONITOR.

d) Select INPUTS.

e) Select CONN D10982.

<1> Verify D10982 pin 51 is GND.

f) Select CONN D10984.

<1> Verify D10984 pin 51 is NO GND.

4) Set the stabilizer outside the green band range by greater than 1 unit toward the nose up position.

5) Do the following steps at the PSEU BITE panel to access the state of the input output pin:

a) Push ON/OFF to start PSEU BITE display.

b) Select OTHER FUNCTIONS MENU.

NOTE: Push the Up and Down Arrows to move through menu options.

c) Select I/O MONITOR.

d) Select INPUTS.

e) Select CONN D10982.

<1> Verify D10982 pin 51 is GND.

f) Select CONN D10984.

<1> Verify D10984 pin 51 is NO GND.

6) Set the stabilizer to within one unit center of the green band.

7) Do the following steps at the PSEU BITE panel to access the state of the input output pin:

a) Push ON/OFF to start PSEU BITE display.

b) Select OTHER FUNCTIONS MENU.

NOTE: Push the Up and Down Arrows to move through menu options.

c) Select I/O MONITOR.

d) Select INPUTS.

e) Select CONN D10982.

<1> Verify D10982 pin 51 is NO GND.

f) Select CONN D10984.

<1> Verify D10984 pin 51 is GND.

(c) Set the thrust lever No. 1 to the idle position.

(d) Set the trailing edge flaps to the 0 unit position.

SUBTASK 31-51-00-750-069

(6) Do these steps to do a check of the takeoff warning system when the airplane is in the air:

(a) Make sure that the thrust lever No. 1 is in the idle position.

(b) Make sure that the leading edge flaps are in the up position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(c) Use the PSEU BITE panel to set SYS 1 and SYS 2 to the air mode, do this task: Put the Airplane in the Air Mode, TASK 32-09-00-860-801.

NOTE: The ground spoiler interlock is opened when you use the PSEU BITE panel or slug the air/gnd sensor target far to simulate air mode. The interlock valve is closed when you lift the airplane on jacks to simulate air mode.

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

2) Make sure that the intermittent horn comes on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

3) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(d) Open this circuit breaker and attach safety tag:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

1) Make sure that the intermittent horn stops.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

(e) Remove safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

1) Make sure that the intermittent horn comes on.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, come on.

LOM ALL

(f) Put a steel actuator from the proximity sensor test set, SPL-1690, on the ground spoiler interlock valve sensor, S1050, to simulate that the ground spoiler interlock valve is closed.

NOTE: You can also use the pull/push cable, located in the right main landing gear up link, to open and close the ground spoiler interlock valve. When the airplane is on the ground, the interlock valve closes when you push the cable up. The interlock valve opens when you pull the cable down.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the intermittent horn stops.

LOM 402, 406, 407, 416, 422-434, 437-447, 450-999; LOM 404, 411, 412, 415, 420 POST SB 737-31A1332

2) Make sure that the TAKEOFF CONFIG lights, on the P1-3 Captain's instrument panel and P3-1 First Officer's instrument panel, go off.

LOM ALL

(g) Use the PSEU Bite panel to return SYS 1 and SYS 2 to the ground mode, do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

(h) Remove the actuator.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-00-860-192

(1) If necessary, do these steps to change the airplane to its usual conditions from its takeoff configuration:

(a) Set the thrust levers to the idle position.

(b) Set the speed brake lever, stabilizer and trailing edge flap back to their usual positions.

(c) Set the parking brakes.

SUBTASK 31-51-00-020-002

(2) Remove the thrust reverser lever protractor, SPL-706, if installed.

SUBTASK 31-51-00-860-109

(3) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-51-00-410-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
B	4	C01003	ENGINE 1 THRUST REVERSER IND
B	5	C00276	ENGINE 1 THRUST REVERSER CONT
B	6	C01412	ENGINE 1 THRUST REVERSER INTLK
B	7	C01266	ENGINE 1 THRUST REVERSER SYNC LOCK

SUBTASK 31-51-00-410-003

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

CAPT Electrical System Panel, P18-3

Row	Col	Number	Name
A	6	C00148	ANTI-ICE & RAIN ENG 1 & WING CONT
B	6	C00149	ANTI-ICE & RAIN ENGINE 2 CONTROL

SUBTASK 31-51-00-410-004

(6) 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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-00-410-005

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
C	5	C01267	ENGINE 2 THRUST REVERSER SYNC LOCK
C	6	C01413	ENGINE 2 THRUST REVERSER INTLK
C	7	C00277	ENGINE 2 THRUST REVERSER CONT
C	8	C01004	ENGINE 2 THRUST REVERSER IND

END OF TASK

TASK 31-51-00-741-804

6. Autothrottle - Switchpack Test

A. General

(1) The autothrottle switch pack replacement test does a return to service test for switches S1, S8, and S9 interface with the Proximity Switch Electronic Unit (PSEU).

B. Location Zones

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
113	Area Above and Outboard of Nose Landing Gear Wheel Well - Left
114	Area Above and Outboard of Nose Landing Gear Wheel Well - Right
211	Flight Compartment - Left
211	Flight Compartment - Left

C. Access Panels

Number	Name/Location
112A	Forward Access Door

D. Prepare for the Test

SUBTASK 31-51-00-040-002

(1) Make sure that the weather radar will not operate.

(a) 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 31-51-00-860-188

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 31-51-00-860-189

(3) Open this access panel:

Number	Name/Location
112A	Forward Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

E. Autothrottle Switchpack Test

SUBTASK 31-51-00-741-009

(1) Do the autothrottle switch pack replacement test as follows:

(a) If the PSEU is not on, then push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?

(b) Push the NO button.

NOTE: The display will show FAULTS HISTORY?

(c) Push the NO button.

NOTE: The display will show GROUND TESTS?

(d) Push the NO button.

NOTE: The display will show AIR/GND OVRD?

(e) Push the NO button.

NOTE: The display will show OTHER FUNCTNS?

(f) Push the YES button.

NOTE: The display will show T/O WARN REPORT?

(g) Push the NO button.

NOTE: The display will show LGTV REPORT?

(h) Push the NO button.

NOTE: The display will show SENSOR RIGGING?

(i) Push the NO button.

NOTE: The display will show I/O MONITOR?

(j) Push the YES button.

NOTE: The display will show SENSORS?

(k) Push the “Down Arrow” button.

NOTE: The display will show INPUTS?

(l) Push the YES button.

NOTE: The display will show CONN D10982?

SUBTASK 31-51-00-741-010

(2) Do the test for M1766, S1 (Left Thrust Lever < 44 Degrees Resolver Angle) as follows:

(a) If the PSEU display is showing CONN D10982, then push the YES switch.

(b) If the PSEU display is not showing CONN D10982, repeat the autothrottle switch pack replacement test.

(c) Use the UP and/or DOWN ARROW to select PIN 40.

(d) Place the left thrust lever in a fully retarded position.

1) Make sure that the display shows PIN 40 GND.

(e) Advance the left thrust lever greater than 46 degrees thrust resolver angle but less than 51 degrees thrust resolver angle.

1) Make sure that the display shows PIN 40 NO GND.

SUBTASK 31-51-00-741-011

(3) Do the test for M1766, S8 (Left Thrust Lever > 53 Degrees Resolver Angle) as follows:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) If the PSEU display is showing CONN D10982, then push the YES switch.

(b) If the PSEU display is not showing CONN D10982, repeat the autothrottle switch pack replacement test.

(c) Use the UP and/or DOWN ARROW to select PIN 42.

(d) Advance the left thrust lever greater than 46 degrees thrust resolver angle but less than 51 degrees thrust resolver angle.

1) Make sure that the display shows PIN 42 NO GND.

(e) Advance the left thrust lever greater than 55 degrees thrust resolver angle but less than 62 degrees thrust resolver angle.

1) Make sure that the display shows PIN 42 GND.

SUBTASK 31-51-00-741-012

(4) Do the test for M1766, S9 (Left Thrust Lever < 64 Degrees Resolver Angle) as follows:

(a) If the PSEU display is showing CONN D10982, then push the YES switch.

(b) If the PSEU display is not showing CONN D10982, repeat the autothrottle switch pack replacement test.

(c) Use the UP and/or DOWN ARROW to select PIN 41.

(d) Advance the left thrust lever greater than 55 degrees thrust resolver angle but less than 62 degrees thrust resolver angle.

1) Make sure that the display shows PIN 41 GND.

(e) Advance the left thrust lever greater than 66 degrees thrust resolver angle.

1) Make sure that the display shows PIN 41 NO GND.

SUBTASK 31-51-00-741-013

(5) Do the test for M1767, S1 (Right Thrust Lever < 44 Degrees Resolver Angle) as follows:

(a) If the PSEU display is showing CONN D10982, then push the NO switch.

(b) If the PSEU display is not showing CONN D10982, repeat the autothrottle switch pack replacement test.

(c) Make sure that the display shows CONN D10984, then push the YES switch.

(d) Use the UP and/or DOWN ARROW to select PIN 40.

(e) Place the right thrust lever in a fully retarded position.

1) Make sure that the display shows PIN 40 GND.

(f) Advance the right thrust lever greater than 46 degrees thrust resolver angle but less than 51 degrees thrust resolver angle.

1) Make sure that the display shows PIN 40 NO GND.

SUBTASK 31-51-00-741-014

(6) Do the test for M1767, S8 (Right Thrust Lever > 53 Degrees Resolver Angle) as follows:

(a) If the PSEU display is showing CONN D10982, then push the NO switch.

(b) If the PSEU display is not showing CONN D10982, repeat the autothrottle switch pack replacement test.

(c) Make sure that the display shows CONN D10984, then push the YES switch.

(d) Use the UP and/or DOWN ARROW to select PIN 42.

(e) Advance the right thrust lever greater than 46 degrees thrust resolver angle but less than 51 degrees thrust resolver angle.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the display shows PIN 42 NO GND.

(f) Advance the right thrust lever greater than 55 degrees thrust resolver angle but less than 62 degrees thrust resolver angle.

1) Make sure that the display shows PIN 42 GND.

SUBTASK 31-51-00-741-015

(7) Do the test for M1767, S9 (Right Thrust Lever < 64 Degrees Resolver Angle) as follows:

(a) If the PSEU display is showing CONN D10982, then push the NO switch.

(b) If the PSEU display is not showing CONN D10982, repeat the autothrottle switch pack replacement test.

(c) Make sure that the display shows CONN D10984, then push the YES switch.

(d) Use the UP and/or DOWN ARROW to select PIN 41.

(e) Advance the right thrust lever greater than 55 degrees thrust resolver angle but less than 62 degrees thrust resolver angle.

1) Make sure that the display shows PIN 41 GND.

(f) Advance the right thrust lever greater than 66 degrees.

1) Make sure that the display shows PIN 41 NO GND.

(g) Push the ON/OFF button.

NOTE: The display will show TURN OFF DISPLAY?

(h) Push the YES button.

NOTE: The display will turn off.

(i) The test is completed.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-00-860-190

(1) Move the thrust levers no.1 and 2 to the IDLE position.

SUBTASK 31-51-00-860-187

(2) Close this access panel:

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-51-00-440-002

WARNING DO NOT OPERATE THE WEATHER RADAR WHEN PERSONNEL ARE IN THE AREA USUALLY ENCLOSED BY THE AIRCRAFT NOSE RADOME OR IN A HANGAR. THESE CONDITIONS CAN CAUSE INJURY TO PERSONNEL.

(3) Return the weather radar to its original condition.

NOTE: The hangar restriction DOES NOT apply to the weather radar test mode.

(a) 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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLAP LANDING WARNING SWITCH - REMOVAL/INSTALLATION

1. **General**
   A. This procedure has these tasks:
      (1) A removal of the flap landing warning switch
      (2) An installation of the flap landing warning switch
      (3) An adjustment of the flap landing warning switch.
   B. The flap landing warning switch, S138, is on the flap control unit in the right main landing gear wheel well.
      (1) Use the table below to replace the flap landing warning switch, S138.

Table 401/31-51-01-993-801 Flap Landing Warning Switch, S138

WIRE CONTACT NO.	WIRE IDENTIFICATION	DESTINATION	WDM REF	PURPOSE	POST INSTALLATION TEST
1	W8124-A-AA	GD332-DC	32-64-21	Landing Flaps A	AMM 31-51-01
2	A-BB	CAPPED AND STOWED	32-64-21	N/A	
3	A-CC	D46040P/8	32-64-21	Landing Flaps A	AMM 31-51-01
4	A-DD	CAPPED AND STOWED	32-64-21	N/A	
5	A-EE	CAPPED AND STOWED	32-64-21	N/A	
6	A-FF	CAPPED AND STOWED	32-64-21	N/A	
7	A-GG	D46040P/19	29-25-11	S1051/18	AMM 31-51-01
8	A-HH	D46040P/9	29-25-11		AMM 31-51-01
9	A-JJ	D46040P/6	29-25-11	PTU Control Valve	AMM 31-51-01
10	A-KK	CAPPED AND STOWED	32-64-21	N/A	
11	A-LL	CAPPED AND STOWED	32-64-21	N/A	
12	A-MM	CAPPED AND STOWED	32-64-21	N/A	
13	A-NN	CAPPED AND STOWED	32-64-21	N/A	
14	A-PP	CAPPED AND STOWED	32-64-21	N/A	
15	A-RR	CAPPED AND STOWED	32-64-21	N/A	
16	A-SS	GD332-DC	32-64-21	Landing Flaps B	AMM 31-51-01
17	A-TT	CAPPED AND STOWED	32-64-21	N/A	

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 401/31-51-01-993-801 Flap Landing Warning Switch, S138 (Continued)

18	A-UU	D46040P/10	32-64-21	Landing Flaps B	AMM 31-51-01

TASK 31-51-01-000-801

2. Flap Landing Warning Switch Removal

(Figure 401)

A. References

Reference	Title
27-51-00-040-801	Trailing Edge Flap System Deactivation (P/B 201)
27-51-00-860-804	Retract the Trailing Edge Flaps (P/B 201)
32-00-01-480-801	Landing Gear Downlock Pins 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-4962	Wrench - Limit Switch, Flap Control Unit Part #: F80197-5 Supplier: 81205

C. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Prepare for the Removal

SUBTASK 31-51-01-860-001

(1) If the trailing edge flaps are not in the retracted position, do this task: Retract the Trailing Edge Flaps, TASK 27-51-00-860-804.

SUBTASK 31-51-01-040-001

(2) Do this task: Trailing Edge Flap System Deactivation, TASK 27-51-00-040-801.

SUBTASK 31-51-01-480-001

WARNING

MAKE SURE THAT YOU INSTALL THE DOWNLOCK PINS ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(3) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

E. Removal Procedure

SUBTASK 31-51-01-860-002

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 PRE SB 737-27-1290 AND PRE SB 737-27-1304

SUBTASK 31-51-01-010-001

(2) Remove the screws [6] that attach the switch cover [7].

LOM 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 POST SB 737-27-1290 OR POST SB 737-27-1304

SUBTASK 31-51-01-020-003

(3) Remove the screws [6] and washers [18] that attach the switch cover [7].

LOM ALL

SUBTASK 31-51-01-010-002

(4) Remove the switch cover [7] from the flap control unit [1].

LOM 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 POST SB 737-27-1290 OR POST SB 737-27-1304

SUBTASK 31-51-01-020-004

(5) Disconnect the electrical connectors from the applicable limit switch.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 PRE SB 737-27-1290 AND PRE SB 737-27-1304

SUBTASK 31-51-01-020-001

(6) Disconnect the electrical wires for the flap landing warning switch [8]:

(a) Disconnect the connector [5] for the wire bundle [4].

(b) Remove the screws [3] and the clamps [2] for the wire bundle [4].

(c) Cut the wire bundle ties and isolate the switch wires from the remaining wires in the wire bundle [4].

(d) Disconnect the switch leads from the connector [5].

LOM ALL

SUBTASK 31-51-01-020-002

(7) To remove the flap landing warning switch [8], use tool set FCU limit switch wrench, SPL-4962:

(a) Remove the lockwire from the nut [12] and nut [15].

(b) Remove the roller guide lock ring [11] from the roller guide [10].

(c) Remove the roller guide [10] from the switch [8].

(d) Remove the nut [12] and washer [13] from the flap landing warning switch [8].

(e) Remove the switch [8] with the nut [15] and washer [14] from the flap control unit [1].

(f) Put the nut [12], washer [13], roller guide [10], and roller guide lock ring [11] on the switch [8] to keep the parts together.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G51523 S0006574549_V2

Flap Landing Warning Switch Installation
Figure 401/31-51-01-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Flap Landing Warning Switch Installation
Figure 401/31-51-01-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLAP LANDING WARNING SWITCH

C

G51526 S0006574551_V2

Flap Landing Warning Switch Installation
Figure 401/31-51-01-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLAP LANDING WARNING SWITCH, S138

D

DIMENSION X ADJUSTMENT

E

G51528 S0006574552_V3

Flap Landing Warning Switch Installation
Figure 401/31-51-01-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Flap Landing Warning Switch Installation
Figure 401/31-51-01-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLAP LANDING WARNING SWITCH

C

2043577 S0000413385_V2

Flap Landing Warning Switch Installation
Figure 401/31-51-01-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-01-400-801

3. **Flap Landing Warning Switch Installation**

(Figure 401)

A. **References**

Reference	Title
27-51-00-440-801	Trailing Edge Flap System Reactivation (P/B 201)
32-00-01-080-801	Landing Gear Downlock Pins Removal (P/B 201)

B. **Tools/Equipment**

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

Reference	Description
COM-1550	Bonding Meter - 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 #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: M1B Supplier: 3AD17 Part #: T477W (C15292) Supplier: 06659
SPL-4962	Wrench - Limit Switch, Flap Control Unit Part #: F80197-5 Supplier: 81205

C. **Consumable Materials**

Reference	Description	Specification
A02315	Sealant - Low Density, Synthetic Rubber. 2 Part	BMS5-142 Type II
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38
G50237	Compound - Corrosion Inhibiting, Non-drying - Cor-Ban 27L	BMS3-38

D. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
8	Switch	31-51-01-01B-010	LOM 422-434, 437-447, 450-999

E. **Location Zones**

Zone	Area
112	Area Forward of Nose Landing Gear Wheel Well
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right
741	Right Main Landing Gear - Outboard Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Installation Procedure

SUBTASK 31-51-01-860-003

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-01-420-001

(2) To install the flap landing warning switch [8], use tool set FCU limit switch wrench, SPL-4962:

(a) Remove the roller guide lock ring [11], roller guide [10], nut [12], and washer [13] from the switch [8].

(b) Put the nut [15] on the switch [8] with approximately 3 threads showing.

(c) Put the washer [14] on the switch [8] and put the switch into position on the flap control unit [1].

(d) Install the washer [13] and the nut [12] to the flap landing warning switch [8].

(e) Put the roller guide [10] into position on the switch [8].

(f) Install the roller guide lock ring [11] to hold the roller guide [10].

SUBTASK 31-51-01-760-001

(3) With the electrical bonding intrinsically safe approved bonding meter, COM-1550, make sure the resistance between the switch [8] and the flap control unit [1] is less than 0.0025 ohms.

LOM 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 POST SB 737-27-1290 OR POST SB 737-27-1304

SUBTASK 31-51-01-420-008

(4) Attach the electrical wires for the limit switch.

(a) Connect the connector [5] to the switch at the flap control unit [1].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 PRE SB 737-27-1290 AND PRE SB 737-27-1304

SUBTASK 31-51-01-420-002

(5) Connect the electrical wires for the flap landing warning switch [8]:

(a) Connect the switch leads to the connector [5].

(b) Connect the connector [5] for the wire bundle [4].

(c) Install new wire bundle ties on the wire bundle [4].

(d) Put the clamps [2] into position on the wire bundle [4].

(e) Install the screws [3] to attach the clamps [2].

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-01-860-004

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

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	7	C00210	FLIGHT CONTROL FLAP SHUTOFF VALVES

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-01-820-001

(7) Do this task: Flap Landing Warning Switch Adjustment and Test, TASK 31-51-01-820-801.

SUBTASK 31-51-01-390-001

(8) Apply fillet seal with sealant, A02315.

SUBTASK 31-51-01-410-001

(9) Install the switch cover [7] on the flap control unit [1]:

(a) Put the switch cover [7] into position on the flap control unit [1].

WARNING

USE NITRILE GLOVES FOR SKIN PROTECTION WHEN YOU USE COR-BAN 27L, G50237. IF IT GETS ON YOUR SKIN, IMMEDIATELY REMOVE IT WITH WATER. IF THIS MATERIAL GETS IN YOUR EYES, IMMEDIATELY FLUSH YOUR EYES WITH WATER. GET MEDICAL AID. THIS MATERIAL CONTAINS FLAMMABLE AGENTS WHICH CAN CAUSE INJURIES TO PERSONNEL.

(b) Apply Cor-Ban 27L Compound, G50237 (preferred) or corrosion inhibiting material, G50136 (alternate) to the shank and threads of the screws [6].

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 PRE SB 737-27-1290 AND PRE SB 737-27-1304

(c) Install the screws [6] that attach the switch cover [7].

LOM 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 POST SB 737-27-1290 OR POST SB 737-27-1304

(d) Install the screws [6] and washer [18] that attach the switch cover [7].

LOM ALL

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-01-440-001

(1) Do this task: Trailing Edge Flap System Reactivation, TASK 27-51-00-440-801.

SUBTASK 31-51-01-080-001

(2) If the downlock pins are no longer necessary, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-01-820-801

4. Flap Landing Warning Switch Adjustment and Test

(Figure 401, Figure 402)

A. References

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
29-22-00-710-801	Power Transfer Unit Operational Test (P/B 501)
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)

B. Consumable Materials

Reference	Description	Specification
G01048	Lockwire - MS20995C32, Corrosion Resistant Steel - 0.032 Inch (0.8128 mm) Diameter	NASM20995

C. Location Zones

Zone	Area
134	Main Landing Gear Wheel Well, Body Station 663.75 to Body Station 727.00 - Right

D. Adjustment Procedure

SUBTASK 31-51-01-860-005

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(1) Pressurize the hydraulic system for system B to 3000 psi (TASK 29-11-00-860-801).

SUBTASK 31-51-01-220-002

(2) Move the flap control lever to the 15 unit position.

SUBTASK 31-51-01-220-003

(3) Depressurize the hydraulic system for the system B (TASK 29-11-00-860-805).

SUBTASK 31-51-01-220-004

(4) Position the flaps electrically until dimension X is 8.09 ± 0.03 inches.

NOTE: The dimension X of 8.09 ± 0.03 inches corresponds to a flap position that is between 10 and 15 units.

SUBTASK 31-51-01-820-002

(5) Adjust the flap landing warning switch [8]:

(a) Turn the inner nut [12] to temporarily adjust the switch [8] in the direction of the cam [9] until you hear a click.

(b) Turn the inner nut to move the switch away from the cam [9] until you hear a click.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 PRE SB 737-27-1290 AND PRE SB 737-27-1304

NOTE: There will be continuity between pins 1 and 2 on the limit switch. There will be continuity between pins 16 and 17 on the limit switch.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 422-434, 437-447, 450-999; LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 POST SB 737-27-1290 OR POST SB 737-27-1304

NOTE: There will be continuity between pins A and B on the limit switch. There will be continuity between pins S and T on the limit switch.

LOM ALL

(c) Tighten the nuts [15] on switch [8].

(d) Install MS20995C32 lockwire, G01048 on the nuts [12] and [15] (TASK 20-10-44-400-801).

(e) Do a check of the switch continuity or push on the switch roller and listen for the switch [8] until you hear a click.

SUBTASK 31-51-01-410-002

(6) Put the switch cover [7] on the flap control unit [1].

E. Prepare for the Installation Test

SUBTASK 31-51-01-860-026

(1) Make sure the engines are shutdown.

SUBTASK 31-51-01-860-024

WARNING

KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(2) Pressurize the hydraulic system for system B to 3000 psi (TASK 29-11-00-860-801).

SUBTASK 31-51-01-860-027

(3) Move the flap control lever to the 0 unit position.

SUBTASK 31-51-01-480-006

WARNING

MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) If the downlock pins are not installed on all the landing gear, do this task: Landing Gear Downlock Pins Installation, TASK 32-00-01-480-801.

F. Installation Test

SUBTASK 31-51-01-720-001

(1) Do the interface test between the S138 switch and the PSEU below:

(a) Make sure the PSEU BITE display is off.

(b) Press the ON/OFF button.

(c) The display will show EXISTING FAULTS?

(d) Press the NO button.

(e) The display will show FAULT HISTORY?

(f) Press the NO button.

(g) The display will show GROUND TESTS?

(h) Press the NO button.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(i) The display will show AIR/GND OVRD?

(j) Press the NO button.

(k) The display will show OTHER FUNCTNS?

(l) Press the YES button.

(m) The display will show T/O WARN REPORT?

(n) Press the NO button.

(o) The display will show LGTV REPORT?

(p) Press the NO button.

(q) The display will show SENSOR RIGGING?

(r) Press the NO button.

(s) The display will show I/O MONITOR?

(t) Press the YES button.

(u) The display will show SENSORS?

(v) Press the DOWN ARROW button.

(w) The display will show INPUTS?

(x) Press the YES button.

(y) The display will show CONN D10982?

(z) Press the NO button.

(aa) The display will show CONN D10984?

(ab) Press the YES button.

(ac) Move the Flaps lever to Full "UP".

(ad) Using the UP and/or DOWN ARROW find PIN 48.

1) Make sure that the PSEU BITE display shows PIN 48 as NO GND.

(ae) Use DOWN ARROW to find PIN 49.

1) Make sure that the PSEU BITE display shows PIN 49 as NO GND.

(af) Move the Flaps lever to "15".

1) Make sure that the PSEU BITE display shows PIN 49 as GND.

(ag) Use the DOWN ARROW to find PIN 48.

1) Make sure that the PSEU BITE display shows PIN 48 as GND.

SUBTASK 31-51-01-710-001

(2) Do this task: Power Transfer Unit Operational Test, TASK 29-22-00-710-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-01-860-031

(1) Do these steps to return the PSEU to normal:

(a) Press the ON/OFF button.

(b) The display will show TURN OFF DISPLAY?

(c) Press the YES button.

1) Make sure that the display turns off.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-01-860-030

(2) Do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-51-01-080-004

(3) If the downlock pins are no longer necessary, do this task: Landing Gear Downlock Pins Removal, TASK 32-00-01-080-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Main Landing Gear Down-and-Locked Sensor Location
Figure 402/31-51-01-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STABILIZER TAKEOFF WARNING SWITCHES - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

(1) A removal of the two stabilizer takeoff warning switches

LOM 422-434, 437-447, 450-999

(2) A removal of the four stabilizer takeoff warning switches

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

(3) An installation of the two stabilizer takeoff warning switches.

LOM 422-434, 437-447, 450-999

(4) An installation of the four stabilizer takeoff warning switches.

LOM ALL

B. Each switch is operated by an upper and a lower limit switch cam.

TASK 31-51-02-000-801

2. Stabilizer Takeoff Warning Switch Removal

(Figure 401)

A. References

Reference	Title
20-10-44-000-801	Lockwire, Cotter Pins, and Lockrings - Removal (P/B 401)

B. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
313	Stabilizer Torsion Box Compartment - Left
314	Stabilizer Torsion Box Compartment - Right

C. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

D. Prepare for the Removal

SUBTASK 31-51-02-860-016

(1) Set the stabilizer trim cutout switches to the CUTOUT position.

E. Removal Procedure

SUBTASK 31-51-02-860-001

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-02-010-001

(2) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 31-51-02-010-002

WARNING

YOU MUST PREVENT ALL POSSIBLE OPERATION OF THE HORIZONTAL STABILIZER WHEN YOU WORK ON OR NEAR IT. THE HORIZONTAL STABILIZER MOVES QUICKLY AND WITH FORCE. IF THE STABILIZER MOVES WHEN PERSONS ARE IN THE TORSION BOX COMPARTMENT OR NEAR THE STABILIZER, YOU CAN CAUSE INJURY TO THEM.

(3) Find the applicable stabilizer takeoff warning switch [1].

SUBTASK 31-51-02-020-001

(4) Remove the switch [1]:

(a) Disconnect and label the wires for the switch [1].

(b) Loosen the jam nut [3] and remove the locknut [5] and washer [4] which attach the switch arm [6] to the switch [1].

(c) Remove the switch arm [6] from the shaft of the switch [1].

(d) Remove the lockwire from the retainer nut [9] (TASK 20-10-44-000-801).

(e) Remove the lockwasher [8] and retainer nut [9] which attach the switch [1] to the bracket assembly [2].

(f) Remove the switch [1] from the bracket assembly [2].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

VIEW WHEN YOU LOOK UP THROUGH THE STABILIZER TRIM ACCESS DOOR

A

G49552 S0006574559_V2

Stabilizer Takeoff Warning Switches Installation
Figure 401/31-51-02-990-801 (Sheet 1 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STABILIZER TAKEOFF WARNING SWITCHES

B

G49558 S0006574560_V3

Stabilizer Takeoff Warning Switches Installation
Figure 401/31-51-02-990-801 (Sheet 2 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STABILIZER TAKEOFF WARNING SWITCHES

B

1906498 S0000351452_V3

Stabilizer Takeoff Warning Switches Installation
Figure 401/31-51-02-990-801 (Sheet 3 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STABILIZER TAKEOFF WARNING SWITCHES (EXAMPLE)

C

TAKEOFF WARNING SWITCH (EXAMPLE)

D

G49556 S0006574561_V3

Stabilizer Takeoff Warning Switches Installation
Figure 401/31-51-02-990-801 (Sheet 4 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

VIEW WHEN YOU LOOK UP THROUGH THE STABILIZER TRIM ACCESS DOOR AT THE STABILIZER TRIM JACKSCREW

E

G49559 S0006574562_V3

Stabilizer Takeoff Warning Switches Installation
Figure 401/31-51-02-990-801 (Sheet 5 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

NOTE:

THE STABILIZER TRIM JACKSCREW IS SHOWN WITH THE STABILIZER LEADING EDGE AT ZERO DEGREES.

1 THE DIMENSION "B" IS MEASURED BETWEEN THE CENTER OF THE UPPER AND LOWER GIMBAL PINS (CENTER OF GREASE FITTING)

G49561 S0006574563_V4

Stabilizer Takeoff Warning Switches Installation
Figure 401/31-51-02-990-801 (Sheet 6 of 6)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-02-400-801

3. Stabilizer Takeoff Warning Switch Installation

(Figure 401)

A. References

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)
31-51-02-700-801	Stabilizer Takeoff Warning Switches Test (P/B 501)
31-51-02-820-801	Stabilizer Takeoff Warning Switches Adjustment (P/B 501)
WDM 31-53-11	Wiring Diagram Manual

B. Consumable Materials

Reference	Description	Specification
C50056	Compound - Corrosion Inhibiting Material, Nondrying Resin Mix	BMS3-27
G01912	Lockwire - MS20995NC32, Monel - 0.032 Inch (0.8128 mm) Diameter	NASM20995
G50136	Compound - Corrosion Inhibiting, Non-drying Paste	BMS3-38

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Switch	27-41-94-02-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		27-41-94-04-010	LOM 422-434, 437-447, 450-999
		31-51-02-01-005	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		31-51-02-01-010	LOM 406
		31-51-02-01-015	LOM 406
		31-51-02-01-020	LOM 406
		31-51-02-02-010	LOM 422-434, 437-447, 450-999
		31-51-02-02-015	LOM 422-434, 437-447, 450-999

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
313	Stabilizer Torsion Box Compartment - Left
314	Stabilizer Torsion Box Compartment - Right

E. Access Panels

Number	Name/Location
311BL	Stabilizer Trim Access Door

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F. Stabilizer Takeoff Warning Switch Installation

SUBTASK 31-51-02-860-002

(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	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-02-420-001

(2) Install the switch [1]:

(a) Apply corrosion inhibiting material, G50136 (preferred) or Mastinox 6856 K, C50056 (acceptable alternate) to the switch [1] shaft that interfaces to the bracket assembly [2].

(b) Put the shaft of the switch [1] through the bracket assembly [2].

(c) Install the retainer nut [9] and lockwasher [8] to attach the switch [1] to the bracket assembly [2].

(d) Install a MS20995NC32 lockwire, G01912, to attach the retainer nut [9] to the bracket assembly [2] (TASK 20-10-44-400-801).

(e) Install the switch arm [6] on the shaft of the switch [1].

(f) Turn the switch arm [6] to the approximate position for installation.

(g) Put the switch arm [6] on the switch [1] to engage the serrations.

(h) Install the washer [4] and locknut [5] to attach the switch arm [6] to the switch [1].

(i) Connect the wires to the switch [1] (WDM 31-53-11).

1) Make sure that the wires go through the wire bundle clamps.

(j) Do this task: Stabilizer Takeoff Warning Switches Adjustment, TASK 31-51-02-820-801.

(k) Do this task: Stabilizer Takeoff Warning Switches Test, TASK 31-51-02-700-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-02-860-015

(1) Set the stabilizer trim cutout switches to the NORMAL position.

SUBTASK 31-51-02-410-001

(2) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

——— END OF TASK ———

ECCN 9E991 BOEING PROPRIETARY - See title page for details

STABILIZER TAKEOFF WARNING SWITCHES - ADJUSTMENT/TEST

1. General

A. This procedure has these tasks:

(1) An adjustment of the stabilizer takeoff warning switches

(2) A test of the stabilizer takeoff warning switches

B. The stabilizer takeoff warning switch is referred to as the limit switch in this procedure.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

C. There are two stabilizer takeoff warning switches (S132 and S546) on the bracket assemblies [5] along the stabilizer jackscrew.

LOM 422-434, 437-447, 450-999

D. There are four stabilizer takeoff warning switches (S132, S1184, S546, and S1183) on the bracket assemblies [5] along the stabilizer jackscrew.

LOM ALL

TASK 31-51-02-820-801

2. Stabilizer Takeoff Warning Switches Adjustment

(Figure 501)

A. References

Reference	Title
20-10-44-400-801	Lockwire, Cotter Pins, and Lockrings - Installation (P/B 401)

B. Tools/Equipment

Reference	Description
STD-1107	Gauge - Feeler, 0.0 - 0.5 Inch, Readable to 1/1000th
STD-1330	Wrench - Hexdrive, Allen Wrench
STD-13571	Screwdriver - Flat Tip

C. Consumable Materials

Reference	Description	Specification
G02166	Lockwire - MS20995NC20, Monel - 0.020 Inch (0.508 mm) Diameter	NASM20995

D. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
313	Stabilizer Torsion Box Compartment - Left
314	Stabilizer Torsion Box Compartment - Right

E. Stabilizer Takeoff Warning Switches Adjustment

(Figure 501)

SUBTASK 31-51-02-820-002

(1) Adjust the switch [1]:

(a) Loosen the locking nut [2] and the non-removable lock screw [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Do not remove the locking nut [2] or non-removable lock screws [3].

NOTE: The adjustment gear must be adjusted when the switch is not loaded by the actuating cam.

(b) Hand-adjust the stabilizer jackscrew to the necessary position so that the switch is not loaded.

NOTE: Clockwise movement of the jackscrew crank results in a decrease in the “B” dimension.

(c) Adjust the switch roller arm position on the switch spline shaft to the approximate switch actuation position.

(d) Hand-tighten the locking nut [2] and non-removable lock screws [3].

(e) Rotate the stabilizer jackscrew until the switch actuates.

NOTE: The audible “click” at the point of actuation is very subtle. The switch actuating can be sensed by placing your fingers on the switch housing while adjusting to feel the switch actuate.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

(f) Make sure the “B” dimension is in the correct range for the upper (S546) and lower (S132) switches [1] (Table 501 or Table 502).

Table 501/31-51-02-993-814

S546 STAB LIMIT SWITCH			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B DIMENSION	TRIM UNITS	B DIMENSION
1.80	43.01 ±0.03 in. (109.25 ±0.08 cm)	2.40	42.16 ±0.03 in. (107.09 ±0.08 cm)

Table 502/31-51-02-993-815

S132 STAB LIMIT SWITCH			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B-DIMENSION	TRIM UNITS	B-DIMENSION
8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)	8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)

1) If the “B” dimension is not within the correct tolerance at the actuation point, back the cam off by adjusting the stabilizer jackscrew until the switch is unloaded, loosen the locking nut [2] and non-removable lock screws [3], and repeat the roller arm adjustment until the correct “B” dimension is obtained.

LOM 422-434, 437-447, 450-999

(g) Make sure the “B” dimension is in the correct range for the upper (S546 and S1183) and lower (S132 and S1184) switches [1] (Table 503 or Table 504).

Table 503/31-51-02-993-816

S546 and S1183 STAB LIMIT SWITCHES			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B DIMENSION	TRIM UNITS	B DIMENSION

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 422-434, 437-447, 450-999 (Continued)

Table 503/31-51-02-993-816 (Continued)

S546 and S1183 STAB LIMIT SWITCHES			
1.80	43.01 ±0.03 in. (109.25 ±0.08 cm)*[1]	2.40	42.16 ±0.03 in. (107.09 ±0.08 cm)*[1]

*[1] Switches S546 and S1183 must be rigged simultaneously and switch within 0.015 in. (0.038 cm) maximum of each other. If one of the pair switches needs to be removed or replaced, both switches need to be re-rigged.

Table 504/31-51-02-993-817

S132 and S1184 STAB LIMIT SWITCHES			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B-DIMENSION	TRIM UNITS	B-DIMENSION
8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)*[1]	8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)*[1]

*[1] Switches S132 and S1184 must be rigged simultaneously and switch within 0.015 in. (0.038 cm) maximum of each other. If one of the pair switches needs to be removed or replaced, both switches need to be re-rigged.

1) If the “B” dimension is not within the correct tolerance at the actuation point, back the cam off by adjusting the stabilizer jackscrew until the switch is unloaded, loosen the locking nut [2] and non-removable lock screws [3], and repeat the roller arm adjustment until the correct “B” dimension is obtained.

LOM ALL

(h) Tighten the two non-removable lock screws [3] on the lever.

(i) Tighten the locking nut [2] to 22.5 ±2.5 in-lb (2.5 ±0.3 N·m).

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

(j) Use a hexdrive allen wrench, STD-1330, to turn the worm gear [4] with no more than 6 in-lb (1 N·m) until within the “B” dimension tolerances per Table 501 or Table 502.

NOTE: Clockwise movement of the worm gear results in a decrease of the “B” dimension for the adjusted switch.

LOM 422-434, 437-447, 450-999

(k) Use a hexdrive allen wrench, STD-1330, or a Flat Tip Screwdriver, STD-13571, to turn the worm gear [4] with no more than 6 in-lb (1 N·m) until within the “B” dimension tolerances per Table 503 or Table 504.

NOTE: Clockwise movement of the worm gear results in a decrease of the “B” dimension for the adjusted switch.

LOM ALL

(l) Install a MS20995NC20 lockwire, G02166, between the two non-removable lock screws [3] (TASK 20-10-44-400-801).

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

(m) With the stabilizer leading edge in the full down position (airplane nose up), make sure the nose up switch S132 can be rotated away from the cam surface by a minimum of 0.05 in. (1.27 mm). Use a 0.0 - 0.5 Inch feeler gauge, STD-1107.

(n) With the stabilizer leading edge in the full up position (airplane nose down), make sure the nose down switch S546 can be rotated away from the cam surface by a minimum of 0.05 in. (1.27 mm). Use a 0.0 - 0.5 Inch feeler gauge, STD-1107.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 422-434, 437-447, 450-999

(o) With the stabilizer leading edge in the full down position (airplane nose up), make sure the nose up switch S132 and S1184 can be rotated away from the cam surface by a minimum of 0.05 in. (1.27 mm). Use a 0.0 - 0.5 Inch feeler gauge, STD-1107.

(p) With the stabilizer leading edge in the full up position (airplane nose down), make sure the nose down switch S546 and S1183 can be rotated away from the cam surface by a minimum of 0.05 in. (1.27 mm). Use a 0.0 - 0.5 Inch feeler gauge, STD-1107.

LOM ALL

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1372106 S0000241155_V4

Stabilizer Takeoff Warning Switches Adjustment
Figure 501/31-51-02-990-802 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1906499 S0000351453_V4

Stabilizer Takeoff Warning Switches Adjustment
Figure 501/31-51-02-990-802 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1372252 S0000241156_V4

Stabilizer Takeoff Warning Switches Adjustment
Figure 501/31-51-02-990-802 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-02-700-801

3. Stabilizer Takeoff Warning Switches Test

(Figure 501)

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)
10-11-01 P/B 201	NORMAL PARKING - MAINTENANCE PRACTICES
10-11-05 P/B 201	CHOCK INSTALLATION
29-11-00 P/B 201	HYDRAULIC SYSTEMS A AND B - MAINTENANCE PRACTICES
31-51-02 P/B 401	STABILIZER TAKEOFF WARNING SWITCHES - REMOVAL/INSTALLATION
32-09-00 P/B 201	AIR/GROUND SYSTEM - MAINTENANCE PRACTICES

B. Tools/Equipment

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

Reference	Description
COM-1505	Chocks - Wheel Part #: 19CAL455 - Type 1 Supplier: $1329 Part #: 99-9028-6000 Supplier: 59603 Part #: AC6820-LR Supplier: 032T9 Part #: ALPHACHOCKS MAX Supplier: 6X2T3 Part #: W86 Supplier: 3XZM7 Part #: W88-RH Supplier: 3XZM7 Opt Part #: W88 Supplier: 3XZM7 Opt Part #: W92 Supplier: 9L752
SPL-1677	Trammel Bar Assembly - Stabilizer Trim Actuator Part #: F80055-36 Supplier: 81205 Opt Part #: F80055-1 Supplier: 81205

C. Location Zones

Zone	Area
211	Flight Compartment - Left
212	Flight Compartment - Right
313	Stabilizer Torsion Box Compartment - Left
314	Stabilizer Torsion Box Compartment - Right

D. Access Panels

Number	Name/Location
112A	Forward Access Door
311BL	Stabilizer Trim Access Door

E. Stabilizer Takeoff Warning Switch Test

SUBTASK 31-51-02-840-001

(1) Make sure that the wheel chock, COM-1505, are installed (PAGEBLOCK 10-11-05/201).

NOTE: This procedure requires release of the parking brake. Parking brake release prevents the horn activation from the takeoff warning system.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-02-010-003

(2) Get access to the Proximity Sensor Electronics Unit (PSEU), M02061, in the E/E bay.

(a) Open this access panel:

(TASK 06-41-00-800-801)

Number	Name/Location
112A	Forward Access Door

SUBTASK 31-51-02-860-021

(3) Using the PSEU, make sure that SYS-1 and SYS-2 are set to ground mode (PAGEBLOCK 32-09-00/201).

SUBTASK 31-51-02-860-019

WARNING MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKERS FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(4) 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 31-51-02-010-004

(5) Open this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 31-51-02-860-023

WARNING KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(6) Pressurize hydraulic systems A and B (PAGEBLOCK 29-11-00/201).

SUBTASK 31-51-02-860-011

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 31-51-02-860-022

(8) Set the airplane to the take-off configuration:

NOTE: The take-off warning horn will sound when the airplane is not in a takeoff configuration and you move the thrust levers forward for take-off.

(a) Move the trailing edge flaps to the 15-unit position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 (Continued)

(b) Set the stabilizer within 1-unit center of the green band.

(c) Set the speed brake lever to the DOWN position.

(d) Release the parking brakes.

WARNING	MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKERS FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(e) Set the thrust lever No. 2 to the idle position.

(f) Set the thrust lever No. 1 to the full-forward thrust position.

(g) Make sure that the warning horn does not sound.

NOTE: The take-off warning horn will sound when the airplane is on the ground, and you move one or both of the thrust levers forward for take-off, and at least one of these conditions exist: the stabilizer is not in the green band, the trailing edge flaps are at less than 1-unit or more than 25-units, the leading edge slats are not extended or in transit, the speedbrake handle is not down, the parking brake is set, the ground spoilers are not down.

NOTE: The take-off warning horn will also sound when the airplane is in the air and all of the following conditions exist: the ground spoiler valve is not closed, the leading edge flaps are not extended, and the landing warning cutoff switch is closed.

LOM 422-434, 437-447, 450-999

SUBTASK 31-51-02-860-012

(9) Make sure that the speed brakes are down.

SUBTASK 31-51-02-860-013

(10) Make sure that the flaps are in the takeoff range of 1 to 15 units.

SUBTASK 31-51-02-860-024

(11) Release the parking brakes.

SUBTASK 31-51-02-860-014

(12) Move one of the thrust levers full forward.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 31-51-02-710-002

(13) Using the stabilizer trim wheel, or the STAB TRIM switches on the captain's control wheel, do the steps that follow for the upper switch [1], S00546:

(a) Move the stabilizer leading edge up (or, airplane nose down) to outside of the green band.

1) Make sure that the warning horn comes on when the green band pointer is outside of the green band range.

2) If the horn does not come on, then the upper switch [1], S00546, is unserviceable.

a) Remove the upper switch [1], S00546, and install a serviceable switch (PAGEBLOCK 31-51-02/401).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 (Continued)

SUBTASK 31-51-02-220-003

(14) Do this test for the upper switch [1], S00546:

(a) Use the trammel bar, SPL-1677, to make sure that dimension “B” is in the correct range for the upper switch [1] (Table 505).

Table 505/31-51-02-993-810

S546 STAB LIMIT SWITCH			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B DIMENSION	TRIM UNITS	B DIMENSION
1.80	43.01 ±0.03 in. (109.25 ±0.08 cm)	2.40	42.16 ±0.03 in. (107.09 ±0.08 cm)

LOM 422-434, 437-447, 450-999

SUBTASK 31-51-02-860-017

(15) Do this test for the upper switches [1], S00546 and S01183:

(a) Move the stabilizer in the leading edge up direction (airplane nose down) until you hear the warning horn.

(b) Use the trammel bar, SPL-1677, to make sure that dimension “B” is in the correct range for the upper switch [1] (Table 506).

Table 506/31-51-02-993-812

S546 and S1183 STAB LIMIT SWITCHES			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B DIMENSION	TRIM UNITS	B DIMENSION
1.80	43.01 ±0.03 in. (109.25 ±0.08 cm)*[1]	2.40	42.16 ±0.03 in. (107.09 ±0.08 cm)*[1]

*[1] Switches S546 and S1183 must be rigged simultaneously and switch within 0.015 in. (0.038 cm) maximum of each other. If one of the pair switches needs to be removed or replaced, both switches need to be re-rigged.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420

SUBTASK 31-51-02-710-001

(16) Using the stabilizer trim wheel, or the STAB TRIM switches on the captain's control wheel, do the steps that follow for the lower switch [1], S00132:

(a) Move the stabilizer leading edge down (or, airplane nose up) to outside of the green band.

1) Make sure that the warning horn comes on when the green band pointer is outside of the green band range.

2) If the horn does not come on, then the lower switch [1], S00132, is unserviceable.

a) Remove the lower switch [1], S00132, and install a serviceable switch (PAGEBLOCK 31-51-02/401).

SUBTASK 31-51-02-220-004

(17) Do this test for the lower switch [1], S00132:

(a) Move the stabilizer in the leading edge down direction (airplane nose up) until you hear the warning horn.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420 (Continued)

(b) Use the trammel bar, SPL-1677, to make sure that dimension "B" is in the correct range for the lower switch [1] (Table 507).

Table 507/31-51-02-993-813

S132 STAB LIMIT SWITCH			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B-DIMENSION	TRIM UNITS	B-DIMENSION
8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)	8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)

LOM 422-434, 437-447, 450-999

SUBTASK 31-51-02-860-018

(18) Do this test for the lower switches [1], S00132 and S01184:

(a) Move the stabilizer in the leading edge down direction (airplane nose up) until you hear the warning horn.

(b) Use the trammel bar, SPL-1677, to make sure that dimension "B" is in the correct range for the lower switch [1] (Table 508).

Table 508/31-51-02-993-811

S132 and S1184 STAB LIMIT SWITCHES			
NON-WINGLETS & Non-Short Field Option		WINGLETS and/or Short Field Option	
TRIM UNITS	B-DIMENSION	TRIM UNITS	B-DIMENSION
8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)*[1]	8.75	33.10 ±0.03 in. (84.07 ±0.08 cm)*[1]

*[1] Switches S132 and S1184 must be rigged simultaneously and switch within 0.015 in. (0.038 cm) maximum of each other. If one of the pair switches needs to be removed or replaced, both switches need to be re-rigged.

LOM ALL

F. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-02-860-025

(1) Set the thrust lever to the idle position.

SUBTASK 31-51-02-440-001

(2) Activate the parking brake (PAGEBLOCK 10-11-01/201).

SUBTASK 31-51-02-040-001

(3) Remove hydraulic pressure from system A and system B (PAGEBLOCK 29-11-00/201).

SUBTASK 31-51-02-410-003

(4) Close this access panel:

Number	Name/Location
311BL	Stabilizer Trim Access Door

SUBTASK 31-51-02-860-020

(5) 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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-02-410-002

(6) Close this access panel:

Number	Name/Location
112A	Forward Access Door

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SPEEDBRAKE TAKEOFF WARNING SWITCH - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the speedbrake takeoff warning switch

(2) An installation of the speedbrake takeoff warning switch.

B. The speedbrake takeoff warning switch is referred to as switch in this procedure.

C. The switch is installed in the top left forward position of the control stand. The switch is operated by an actuator on the speed brake lever.

TASK 31-51-03-000-801

2. Speedbrake Takeoff Warning Switch - Removal

(Figure 401)

A. References

Reference	Title
27-41-61-010-801	Stabilizer Trim Control Wheel Removal (P/B 401)
32-09-00-840-801	Prepare to Put the Airplane in the Air Mode (P/B 201)

B. Location Zones

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

C. Speedbrake Takeoff Warning Switch Removal

SUBTASK 31-51-03-840-001

> **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.

(1) Do this task: Prepare to Put the Airplane in the Air Mode, TASK 32-09-00-840-801.

SUBTASK 31-51-03-860-001

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

SUBTASK 31-51-03-860-002

(3) Make sure that the speedbrake lever is in the DOWN position.

SUBTASK 31-51-03-020-002

(4) Do this task: Stabilizer Trim Control Wheel Removal, TASK 27-41-61-010-801.

SUBTASK 31-51-03-010-001

(5) Remove the screws [2] that attach the switch cover [1] to the control stand.

SUBTASK 31-51-03-020-001

(6) Do these steps to remove the switch [6]:

(a) Remove the self-locking nut [8] and washer [7] from the switch mount stud.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Remove the screw [9] and washer [7] from the switch [6].

(c) Carefully remove the switch [6] form the switch mount stud.

(d) If it is necessary, remove shrinkable sleeve when you disconnect the electrical wires from the switch [6].

(e) Disconnect the electrical wires from the switch [6] as follows:

1) Remove the three screws [3] and lockwashers [4] that hold the electrical wires.

2) Remove the wire No. 20, terminal [10] from the NC terminal.

3) Remove the wire No. 21, terminal [12] from the NO terminal.

4) Remove the wire No. 19, terminal [11] from the COM terminal.

(f) Remove the switch [6].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Speed Brake Takeoff Warning Switch Installation
Figure 401/31-51-03-990-801 (Sheet 1 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

G51531 S0006574571_V6

Speed Brake Takeoff Warning Switch Installation
Figure 401/31-51-03-990-801 (Sheet 2 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1556157 S0000286793_V5

Speed Brake Takeoff Warning Switch Installation
Figure 401/31-51-03-990-801 (Sheet 3 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INCORRECT WIRE ROUTING

D

CORRECT WIRE ROUTING

D

2952927 S0000730590_V1

Speed Brake Takeoff Warning Switch Installation
Figure 401/31-51-03-990-801 (Sheet 4 of 4)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-03-400-801

3. Speedbrake Takeoff Warning Switch - Installation

(Figure 401)

A. References

Reference	Title
10-11-05 P/B 201	CHOCK INSTALLATION
27-41-61-410-801	Stabilizer Trim Control Wheel Installation (P/B 401)
29-11-00-860-801	Hydraulic System A or B Pressurization (P/B 201)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
32-09-00-860-802	Return the Airplane to the Ground Mode (P/B 201)
32-09-10-710-801	Proximity Switch Electronics Unit (PSEU) - Operational Test (P/B 501)
SWPM 20-10-14	Installation of Shrinkable Sleeves

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-1793	Multimeter - Digital/Analog (or equivalent meter meets task requirements) Part #: 117 Supplier: 89536 Part #: 260-8XPI Supplier: 55026 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 #: 27 Supplier: 89536 Opt Part #: 77 SERIES III Supplier: 89536 Opt Part #: 87 Supplier: 89536 Opt Part #: FLUKE 27 Supplier: 89536 Opt Part #: MODEL 27 Supplier: 89536

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
6	Switch	31-51-03-01-040	LOM ALL

D. Location Zones

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

E. Speedbrake Takeoff Warning Switch Installation

SUBTASK 31-51-03-420-001

(1) Do these steps to install the speedbrake takeoff warning switch [6]:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAUTION MAKE SURE THAT THE ELECTRICAL WIRING ROUTING IS CORRECT. INCORRECT ROUTING OF THE WIRES CAN CAUSE DAMAGE TO THE SWITCH CASE AND THE TERMINAL.

(a) If it is necessary, connect the electrical wires terminals to the switch [6] before you tighten the switch [6] as follows:

1) Make sure that the electrical wiring routing is correct (View D, Figure 401).

2) If it is necessary, install shrinkable sleeve when you connect the electrical wires to switch [6] (SWPM 20-10-14).

3) Connect the wire No. 20 terminal [10] to the NC terminal.

4) Connect the wire No. 19 terminal [11] to the COM terminal.

5) Connect the wire No. 21 terminal [12] to the NO terminal.

6) Install the three screws [3] and lockwashers [4] on the switch [6].

(b) Put the switch [6] into position on the switch mount stud.

(c) Install the washer [7] and self-locking nut [8] on the switch mount stud.

1) Do not tighten the self-locking nut [8] until you adjust the switch [6].

(d) Install the washer [7] and screw [9] on the switch [6].

SUBTASK 31-51-03-820-002

(2) Adjust the speedbrake takeoff warning switch [6].

(a) Disconnect the D10982 and D10984 plugs from the Proximity Sensor Electronics Unit (PSEU) before you adjust the switch position.

(b) Lift the speedbrake lever out of the DOWN detent position and move it aft.

(c) Connect the digital/analog multimeter, COM-1793, between terminals COM and NC of the switch [6].

1) Make sure that there is continuity between the terminals and no continuity between terminals COM and NO.

(d) Hold the speedbrake lever forward and down in the detent, rotate the switch [6] counterclockwise until the roller [13] is fully depressed by the speedbrake lever actuator finger [5] (Figure 401).

1) Use zero gap condition.

(e) Tighten the screw [9] and self-locking nut [8] to 2 in-lb (0.2 N·m) - 3 in-lb (0.3 N·m) above run-on torque.

(f) Connect the digital/analog multimeter, COM-1793, between terminals COM and NO of the switch [6].

1) Make sure that there is continuity between the terminals.

2) If there is no continuity, do these steps:

a) Loosen the screw [9] and self-locking nut [8].

b) Re-adjust the switch [6].

(g) Hold the speedbrake lever forward, raise the speedbrake lever to its internal stop.

(h) Connect the digital/analog multimeter, COM-1793, between terminals COM and NO of the switch [6].

1) Make sure that there is no continuity between the terminals.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(i) Move the speedbrake lever slightly aft and slowly lower it into the detent position.

1) Maintain contact between the speedbrake lever dog and the aft side of the detent position.

(j) Make sure that switch [6] meets the following circuit conditions BEFORE the lever reaches the fully down position.

(k) Connect the digital/analog multimeter, COM-1793, between terminals COM and NO of the switch [6].

1) Make sure that there is continuity between the terminals.

(l) Move the reverse thrust lever to the REVERSE THRUST position.

(m) Connect the digital/analog multimeter, COM-1793, between terminals COM and NO of the switch [6].

1) Make sure that there is no continuity between the terminals.

(n) Remove the digital/analog multimeter, COM-1793.

(o) Move the reverse thrust lever to the stow position.

SUBTASK 31-51-03-410-001

(3) Put the switch cover [1] into its position on the control stand.

SUBTASK 31-51-03-410-002

(4) Install the screws [2].

SUBTASK 31-51-03-420-005

(5) Connect the D10982 and D10984 plugs to the PSEU.

SUBTASK 31-51-03-420-003

(6) Do this task: Stabilizer Trim Control Wheel Installation, TASK 27-41-61-410-801.

SUBTASK 31-51-03-860-003

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

F. Speedbrake Installation Test

SUBTASK 31-51-03-860-005

(1) Make sure that the airplane is in the ground mode.

(a) If it is necessary, do this task: Return the Airplane to the Ground Mode, TASK 32-09-00-860-802.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-03-860-013

> **WARNING**
> MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(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

SUBTASK 31-51-03-420-004

> **WARNING**
> KEEP PERSONNEL AND EQUIPMENT AWAY FROM THE FLIGHT CONTROL SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

(3) Pressurize the hydraulic systems A and B, do this task: Hydraulic System A or B Pressurization, TASK 29-11-00-860-801.

SUBTASK 31-51-03-860-012

(4) Make sure that the thrust levers 1 and 2 are in the idle position.

SUBTASK 31-51-03-860-006

(5) Install chocks on the landing wheels (CHOCK INSTALLATION, PAGEBLOCK 10-11-05/201).

SUBTASK 31-51-03-860-007

(6) Do these steps to set the airplane into the takeoff configuration:
   - (a) Set the trailing edge flaps to the 15 unit position.
   - (b) Make sure that the stabilizer is within 1 unit of the center of the green band.
   - (c) Make sure that the speedbrake lever is in the DOWN detent position.
   - (d) Release the parking brakes.
   - (e) Set the thrust lever no. 1 to the full forward thrust position.

SUBTASK 31-51-03-730-004

(7) Lift the speedbrake lever from the DOWN detent position without moving the lever aft.
   - (a) Make sure that you hear an intermittent horn.

SUBTASK 31-51-03-730-002

(8) Set the speedbrake lever to the UP position.
   - (a) Make sure that the intermittent horn continues.

SUBTASK 31-51-03-730-003

(9) Put the speedbrake lever in the DOWN detent position.
   - (a) Make sure that the intermittent horn stops.

SUBTASK 31-51-03-860-015

(10) Set the thrust levers no. 1 to the idle position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-03-860-009

(11) Set the trailing edge flaps to the 0 unit position.

SUBTASK 31-51-03-710-001

(12) Do this task: Proximity Switch Electronics Unit (PSEU) - Operational Test, TASK 32-09-10-710-801.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 31-51-03-860-010

(1) Set the parking brakes.

SUBTASK 31-51-03-000-001

(2) Remove the hydraulic pressure from the system A and system B, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-51-03-860-014

(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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

AURAL WARNING MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the aural warning module

(2) An installation of the aural warning module.

B. The aural warning module, M315, is on the control stand.

TASK 31-51-04-000-801

2. Aural Warning Module Removal

(Figure 401)

A. Location Zones

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

B. Aural Warning Module Removal

SUBTASK 31-51-04-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	3	C00170	MACH WARN SYS-1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	7	C00549	MACH WARN SYS -2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	21	C00396	FIRE PROT DETECTION MA WRN & CONT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-04-040-001

(2) Remove the screws [2] and screws [3].

SUBTASK 31-51-04-860-002

(3) Disconnect the electrical connectors [4].

SUBTASK 31-51-04-480-001

(4) Remove the aural warning module [1].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

G57763 S0006574576_V3

Aural Warning Module Installation
Figure 401/31-51-04-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-51-04-400-801

3. Aural Warning Module Installation

(Figure 401)

A. References

Reference	Title
31-51-00-740-801	Aural Warning Module BITE Test (P/B 501)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Aural warning module	31-51-00-01-025	LOM ALL

C. Location Zones

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

D. Aural Warning Module Installation

SUBTASK 31-51-04-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	3	C00170	MACH WARN SYS-1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	7	C00549	MACH WARN SYS -2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	21	C00396	FIRE PROT DETECTION MA WRN & CONT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

SUBTASK 31-51-04-420-001

(2) Put the aural warning module [1] on the forward section of the control stand.

SUBTASK 31-51-04-420-002

(3) Connect the electrical connectors [4].

SUBTASK 31-51-04-760-001

(4) Install the screws [2] and screws [3].

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-04-860-004

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	3	C00170	MACH WARN SYS-1

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
B	7	C00549	MACH WARN SYS -2

F/O Electrical System Panel, P6-2

Row	Col	Number	Name
A	21	C00396	FIRE PROT DETECTION MA WRN & CONT

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	17	C00129	LANDING GEAR LATCH & PRESS WARN
C	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

E. Aural Warning Module Installation Test

SUBTASK 31-51-04-410-001

(1) Make sure that the airplane is in the ground mode.

SUBTASK 31-51-04-740-001

(2) Do this task: Aural Warning Module BITE Test, TASK 31-51-00-740-801

SUBTASK 31-51-04-410-002

(3) Set the parking brakes.

SUBTASK 31-51-04-860-005

(4) 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 31-51-04-410-003

WARNING

MAKE SURE THAT YOU OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. THE FORWARD MOVEMENT OF A THRUST LEVER CAN CAUSE THE AUTOMATIC OPERATION OF THE SYSTEM. THE OPERATION OF THIS SYSTEM CAN CAUSE SERIOUS INJURY TO PERSONS AND DAMAGE TO EQUIPMENT IN THE AREA OF THE NOSE RADOME.

(5) Move the thrust levers to the takeoff position.

(a) Make sure that you hear an intermittent horn.

SUBTASK 31-51-04-410-004

(6) Move the thrust levers to the idle position.

(a) Make sure that the intermittent horn stops.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-51-04-860-006

(7) 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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

COMMON DISPLAY SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has these tasks:

(1) Common Display System Deactivation.

(2) Common Display System Activation

TASK 31-62-00-040-801

2. Common Display System - Deactivation

(Figure 201)

A. General

(1) This procedure removes electrical power to the Common Display System.

B. Location Zones

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

C. Procedure

SUBTASK 31-62-00-860-030

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	2	C01372	DISPLAY CTR UPR
D	3	C01365	DISPLAY CAPT INBD
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD
E	11	C01366	DISPLAY F/O INBD
E	12	C01373	DISPLAY CTR LWR

D. Common Display System - Tryout

NOTE: This tryout is to make sure the Common Display System is in a zero energy state.

SUBTASK 31-62-00-860-031

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	2	C01372	DISPLAY CTR UPR
D	3	C01365	DISPLAY CAPT INBD
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD
E	11	C01366	DISPLAY F/O INBD

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	12	C01373	DISPLAY CTR LWR

SUBTASK 31-62-00-700-001

(2) Make sure the display screens on the display units are blank and non functional.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

(EXAMPLE, 6 LOCATIONS)

A

2382914 S0000545674_V1

Common Display System
Figure 201/31-62-00-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-00-440-801

3. **Common Display System - Activation**
(Figure 201)

A. **General**

(1) This procedure adds electrical power to the Common Display Systemn

B. **Location Zones**

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

C. **Procedure**

SUBTASK 31-62-00-860-032

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	2	C01372	DISPLAY CTR UPR
D	3	C01365	DISPLAY CAPT INBD
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD
E	11	C01366	DISPLAY F/O INBD
E	12	C01373	DISPLAY CTR LWR

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

COMMON DISPLAY 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 common display system.

(2) A system test of the common display system.

TASK 31-62-00-710-801

2. Common Display System - Operational Test

A. General

(1) The operational test does a quick check of the common display 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 procedure must be done before each test or sequence of tests.

(3) The Control Display Unit (CDU) is necessary for this procedure.

(4) You must know the correct DEU software part numbers prior to starting this task in order to verify the proper configuration.

(5) The software Compatibility Class Number (CCN) for the two DEUs must be the same for them to operate together. You can find the CCN on the Ident/Config BITE page in the line below the OPS P/N.

B. References

Reference	Title
31-62-21-000-801	Display Electronic Unit Removal (P/B 401)
31-62-21-400-801	Display Electronic Unit Installation (P/B 401)
31-62-21-470-801	Display Electronic Unit Software - Installation with an Airborne Data Loader (P/B 201)
31-62-21-470-802	Display Electronic Unit Software - Installation with a Portable Data Loader (P/B 201)
31-62-21-470-805	Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL) (P/B 201)

C. Location Zones

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

D. Prepare For Test

SUBTASK 31-62-00-860-002

(1) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to NORM position.

(a) Make sure that the two outboard display units and the two inboard display units show the applicable flight data format.

E. Software Configuration Check

SUBTASK 31-62-00-750-001

(1) Do these steps to do a software configuration check of the DEUs.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) If you are not at one of the CDS DEU BITE displays, then do these steps:

1) Push the INIT REF function key.

2) If the POS INIT display shows, then push the line select key (LSK) next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the LSK next to the MAINT prompt.

(b) From the MAINT BITE INDEX, push the LSK next to the CDS prompt.

(c) Push the LSK next to the DEU 1 prompt.

(d) Push the LSK next to the IDENT/CONFIG prompt.

1) Make sure that the correct part numbers show on the display.

a) If the part numbers are not correct, do this task: Display Electronic Unit Software - Installation with a Portable Data Loader, TASK 31-62-21-470-802 or Display Electronic Unit Software - Installation with an Airborne Data Loader, TASK 31-62-21-470-801 or Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL), TASK 31-62-21-470-805

or replace the DEU.

These are the tasks:

Display Electronic Unit Removal, TASK 31-62-21-000-801,

Display Electronic Unit Installation, TASK 31-62-21-400-801.

2) Record the CCN.

NOTE: The CCN is on the Ident/Config BITE display in the line after the OPS P/N. You will compare it to the DEU-2 CCN in a different step.

(e) Push the LSK next to the INDEX prompt until the MAINT BITE INDEX page shows.

(f) Push the LSK next to the CDS prompt.

(g) Push the LSK next to the DEU 2 prompt.

(h) Push the LSK next to the IDENT/CONFIG prompt.

1) Make sure that the correct part numbers show on the display.

a) If the part numbers are not correct, do this task: Display Electronic Unit Software - Installation with a Portable Data Loader, TASK 31-62-21-470-802 or Display Electronic Unit Software - Installation with an Airborne Data Loader, TASK 31-62-21-470-801 or Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL), TASK 31-62-21-470-805

or replace the DEU.

These are the tasks:

Display Electronic Unit Removal, TASK 31-62-21-000-801,

Display Electronic Unit Installation, TASK 31-62-21-400-801.

2) Compare the CCN for DEU-2 with the CCN for DEU-1.

NOTE: The CCN is on the Ident/Config BITE display in the line after the OPS P/N.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

a) If the first four digits of the CCNs are not the same, replace the OPS software in one of the DEUs. To install compatible software, do this task: Display Electronic Unit Software - Installation with a Portable Data Loader, TASK 31-62-21-470-802 or Display Electronic Unit Software - Installation with an Airborne Data Loader, TASK 31-62-21-470-801 or Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL), TASK 31-62-21-470-805

NOTE: If the left and right DEU models are different (one is a DEU I and the other is a DEU II); or if the offside DEU has failed, is powered off, or has faulty communication with the on-side DEU, the last four digits of the CCN will be displayed as X's instead of numbers.

F. Display Unit Operational Test

SUBTASK 31-62-00-730-001

(1) Use the control display unit (CDU) to do a test of the display units (DUs):

(a) Make these selections on the CDU:

1) Push the INIT REF key.
2) Push the line select key (LSK) adjacent to INDEX.
3) Push the LSK adjacent to MAINT.
4) Push the LSK adjacent to CDS.
5) Push the LSK adjacent to DEU 1.
6) Push the LSK adjacent to GROUND TESTS.
7) Push the LSK adjacent to DU LOOP TEST.
8) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

(b) Make sure all six DUs agree with the data in (Table 501).

Table 501/31-62-00-993-802 Display Unit Test Format DEU 1 selected coupler #1

Display Unit Test Format DEU 1 selected coupler #1 to left DUs coupler #2 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	1	1	1	2	2	2
INPUT ACTIVITY	[Y]YYY	[Y]YYY	[Y]YYY	Y[Y]YY	Y[Y]YY	Y[Y]YY
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(c) For the Bezel light sensor and the remote light sensor, make sure that some numbers show.

NOTE: if the bezel light sensor shows "BAB", then see fault isolation procedure associated with display unit problems. If the remote light sensor (RLS) shows "BAB", then see fault isolation procedure regarding the RLS problem.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(d) For each DU, make sure that the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(e) On the control display unit, push the LSK adjacent to COAX 2 TO LT DISPLAYS & COAX 1 TO RT DISPLAYS.

(f) Make sure that all six DUs agree with the data in (Table 502).

Table 502/31-62-00-993-803 Display Unit Test Format DEU 1 selected coupler #2

Display Unit Test Format DEU 1 selected coupler #2 to left DUs coupler #1 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	2	2	2	1	1	1
INPUT ACTIVITY	Y[Y]YY	Y[Y]YY	Y[Y]YY	[Y]YYY	[Y]YYY	[Y]YYY
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(g) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(h) Do these steps at the control display unit:

1) Push the INIT REF key.
2) Push the line select key (LSK) adjacent to INDEX.
3) Push the LSK adjacent to MAINT.
4) Push the LSK adjacent to CDS.
5) Push the LSK adjacent to DEU 2.
6) Push the LSK adjacent to GROUND TESTS.
7) Push the LSK adjacent to DU LOOP TEST.
8) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

(i) Make sure that all six DUs agree with the data in (Table 503).

Table 503/31-62-00-993-804

Display Unit Test Format DEU 2 selected coupler #4 to left DUs coupler #3 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 503/31-62-00-993-804 (Continued)

Display Unit Test Format DEU 2 selected coupler #4 to left DUs coupler #3 to right DUs						
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	1	1	1	2	2	2
INPUT ACTIVITY	YY[Y]Y	YY[Y]Y	YY[Y]Y	YYY[Y]	YYY[Y]	YYY[Y]
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(j) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(k) On the control display unit, push the LSK adjacent to COAX 2 TO LT DISPLAYS & COAX 1 TO RT DISPLAYS.

(l) Make sure that all six DUs agree with the data in (Table 504).

Table 504/31-62-00-993-805

Display Unit Test Format DEU 2 selected coupler #3 to left DUs coupler #4 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	2	2	2	1	1	1
INPUT ACTIVITY	YYY[Y]	YYY[Y]	YYY[Y]	YY[Y]Y	YY[Y]Y	YY[Y]Y
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(m) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(n) Push the INIT REF on the control display unit to stop the test.

G. EFIS Control Panel Operational Test

SUBTASK 31-62-00-860-003

(1) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-00-710-001

(2) Do these steps at the captain's EFIS control panel:

(a) Set the outer knob on the BARO switch on the EFIS control panel to IN position.

1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(b) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases.

(c) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that the STD shows on the captain's display unit.

NOTE: This selects the standard baro setting of 29.92 inches or 1013 hPa.

SUBTASK 31-62-00-710-002

(3) Do these steps at the first officer's EFIS control panel:

(a) Set the outer knob on the BARO switch on the EFIS control panel to IN position.

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(b) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases.

(c) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that the STD shows on the first officer's display unit.

NOTE: This selects the standard baro setting of 29.92 inches or 1013 hPa.

H. Display Select Module Operational Test

SUBTASK 31-62-00-860-004

(1) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to INBD ENG PRI position.

(a) Make sure that the display units show as follows:

LOM 404 PRE SB 737-31-1650

1) The two outboard display units show the compacted EFIS format.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

2) The two outboard display units show the PFD format.

LOM ALL

3) The two inboard display units show the engine format.

4) The center upper display unit is blank.

SUBTASK 31-62-00-860-005

(2) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to NORM position.

SUBTASK 31-62-00-860-006

(3) Turn the knobs on the LOWER DU switches on the two display select modules to ENG PRI position.

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(a) Make sure that the center lower display unit shows the engine format.

(b) Make sure that the center upper display unit is blank.

I. Instrument Switching Module Operational Test

SUBTASK 31-62-00-730-002

(1) Set the NAVIGATION IRS switch on the instrument switching module to BOTH ON L position.

(a) Make sure that the message INSTR SWITCH shows on the captain's display unit.

(b) Make sure that the message INSTR SWITCH shows on the first officer's display unit.

NOTE: You also see this message if the NAVIGATION IRS switch is set to BOTH ON R.

LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 PRE SB 737-31-1650 AND PRE SB 737-31A1880

SUBTASK 31-62-00-730-063

(2) Set the DISPLAYS SOURCE switch on the instrument switching module to ALL ON 1 position.

(a) Make sure that the message DSPLY SOURCE shows on the captain's display unit.

(b) Make sure that the message DSPLY SOURCE shows on the first officer's display unit.

NOTE: You also see this message if the DISPLAYS SOURCE switch is set to ALL ON 2 position.

LOM 402, 406, 407, 412, 415, 416, 423, 424, 426-431, 437-439, 441, 443-447, 455, 456, 458-999; LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 POST SB 737-31-1650 OR POST SB 737-31A1880

SUBTASK 31-62-00-730-003

(3) Set the DISPLAYS SOURCE switch on the instrument switching module to ALL ON 1 position.

(a) Make sure that the message DSPLY SOURCE 2 shows on the captain's display unit.

(b) Make sure that the message DSPLY SOURCE 2 shows on the first officer's display unit.

NOTE: You also see this message if the DISPLAYS SOURCE 1 switch is set to ALL ON 2.

LOM ALL

SUBTASK 31-62-00-860-028

(4) Set the NAVIGATION IRS switch back to NORMAL position.

(5) Set the DISPLAYS SOURCE switch back to AUTO position .

J. Engine Control Module Operational Test

SUBTASK 31-62-00-730-004

(1) Turn the knobs on the LOWER DU switches on the two display select modules to NORM position.

(a) Make sure that the center upper display unit shows the engine format.

SUBTASK 31-62-00-860-019

(2) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL position.

SUBTASK 31-62-00-730-005

(3) Set the FUEL FLOW switch on the engine control module to USED position.

(a) Make sure that the FF/FU displays show fuel quantity used.

NOTE: If there is no power to the EEC, then the fuel used indication will be zero.

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SUBTASK 31-62-00-730-006

(4) Set the outer knob on the N1 SET switch on the engine control module to 2 position.

SUBTASK 31-62-00-730-007

(5) Turn the inner knob on the N1 SET switch on the engine control module counterclockwise to the first detent.

(a) Make sure that the number 2 N1 BUG moves in the counterclockwise direction.

NOTE: If the N1 BUG is at its display limit, rotate the knob in the direction that allows the bug to move.

SUBTASK 31-62-00-730-048

(6) Set the outer knob on the SPD REF switch on the engine control module to VR position.

SUBTASK 31-62-00-730-049

(7) Turn the inner knob on the SPD REF switch on the engine control module clockwise to the second detent (right stop).

(a) Make sure that the VR digits on the captain's and first officer's display units increase in value.

SUBTASK 31-62-00-010-001

(8) Set the outer knob on the N1 SET switch back to AUTO position.

(9) Set the outer knob on the SPD REF switch to AUTO position.

——— END OF TASK ———

TASK 31-62-00-730-801

3. Common Display System - System Test

A. General

(1) The system test does a complete check of the common display system. The test makes sure that the system operates satisfactorily.

(2) You can do the tests in sequence or one at a time. The Prepare For Test procedure must be done before each test or sequence of tests.

(3) The control display unit (CDU) is necessary for this procedure.

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
211	Flight Compartment - Left
212	Flight Compartment - Right

D. Prepare For Test

SUBTASK 31-62-00-860-008

(1) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to NORM.

(a) Make sure that the display units show as follows:

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LOM 404 PRE SB 737-31-1650

1) The two outboard display units and the two inboard display units show the EFIS/MAP formats.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

2) The two outboard display units and the two inboard display units show the PFD/ND formats.

LOM ALL

3) The center upper display unit shows the engine format.

LOM 404 PRE SB 737-31-1650

4) The center lower display unit is blank.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

5) The center lower display unit shows the engine secondary display.

LOM ALL

SUBTASK 31-62-00-860-009

(2) Turn the knobs on the LOWER DU switches on the two display select modules to ENG PRI.

(a) Make sure that the center lower display unit shows the engine format.

E. Lighting Control Module Test

SUBTASK 31-62-00-860-024

(1) Make these selections on the CDU:

(a) Push the INIT REF key.

(b) Push the line select key (LSK) adjacent to INDEX.

(c) Push the LSK adjacent to MAINT.

(d) Push the LSK adjacent to CDS.

(e) Push the LSK adjacent to DEU 1.

(f) Push the LSK adjacent to GROUND TESTS.

(g) Push the LSK adjacent to DU LOOP TEST.

(h) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

SUBTASK 31-62-00-730-051

(2) Make sure that all six DUs agree with the data in (Table 501).

SUBTASK 31-62-00-710-003

(3) Turn the outer INBD BRT control on the captain's lighting control module.

(a) Make sure that the UNIT value that shows on the captain's inboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-004

(4) Turn the outer OUTBD BRT control on the captain's lighting control module.

(a) Make sure that the UNIT value that shows on the captain's outboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

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SUBTASK 31-62-00-710-005

(5) Turn the outer UPPER BRT control on the captain's lighting control module.

(a) Make sure that the UNIT value that shows on the center upper DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-006

(6) Turn the outer LOWER BRT control on the captain's lighting control module.

(a) Make sure that the UNIT value that shows on the center lower DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-007

(7) Turn the outer INBD BRT control on the first officer's lighting control module.

(a) Make sure that the UNIT value that shows on the first officer's inboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-008

(8) Turn the outer OUTBD BRT control on the first officer's lighting control module.

(a) Make sure that the UNIT value that shows on the first officer's outboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-009

(9) Turn the inner INBD BRT control on the captain's lighting control module.

(a) Make sure that the WXR value that shows on the captain's inboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-010

(10) Turn the inner LOWER BRT control on the captain's lighting control module.

(a) Make sure that the WXR value that shows on the center lower DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-710-011

(11) Turn the inner INBD BRT control on the first officer's lighting control module.

(a) Make sure that the WXR value that shows on the first officer's inboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-00-860-025

(12) Push the INIT REF key on the CDU to stop the test.

LOM 429-431, 461-463

F. EFIS Control Panel Test

SUBTASK 31-62-00-860-026

(1) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL.

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LOM 429-431, 461-463 (Continued)

SUBTASK 31-62-00-730-052

(2) Do these steps at the captain's EFIS control panel.

(a) Set the display mode switch on the EFIS control panel to VOR.

1) Make sure that the VOR mode shows on the captain's display unit.

(b) Set the display mode switch on the EFIS control panel to MAP.

1) Make sure that the map mode shows on the captain's display unit.

(c) Set the display mode switch on the EFIS control panel to PLN.

1) Make sure that plan mode shows on the captain's display unit.

NOTE: The plan mode shows as a full rose compass with a north up orientation.

(d) Set the display mode switch on the EFIS control panel to APP.

1) Make sure that app mode shows on the captain's display unit.

(e) Set the VOR 1 switch on the EFIS control panel to VOR 1.

1) Make sure that VOR 1 shows in the captain's display unit.

(f) Set the VOR 1 switch on the EFIS control panel to OFF.

1) Make sure that neither VOR 1 shows in the captain's display unit.

(g) Set the VOR 2 switch on the EFIS control panel to VOR 2.

1) Make sure that VOR 2 shows in the captain's display unit.

(h) Set the VOR 2 switch on the EFIS control panel to OFF.

1) Make sure that VOR 2 does not show in the captain's display unit.

(i) Set the display mode switch on the EFIS control panel to MAP.

NOTE: If the captain's display unit does not show the MAP data in the expanded mode, push CTR on the EFIS control panel.

(j) Set the range switch on the EFIS control panel to the values that follow (Table 505).

1) Make sure that the captain's display unit shows the corresponding mid-range value in the middle of the display.

Table 505/31-62-00-993-808

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
5	2.5
10	5
20	10
40	20
80	40
160	80
320	160
640	320

(k) Set the range switch on the EFIS control panel to 40.

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LOM 429-431, 461-463 (Continued)

(l) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator shows on the captain's display unit.

NOTE: The TFC annunciator will show when the transponder mode selector on the transponder panel is in one of the two positions TA ONLY or TA/RA. And the reply selector on the transponder panel is in one of the two positions AUTO or ON.

(m) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator does not show on the captain's display unit.

(n) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator shows on the captain's display unit.

(o) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator does not show on the captain's display unit.

(p) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator shows on the captain's display unit.

(q) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator does not show on the captain's display unit.

(r) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator shows on the captain's display unit.

(s) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator does not show on the captain's display unit.

(t) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data shows on the captain's display unit.

NOTE: Waypoint data will not show unless an active route is installed in the flight management computer and the waypoint is within range.

(u) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data does not show on the captain's display unit.

(v) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator shows on the captain's display unit.

(w) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator does not show on the captain's display unit.

(x) Set the outer knob on the MINS switch on the EFIS control panel to the BARO position.

1) Make sure that BARO shows on the captain's display unit.

(y) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum BARO altitude increases and decreases on the captain's display unit.

(z) Set the outer knob on the MINS switch on the EFIS control panel to the RADIO position.

1) Make sure that RADIO shows on the captain's display unit.

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(aa) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum RADIO altitude increases and decreases on the captain's display unit.

(ab) Set the outer knob on the BARO switch on the EFIS control panel to the HPA position.

1) Make sure that the barometric pressure shows in hecto-pascals on the captain's display unit.

(ac) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(ad) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases on the captain's display unit.

(ae) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that STD shows on the captain's display unit.

(af) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that he barometric pressure shows in inches on the captain's display unit.

(ag) Do these steps to do a test of the MTRS button on the EFIS control panel.

1) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude shows on the captain's display unit.

2) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude does not shows on the captain's display unit.

(ah) Push the FPV button on the EFIS control panel.

1) Make sure that flight path vector shows on the captain's display unit.

SUBTASK 31-62-00-730-053

(3) Do these steps at the first officer's EFIS control panel.

(a) Set the display mode switch on the EFIS control panel to VOR.

1) Make sure that the VOR mode shows on the first officer's display unit.

(b) Set the display mode switch on the EFIS control panel to MAP.

1) Make sure that map mode shows on the first officer's display unit.

(c) Set the display mode switch on the EFIS control panel to PLN.

1) Make sure that plan mode shows on the first officer's display unit.

NOTE: The plan mode shows as a full rose compass with a north up orientation.

(d) Set the display mode switch on the EFIS control panel to APP.

1) Make sure that app mode shows on the first officer's display unit.

(e) Set the VOR 1/ADF 1 switch on the EFIS control panel to VOR 1.

1) Make sure that VOR 1 shows in the first officer's display unit.

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(f) Set the VOR 1/ADF 1 switch on the EFIS control panel to OFF.

1) Make sure that neither VOR 1 shows in the first officer's display unit.

(g) Set the VOR 2/ADF 2 switch on the EFIS control panel to VOR 2.

1) Make sure that VOR 2 shows in the first officer's display unit.

(h) Set the VOR 2/ADF 2 switch on the EFIS control panel to OFF.

1) Make sure that VOR 2 does not show in the first officer's display unit.

(i) Set the display mode switch on the EFIS control panel to MAP.

NOTE: If the first officer's display unit does not show the MAP data in the expanded mode, push CTR on the EFIS control panel.

(j) Set the range switch on the EFIS control panel to the values that follow (Table 506).

1) Make sure that the first officer's display unit shows the corresponding mid-range value in the middle of the display.

Table 506/31-62-00-993-809

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
5	2.5
10	5
20	10
40	20
80	40
160	80
320	160
640	320

(k) Set the range switch on the EFIS control panel to 40.

(l) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator shows on the first officer's display unit.

NOTE: The TFC annunciator will show when the transponder mode selector on the transponder panel is in one of the two positions TA ONLY or TA/RA. And the reply selector on the transponder panel is in one of the two positions AUTO or ON.

(m) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator does not show on the first officer's display unit.

(n) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator shows on the first officer's display unit.

(o) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator does not show on the first officer's display unit.

(p) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator shows on the first officer's display unit.

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LOM 429-431, 461-463 (Continued)

(q) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator does not show on the first officer's display unit.

(r) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator shows on the first officer's display unit.

(s) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator does not show on the first officer's display unit.

(t) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data shows on the first officer's display unit.

NOTE: Waypoint data will not show unless an active route is installed in the flight management computer and the waypoint is within range.

(u) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data does not show on the first officer's display unit.

(v) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator shows on the first officer's display unit.

(w) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator does not show on the first officer's display unit.

(x) Set the outer knob on the MINS switch on the EFIS control panel to the BARO position.

1) Make sure that BARO shows on the first officer's display unit.

(y) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum BARO altitude increases and decreases on the first officer's display unit.

(z) Set the outer knob on the MINS switch on the EFIS control panel to the RADIO position.

1) Make sure that RADIO shows on the first officer's display unit.

(aa) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum RADIO altitude increases and decreases on the first officer's display unit.

(ab) Set the outer knob on the BARO switch on the EFIS control panel to the HPA position.

1) Make sure that the barometric pressure shows in hecto-pascals on the first officer's display unit.

(ac) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(ad) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases on the first officer's display unit.

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LOM 429-431, 461-463 (Continued)

(ae) Push the STD button on the BARO switch on the EFIS control panel.
1) Make sure that STD shows on the first officer's display unit.

(af) Push the STD button on the BARO switch on the EFIS control panel.
1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(ag) Do these steps to do a test of the MTRS button on the EFIS control panel.
1) Push the MTRS button on the EFIS control panel.
a) Make sure that the metric altitude shows on the first officer's display unit.
2) Push the MTRS button on the EFIS control panel.
a) Make sure that the metric altitude does not shows on the first officer's display unit.

(ah) Push the FPV button on the EFIS control panel.
1) Make sure that flight path vector shows on the first officer's display unit.

LOM 422, 425, 427, 428, 432-434, 437, 438, 440, 442-447, 451-457

G. EFIS Control Panel Test

SUBTASK 31-62-00-860-010

(1) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL.

SUBTASK 31-62-00-730-065

(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 31-62-00-730-010

(3) Do these steps at the captain's EFIS control panel.
(a) Set the display mode switch on the EFIS control panel to VOR.
1) Make sure that the VOR mode shows on the captain's display unit.
(b) Set the display mode switch on the EFIS control panel to MAP.
1) Make sure that map mode shows on the captain's display unit.
(c) Set the display mode switch on the EFIS control panel to PLN.
1) Make sure that plan mode shows on the captain's display unit.
NOTE: The plan mode shows as a full rose compass with a north up orientation.
(d) Set the display mode switch on the EFIS control panel to APP.
1) Make sure that app mode shows on the captain's display unit.
(e) Set the VOR 1/ADF 1 switch on the EFIS control panel to VOR 1.
1) Make sure that VOR 1 shows in the captain's display unit.
(f) Set the VOR 1/ADF 1 switch on the EFIS control panel to ADF 1.
1) Make sure that ADF 1 shows in the captain's display unit.
(g) Set the VOR 1/ADF 1 switch on the EFIS control panel to OFF.
1) Make sure that neither VOR 1 shows in the captain's display unit.
2) Make sure that ADF 1 does not show in the captain's display unit.

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(h) Set the VOR 2/ADF 2 switch on the EFIS control panel to VOR 2.

1) Make sure that VOR 2 shows in the captain's display unit.

(i) Set the VOR 2/ADF 2 switch on the EFIS control panel to OFF.

1) Make sure that VOR 2 does not show in the captain's display unit.

(j) Set the display mode switch on the EFIS control panel to MAP.

NOTE: If the captain's display unit does not show the MAP data in the expanded mode, push CTR on the EFIS control panel.

(k) Set the range switch on the EFIS control panel to the values that follow (Table 507).

1) Make sure that the captain's display unit shows the corresponding mid-range value in the middle of the display.

Table 507/31-62-00-993-806

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
5	2.5
10	5
20	10
40	20
80	40
160	80
320	160
640	320

(l) Set the range switch on the EFIS control panel to 40.

(m) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator shows on the captain's display unit.

NOTE: The TFC annunciator will show when the transponder mode selector on the transponder panel is in one of the two positions TA ONLY or TA/RA. And the reply selector on the transponder panel is in one of the two positions AUTO or ON.

(n) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator does not show on the captain's display unit.

(o) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator shows on the captain's display unit.

(p) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator does not show on the captain's display unit.

(q) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator shows on the captain's display unit.

(r) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator does not show on the captain's display unit.

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(s) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator shows on the captain's display unit.

(t) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator does not show on the captain's display unit.

(u) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data shows on the captain's display unit.

NOTE: Waypoint data will not show unless an active route is installed in the flight management computer and the waypoint is within range.

(v) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data does not show on the captain's display unit.

(w) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator shows on the captain's display unit.

(x) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator does not show on the captain's display unit.

(y) Set the outer knob on the MINS switch on the EFIS control panel to the BARO position.

1) Make sure that BARO shows on the captain's display unit.

(z) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum BARO altitude increases and decreases on the captain's display unit.

(aa) Set the outer knob on the MINS switch on the EFIS control panel to the RADIO position.

1) Make sure that RADIO shows on the captain's display unit.

(ab) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum RADIO altitude increases and decreases on the captain's display unit.

(ac) Set the outer knob on the BARO switch on the EFIS control panel to the HPA position.

1) Make sure that the barometric pressure shows in hecto-pascals on the captain's display unit.

(ad) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(ae) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases on the captain's display unit.

(af) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure STD shows on the captain's display unit.

(ag) Push the STD button on the BARO switch on the EFIS control panel.

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1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(ah) Do these steps to do a test of the MTRS button on the EFIS control panel:

1) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude shows on the captain's display unit.

2) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude does not shows on the captain's display unit.

(ai) Push the FPV button on the EFIS control panel.

1) Make sure that flight path vector shows on the captain's display unit.

SUBTASK 31-62-00-730-011

(4) Do these steps at the first officer's EFIS control panel:

(a) Set the display mode switch on the EFIS control panel to VOR.

1) Make sure that the VOR mode shows on the first officer's display unit.

(b) Set the display mode switch on the EFIS control panel to MAP.

1) Make sure that map mode shows on the first officer's display unit.

(c) Set the display mode switch on the EFIS control panel to PLN.

1) Make sure that plan mode shows on the first officer's display unit.

NOTE: The plan mode shows as a full rose compass with a north up orientation.

(d) Set the display mode switch on the EFIS control panel to APP.

1) Make sure that app mode shows on the first officer's display unit.

(e) Set the VOR 1/ADF 1 switch on the EFIS control panel to VOR 1.

1) Make sure that VOR 1 shows in the first officer's display unit.

(f) Set the VOR 1/ADF 1 switch on the EFIS control panel to ADF 1.

1) Make sure that ADF 1 shows in the first officer's display unit.

(g) Set the VOR 1/ADF 1 switch on the EFIS control panel to OFF.

1) Make sure that neither VOR 1 shows in the first officer's display unit.

2) Make sure that ADF 1 does not show in the first officer's display unit.

(h) Set the VOR 2/ADF 2 switch on the EFIS control panel to VOR 2.

1) Make sure that VOR 2 shows in the first officer's display unit.

(i) Set the VOR 2/ADF 2 switch on the EFIS control panel to OFF.

1) Make sure that VOR 2 does not show in the first officer's display unit.

(j) Set the display mode switch on the EFIS control panel to MAP.

NOTE: If the first officer's display unit does not show the MAP data in the expanded mode, push CTR on the EFIS control panel.

(k) Set the range switch on the EFIS control panel to the values that follow (Table 508).

1) Make sure that the first officer's display unit shows the corresponding mid-range value in the middle of the display.

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Table 508/31-62-00-993-807

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
5	2.5
10	5
20	10
40	20
80	40
160	80
320	160
640	320

(l) Set the range switch on the EFIS control panel to 40.

(m) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator shows on the first officer's display unit.

NOTE: The TFC annunciator will show when the transponder mode selector on the transponder panel is in one of the two positions TA ONLY or TA/RA. And the reply selector on the transponder panel is in one of the two positions AUTO or ON.

(n) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator does not show on the first officer's display unit.

(o) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator shows on the first officer's display unit.

(p) Push the STA button on the EFIS control panel.

1) Make sure the STA annunciator does not show on the first officer's display unit.

(q) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator shows on the first officer's display unit.

(r) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator does not show on the first officer's display unit.

(s) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator shows on the first officer's display unit.

(t) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator does not show on the first officer's display unit.

(u) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data shows on the first officer's display unit.

NOTE: Waypoint data will not show unless an active route is installed in the flight management computer and the waypoint is within range.

(v) Push the DATA button on the EFIS control panel.

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1) Make sure that the waypoint data does not show on the first officer's display unit.

(w) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator shows on the first officer's display unit.

(x) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator does not show on the first officer's display unit.

(y) Set the outer knob on the MINS switch on the EFIS control panel to the BARO position.

1) Make sure that BARO shows on the first officer's display unit.

(z) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum BARO altitude increases and decreases on the first officer's display unit.

(aa) Set the outer knob on the MINS switch on the EFIS control panel to the RADIO position.

1) Make sure that RADIO shows on the first officer's display unit.

(ab) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum RADIO altitude increases and decreases on the first officer's display unit.

(ac) Set the outer knob on the BARO switch on the EFIS control panel to the HPA position.

1) Make sure that the barometric pressure shows in hecto-pascals on the first officer's display unit.

(ad) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(ae) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases on the first officer's display unit.

(af) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that STD shows on the first officer's display unit.

(ag) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(ah) Do these steps to do a test of the MTRS button on the EFIS control panel.

1) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude shows on the first officer's display unit.

2) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude does not shows on the first officer's display unit.

(ai) Push the FPV button on the EFIS control panel.

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LOM 422, 425, 427, 428, 432-434, 437, 438, 440, 442-447, 451-457 (Continued)

1) Make sure that flight path vector shows on the first officer's display unit.

LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 423, 424, 426, 439, 441, 450, 458-460, 464-999

H. EFIS Control Panel Test

SUBTASK 31-62-00-860-027

(1) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL.

SUBTASK 31-62-00-730-054

(2) Do these steps at the captain's EFIS control panel:

(a) Set the display mode switch on the EFIS control panel to VOR.

1) Make sure that the VOR mode shows on the captain's display unit.

(b) Set the display mode switch on the EFIS control panel to MAP.

1) Make sure that map mode shows on the captain's display unit.

(c) Set the display mode switch on the EFIS control panel to PLN.

1) Make sure that plan mode shows on the captain's display unit.

NOTE: The plan mode shows as a full rose compass with a north up orientation.

(d) Set the display mode switch on the EFIS control panel to APP.

1) Make sure that app mode shows on the captain's display unit.

(e) Set the VOR 1/ADF 1 switch on the EFIS control panel to VOR 1.

1) Make sure that VOR 1 shows in the captain's display unit.

(f) Set the VOR 1/ADF 1 switch on the EFIS control panel to ADF 1.

1) Make sure that ADF 1 shows in the captain's display unit.

(g) Set the VOR 1/ADF 1 switch on the EFIS control panel to OFF.

1) Make sure that neither VOR 1 shows in the captain's display unit.

2) Make sure that ADF 1 does not show in the captain's display unit.

(h) Set the VOR 2/ADF 2 switch on the EFIS control panel to VOR 2.

1) Make sure that VOR 2 shows in the captain's display unit.

(i) Set the VOR 2/ADF 2 switch on the EFIS control panel to ADF 2.

1) Make sure that ADF 2 shows in the captain's display unit.

(j) Set the VOR 2/ADF 2 switch on the EFIS control panel to OFF.

1) Make sure that VOR 2 does not show in the captain's display unit.

2) Make sure that ADF 2 does not show in the captain's display unit.

(k) Set the display mode switch on the EFIS control panel to MAP.

NOTE: If the captain's display unit does not show the MAP data in the expanded mode, push CTR on the EFIS control panel.

(l) Set the range switch on the EFIS control panel to the values that follow (Table 509).

1) Make sure that the captain's display unit shows the corresponding mid-range value in the middle of the display.

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Table 509/31-62-00-993-810

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
5	2.5
10	5
20	10
40	20
80	40
160	80
320	160
640	320

(m) Set the range switch on the EFIS control panel to 40.

(n) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator shows on the captain's display unit.

NOTE: The TFC annunciator will show when the transponder mode selector on the transponder panel is in one of the two positions TA ONLY or TA/RA. And the reply selector on the transponder panel is in one of the two positions AUTO or ON.

(o) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator does not show on the captain's display unit.

(p) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator shows on the captain's display unit.

(q) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator does not show on the captain's display unit.

(r) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator shows on the captain's display unit.

(s) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator does not show on the captain's display unit.

(t) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator shows on the captain's display unit.

(u) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator does not show on the captain's display unit.

(v) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data shows on the captain's display unit.

NOTE: Waypoint data will not show unless an active route is installed in the flight management computer and the waypoint is within range.

(w) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data does not show on the captain's display unit.

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(x) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator shows on the captain's display unit.

(y) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator does not show on the captain's display unit.

(z) Set the outer knob on the MINS switch on the EFIS control panel to the BARO position.

1) Make sure that BARO shows on the captain's display unit.

(aa) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum BARO altitude increases and decreases on the captain's display unit.

(ab) Set the outer knob on the MINS switch on the EFIS control panel to the RADIO position.

1) Make sure that RADIO shows on the captain's display unit.

(ac) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum RADIO altitude increases and decreases on the captain's display unit.

(ad) Set the outer knob on the BARO switch on the EFIS control panel to the HPA position.

1) Make sure that the barometric pressure shows in hecto-pascals on the captain's display unit.

(ae) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(af) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases on the captain's display unit.

(ag) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that STD shows on the captain's display unit.

(ah) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(ai) Do these steps to do a test of the MTRS button on the EFIS control panel.

1) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude shows on the captain's display unit.

2) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude does not shows on the captain's display unit.

(aj) Push the FPV button on the EFIS control panel.

1) Make sure that flight path vector shows on the captain's display unit.

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SUBTASK 31-62-00-730-055

(3) Do these steps at the first officer's EFIS control panel.

(a) Set the display mode switch on the EFIS control panel to VOR.

1) Make sure that the VOR mode shows on the first officer's display unit.

(b) Set the display mode switch on the EFIS control panel to MAP.

1) Make sure that map mode shows on the first officer's display unit.

(c) Set the display mode switch on the EFIS control panel to PLN.

1) Make sure that plan mode shows on the first officer's display unit.

NOTE: The plan mode shows as a full rose compass with a north up orientation.

(d) Set the display mode switch on the EFIS control panel to APP.

1) Make sure that app mode shows on the first officer's display unit.

(e) Set the VOR 1/ADF 1 switch on the EFIS control panel to VOR 1.

1) Make sure that VOR 1 shows in the first officer's display unit.

(f) Set the VOR 1/ADF 1 switch on the EFIS control panel to ADF 1.

1) Make sure that ADF 1 shows in the first officer's display unit.

(g) Set the VOR 1/ADF 1 switch on the EFIS control panel to OFF.

1) Make sure that neither VOR 1 shows in the first officer's display unit.

2) Make sure that ADF 1 does not show in the first officer's display unit.

(h) Set the VOR 2/ADF 2 switch on the EFIS control panel to VOR 2.

1) Make sure that VOR 2 shows in the first officer's display unit.

(i) Set the VOR 2/ADF 2 switch on the EFIS control panel to ADF 2.

1) Make sure that ADF 2 shows in the first officer's display unit.

(j) Set the VOR 2/ADF 2 switch on the EFIS control panel to OFF.

1) Make sure that VOR 2 does not show in the first officer's display unit.

2) Make sure that ADF 2 does not show in the first officer's display unit.

(k) Set the display mode switch on the EFIS control panel to MAP.

NOTE: If the first officer's display unit does not show the MAP data in the expanded mode, push CTR on the EFIS control panel.

(l) Set the range switch on the EFIS control panel to the values that follow (Table 510).

1) Make sure that the first officer's display unit shows the corresponding mid-range value in the middle of the display.

Table 510/31-62-00-993-811

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
5	2.5
10	5
20	10

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Table 510/31-62-00-993-811 (Continued)

EFIS Range Switch Test	
Range Switch	**Mid-Range Value**
40	20
80	40
160	80
320	160
640	320

(m) Set the range switch on the EFIS control panel to 40.

(n) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator shows on the first officer's display unit.

NOTE: The TFC annunciator will show when the transponder mode selector on the transponder panel is in one of the two positions TA ONLY or TA/RA. And the reply selector on the transponder panel is in one of the two positions AUTO or ON.

(o) Push the TFC button on the EFIS control panel.

1) Make sure that the TFC annunciator does not show on the first officer's display unit.

(p) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator shows on the first officer's display unit.

(q) Push the STA button on the EFIS control panel.

1) Make sure that the STA annunciator does not show on the first officer's display unit.

(r) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator shows on the first officer's display unit.

(s) Push the WPT button on the EFIS control panel.

1) Make sure that the WPT annunciator does not show on the first officer's display unit.

(t) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator shows on the first officer's display unit.

(u) Push the ARPT button on the EFIS control panel.

1) Make sure that the ARPT annunciator does not show on the first officer's display unit.

(v) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data shows on the first officer's display unit.

NOTE: Waypoint data will not show unless an active route is installed in the flight management computer and the waypoint is within range.

(w) Push the DATA button on the EFIS control panel.

1) Make sure that the waypoint data does not show on the first officer's display unit.

(x) Push the POS button on the EFIS control panel.

1) Make sure that the IRS position indicator shows on the first officer's display unit.

(y) Push the POS button on the EFIS control panel.

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1) Make sure that the IRS position indicator does not show on the first officer's display unit.

(z) Set the outer knob on the MINS switch on the EFIS control panel to the BARO position.

1) Make sure that BARO shows on the first officer's display unit.

(aa) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum BARO altitude increases and decreases on the first officer's display unit.

(ab) Set the outer knob on the MINS switch on the EFIS control panel to the RADIO position.

1) Make sure that RADIO shows on the first officer's display unit.

(ac) Turn the inner knob on the MINS switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the minimum RADIO altitude increases and decreases on the first officer's display unit.

(ad) Set the outer knob on the BARO switch on the EFIS control panel to the HPA position.

1) Make sure that the barometric pressure shows in hecto-pascals on the first officer's display unit.

(ae) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(af) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases on the first officer's display unit.

(ag) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that STD shows on the first officer's display unit.

(ah) Push the that STD button on the BARO switch on the EFIS control panel.

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(ai) Do these steps to do a test of the MTRS button on the EFIS control panel.

1) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude shows on the first officer's display unit.

2) Push the MTRS button on the EFIS control panel.

a) Make sure that the metric altitude does not shows on the first officer's display unit.

(aj) Push the FPV button on the EFIS control panel.

1) Make sure that flight path vector shows on the first officer's display unit.

LOM ALL

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I. Display Select Module Test

SUBTASK 31-62-00-730-041

(1) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL.

SUBTASK 31-62-00-860-011

(2) Turn the knobs on the LOWER DU switches on the two display select modules to ENG PRI.

(a) Make sure that the engine format moves from the center upper display to the center lower display.

NOTE: The center upper display will be blank.

SUBTASK 31-62-00-860-012

(3) Turn the knobs on the LOWER DU switches on the two display select modules to NORM.

(a) Make sure that the engine format moves from the center lower display to the center upper display.

NOTE: The center lower display will be blank.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

SUBTASK 31-62-00-860-020

(4) Turn the knobs on the LOWER DU switches on the two display select modules to ND.

(a) Make sure that the navigation map shows on the center lower display unit.

LOM ALL

SUBTASK 31-62-00-860-021

(5) Turn the knobs on the LOWER DU switches on the two display select modules to NORM.

SUBTASK 31-62-00-860-013

(6) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to OUTBD PFD.

(a) Make sure that the displays show as follows:

LOM 404 PRE SB 737-31-1650

1) The two outboard display units show the compacted EFIS format.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

2) The two outboard display units show the PFD format.

LOM ALL

3) The two inboard display units are blank.

SUBTASK 31-62-00-860-022

(7) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to NORM.

(a) Make sure that the two outboard display units and the two inboard display units show the applicable flight data format.

SUBTASK 31-62-00-860-023

(8) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to INBD ENG PRI.

(a) Make sure that the displays show as follows:

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LOM 404 PRE SB 737-31-1650

1) The two outboard display units show the compacted EFIS format.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

2) The two outboard display units show the PFD format.

LOM ALL

3) The two inboard display units show the engine format.

4) The center upper display unit is blank.

SUBTASK 31-62-00-860-016

(9) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to INBD PFD.

(a) Make sure that the displays show as follows:

LOM 404 PRE SB 737-31-1650

1) The two inboard display units show the compacted EFIS format.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

2) The two inboard display units show the PFD format.

LOM ALL

3) The two outboard display units are blank.

4) The center upper display unit shows the engine format.

SUBTASK 31-62-00-860-017

(10) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to INBD MFD.

(a) Make sure that the display units show as follows:

LOM 404 PRE SB 737-31-1650

1) The two outboard display units show the compacted EFIS format.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-464; LOM 404, 465-999 POST SB 737-31-1650

2) The two outboard display units show the PFD format.

LOM ALL

3) The two inboard display units will show the same format that shows on the center lower display unit.

SUBTASK 31-62-00-860-018

(11) Turn the knobs on the MAIN PANEL DU switches on the two display select modules to NORM.

J. Instrument Switching Module Test

SUBTASK 31-62-00-730-060

(1) Set the display mode switch on the EFIS control panel to APP.

(a) Make sure that the ILS source identifier shows on the captain's display unit.

(b) Make sure that the ILS source identifier shows on the first officer's display unit.

SUBTASK 31-62-00-730-012

(2) Set the NAVIGATION VHF NAV switch on the instrument switching module to BOTH ON 1.

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(a) Make sure that the ILS source identifiers are all -1 on the captain's display unit.

(b) Make sure that the ILS source identifiers are all -1 on the first officer's display unit.

SUBTASK 31-62-00-730-013

(3) Set the NAVIGATION VHF NAV switch on the instrument switching module to BOTH ON 2.

(a) Make sure that the ILS source identifiers are all -2 on the captain's display unit.

(b) Make sure that the ILS source identifiers are all -2 on the first officer's display unit.

SUBTASK 31-62-00-730-067

(4) Set the display mode switch on the EFIS control panel to VOR.

(a) Make sure that the VOR source identifier shows on the captain's display unit.

(b) Make sure that the VOR source identifier shows on the first officer's display unit.

SUBTASK 31-62-00-730-068

(5) Set the NAVIGATION VHF NAV switch on the instrument switching module to BOTH ON 1.

(a) Make sure that the VOR source identifiers are all -1 on the captain's display unit.

(b) Make sure that the VOR source identifiers are all -1 on the first officer's display unit.

SUBTASK 31-62-00-730-069

(6) Set the NAVIGATION VHF NAV switch on the instrument switching module to BOTH ON 2.

(a) Make sure that the VOR source identifiers are all -2 on the captain's display unit.

(b) Make sure that the VOR source identifiers are all -2 on the first officer's display unit.

SUBTASK 31-62-00-730-059

(7) Set the display mode switch on the EFIS control panel to MAP.

(a) Make sure that map mode shows on the captain's display unit.

SUBTASK 31-62-00-730-014

(8) Set the NAVIGATION VHF NAV switch on the instrument switching module to NORMAL.

SUBTASK 31-62-00-730-015

(9) Set the NAVIGATION IRS switch on the instrument switching module to BOTH ON L.

(a) Make sure that the message INSTR SWITCH shows on captain's display unit.

(b) Make sure that the message INSTR SWITCH shows on the first officer's display unit.

SUBTASK 31-62-00-730-016

(10) Set the NAVIGATION IRS switch on the instrument switching module to BOTH ON R.

(a) Make sure that the message INSTR SWITCH shows on the captain's display unit.

(b) Make sure that the message INSTR SWITCH shows on the first officer's display unit.

SUBTASK 31-62-00-730-017

(11) Set the NAVIGATION IRS switch on the instrument switching module to NORMAL.

LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 PRE SB 737-31-1650 AND PRE SB 737-31A1880

SUBTASK 31-62-00-730-061

(12) Set the DISPLAYS SOURCE switch on the instrument switching module to ALL ON 1.

(a) Make sure that the message DSPLY SOURCE shows on the captain's display unit.

(b) Make sure that the message DSPLY SOURCE shows on the first officer's display unit.

SUBTASK 31-62-00-730-062

(13) Set the DISPLAYS SOURCE switch on the instrument switching module to ALL ON 2.

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LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 PRE SB 737-31-1650 AND PRE SB 737-31A1880 (Continued)

(a) Make sure that the message DSPLY SOURCE shows on the captain's display unit.

(b) Make sure that the message DSPLY SOURCE shows on the first officer's display unit.

LOM 402, 406, 407, 412, 415, 416, 423, 424, 426-431, 437-439, 441, 443-447, 455, 456, 458-999; LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 POST SB 737-31-1650 OR POST SB 737-31A1880

SUBTASK 31-62-00-730-018

(14) Set the DISPLAYS SOURCE switch on the instrument switching module to ALL ON 1.

(a) Make sure that the message DSPLY SOURCE 2 shows on the captain's display unit.

(b) Make sure that the message DSPLY SOURCE 2 shows on the first officer's display unit.

SUBTASK 31-62-00-730-019

(15) Set the DISPLAYS SOURCE switch on the instrument switching module to ALL ON 2.

(a) Make sure that the message DSPLY SOURCE 1 shows on the captain's display unit.

(b) Make sure that the message DSPLY SOURCE 1 shows on the first officer's display unit.

LOM ALL

SUBTASK 31-62-00-730-020

(16) Set the DISPLAYS SOURCE switch on the instrument switching module to AUTO.

SUBTASK 31-62-00-730-021

(17) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to BOTH ON 1.

(a) Do these steps at the left EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to IN.

a) Make sure that the barometric pressure shows in inches on the captain's display unit.

b) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(b) Do these steps at the right EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to HPA.

a) Make sure that the barometric pressure shows no changes on the captain's display unit.

b) Make sure that the barometric pressure shows no changes on the first officer's display unit.

SUBTASK 31-62-00-730-022

(18) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to BOTH ON 2.

(a) Do these steps at the first officer's EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to IN.

a) Make sure that the barometric pressure shows in inches on the captain's display unit.

b) Make sure that the barometric pressure shows in inches on the first officer's display unit.

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(b) Do these steps at the captain's EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to HPA.

a) Make sure that the barometric pressure shows no changes on the captain's display unit.

b) Make sure that the barometric pressure shows no changes on the first officer's display unit.

SUBTASK 31-62-00-730-023

(19) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL.

SUBTASK 31-62-00-730-024

(20) Set the display mode switch on the EFIS control panel to MAP.

(a) Make sure that the map modes show on both the captain's and first officer's display units.

LOM 402, 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999

SUBTASK 31-62-00-730-050

(21) Do these steps to test the FMC switch:

(a) Set the FMC switch on the instrument switching module to BOTH ON L.

1) Make sure that FMC L shows on the captain's and first officer's display units.

(b) Set the FMC switch on the instrument switching module to BOTH ON R.

1) Make sure that FMC R shows on the captain's and first officer's display units.

(c) Set the FMC switch on the instrument switching module to NORMAL.

LOM ALL

K. Engine Control Module Test

SUBTASK 31-62-00-730-028

(1) Turn the knobs on the LOWER DU switches on the two display switching modules to NORM.

(a) Make sure that the center upper display unit shows the engine format.

SUBTASK 31-62-00-730-042

(2) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to NORMAL.

SUBTASK 31-62-00-730-029

(3) Set the FUEL FLOW switch on the engine control module to USED.

(a) Make sure that the FF/FU displays show fuel quantity used.

NOTE: If there is no power to the EEC, then the fuel used indication will be zero.

SUBTASK 31-62-00-730-043

(4) Set the FUEL FLOW switch on the engine control module to RESET.

(a) Make sure that the FF/FU displays show fuel quantity used being reset to zero.

SUBTASK 31-62-00-730-030

(5) Set the FUEL FLOW switch on the engine control module to RATE.

(a) Make sure that the FF/FU displays show fuel flow rate.

NOTE: If there is no power to the EEC, then the fuel flow rate indication will be blank.

SUBTASK 31-62-00-730-032

(6) Set the outer knob on the N1 SET switch on the engine control module to 2.

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SUBTASK 31-62-00-730-033

(7) Turn the inner knob on the N1 SET switch on the engine control module counterclockwise to the second detent (left stop).

(a) Make sure that the number 2 N1 BUG moves in the counterclockwise direction.

NOTE: If the N1 BUG is at its display limit, rotate the knob in the direction that allows the bug to move.

SUBTASK 31-62-00-730-034

(8) Set the outer knob on the N1 SET switch on the engine control module to 1.

SUBTASK 31-62-00-730-035

(9) Turn the inner knob on the N1 SET switch on the engine control module counterclockwise to the second detent (left stop).

(a) Make sure that the number 1 N1 BUG moves in the counterclockwise direction.

SUBTASK 31-62-00-730-044

(10) Set the outer knob on the N1 SET switch on the engine control module to BOTH.

SUBTASK 31-62-00-730-045

(11) Turn the inner knob on the N1 SET switch on the engine control module clockwise to the first detent.

(a) Make sure that the number 1 and number 2 N1 BUGs move in the clockwise direction.

SUBTASK 31-62-00-730-064

(12) Set the outer knob on the N1 SET switch on the engine control module to the AUTO position.

SUBTASK 31-62-00-730-038

(13) Set the outer knob on the SPD REF switch on the engine control module to VR.

SUBTASK 31-62-00-730-039

(14) Turn the inner knob on the SPD REF switch on the engine control module clockwise to the second detent (right stop).

(a) Make sure that the VR digits on the captain's and first officer's display units increase in value.

SUBTASK 31-62-00-730-046

(15) Turn the inner knob on the SPD REF switch on the engine control module counterclockwise to the first detent.

(a) Make sure that the VR digits on the captain's and first officer's display units decrease in value.

SUBTASK 31-62-00-730-047

(16) Set the outer knob on the SPD REF switch on the engine control module to WT.

(a) Make sure that the WT digits show on the captain's and first officer's display units.

SUBTASK 31-62-00-730-040

(17) Set the outer knob on the SPD REF switch on the engine control module to AUTO.

SUBTASK 31-62-00-730-056

(18) Set the Main Panel DU switch on the Display Select Panel to INBD MFD.

SUBTASK 31-62-00-730-057

(19) Push the ENG key on the Engine Display Control Panel.

(a) Make sure that the inboard display unit shows the engine data.

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SUBTASK 31-62-00-730-058

(20) Push the SYS key on the Engine Display Control Panel.

(a) Make sure that the inboard display unit shows the systems data.

SUBTASK 31-62-00-730-066

(21) Set the Main Panel DU switch on the Display Select Panel to NORM.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DISPLAY UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of a display unit.

(2) An installation of a display unit, which includes an installation test.

B. There are six display units. Five of the display units are in the forward instrument panel. The five display units are installed with the latch mechanism at the bottom. The sixth display is the lower center display unit and is in the forward aisle stand. The lower center display unit is installed with the latch mechanism at the top.

TASK 31-62-11-000-801

2. Display Unit Removal

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)

B. Tools/Equipment

Reference	Description
STD-7394	Cap - Dust, Electrical Connector

C. Location Zones

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

D. Removal Procedure

SUBTASK 31-62-11-860-001

(1) For the applicable display unit open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	2	C01372	DISPLAY CTR UPR
D	3	C01365	DISPLAY CAPT INBD
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD
E	11	C01366	DISPLAY F/O INBD
E	12	C01373	DISPLAY CTR LWR

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-11-800-001

WARNING DEPRESSURIZE THE HYDRAULIC SYSTEMS BEFORE MOVING THE CONTROL COLUMN. MOVING PRESSURIZED COMPONENTS MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

(2) Make sure hydraulic power is removed from the flight controls before you move the control column. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-62-11-020-001

CAUTION DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE DISPLAY UNIT. A ELECTROSTATIC DISCHARGE CAN OCCUR AND DAMAGE THE DISPLAY UNIT.

(3) Do these steps to remove the display UNIT [1] from the instrument panel:

NOTE: The center lower display UNIT [1] is installed with the latch mechanism at the top. All other display UNIT [1] are installed with the latch mechanism at the bottom.

(a) Release the quarter turn fastener [2] on the handle [3] of the display UNIT [1].

(b) Pull the handle [3] to approximately 90 degrees from the face of the display UNIT [1].

(c) To remove the lower, middle display unit, move the speedbrake lever from the DOWN position to the UP position to give clearance.

(d) Pull the display UNIT [1] out carefully to remove it from the instrument panel.

(e) Push the handle [3] until it is flat against the face of the display UNIT [1].

(f) Turn and lock the quarter turn fastener [2] on the handle [3] of the display UNIT [1].

(g) Put protective covers (dust caps, STD-7394) on the electrical connectors.

(h) If you removed the lower, middle display unit, move the speedbrake lever from the UP position to the DOWN position.

1) Make sure the speedbrake lever is in the DOWN and locked position.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

Display Unit Installation
Figure 401/31-62-11-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-11-400-801

3. Display Unit Installation

(Figure 401)

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) The installation procedure includes an installation test. The installation test makes sure that the display UNIT [1] is connected correctly to ARINC 429 feedback busses.

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)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
31-62-00-710-801	Common Display System - Operational Test (P/B 501)
73-21-00-700-804-F00	EEC TEST (P/B 501)

C. Tools/Equipment

Reference	Description
STD-858	Tag - DO NOT OPERATE
STD-7394	Cap - Dust, Electrical Connector

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	UNIT	31-11-21-06-095	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 422-427, 429-434, 437-447, 450-999
		31-11-31-06-025	LOM ALL
		31-11-51-08-035	LOM ALL
		31-11-81-02-020	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420, 423, 424, 427, 431-434, 437-447, 450-999
		31-11-81-02-021	LOM 422, 425, 426, 428-430
		31-62-11-03-020	LOM 402, 404, 406
		31-62-11-03-105	LOM 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999
		31-62-11-03-155	LOM 407, 411, 412, 415, 416, 420, 423, 424, 427

E. Location Zones

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

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F. Installation Procedure

SUBTASK 31-62-11-860-002

(1) For the applicable display unit:

Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	2	C01372	DISPLAY CTR UPR
D	3	C01365	DISPLAY CAPT INBD
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD
E	11	C01366	DISPLAY F/O INBD
E	12	C01373	DISPLAY CTR LWR

SUBTASK 31-62-11-800-002

WARNING DEPRESSURIZE THE HYDRAULIC SYSTEMS BEFORE MOVING THE CONTROL COLUMN. MOVING PRESSURIZED COMPONENTS MAY CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

(2) Make sure that hydraulic power is removed from the flight controls before you move the control column. To remove hydraulic power, do this task: Hydraulic System A or B Power Removal, TASK 29-11-00-860-805.

SUBTASK 31-62-11-420-001

CAUTION DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE DISPLAY UNIT. A ELECTROSTATIC DISCHARGE CAN OCCUR AND DAMAGE THE DISPLAY UNIT.

(3) Do these steps to install the display unit:

NOTE: You must install the center lower display UNIT [1] with the latch mechanism at the top. You install all other display UNITS [1] with the latch mechanism at the bottom.

(a) Remove the protective covers (dust cap, STD-7394) from the electrical connectors.

(b) Examine the electrical connectors for bent or broken pins, dirt, and damage.

(c) Release the quarter turn fastener [2] on the handle [3] of the display UNIT [1].

(d) Pull the handle [3] to approximately 90 degrees from the face of the display UNIT [1].

(e) To install the lower, middle display unit, move the speedbrake lever from the DOWN position to the UP position to give clearance.

(f) Put the display UNIT [1] carefully into its position in the instrument panel.

(g) Push the display UNIT [1] forward until it stops.

(h) Push the handle [3] until it is flat against the face of the display UNIT [1].

(i) Turn and lock the quarter turn fastener [2] on the handle [3] of the display UNIT [1].

(j) If you installed the lower, middle display unit, move the speedbrake lever from the UP position to the DOWN position.

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1) Make sure that the speedbrake lever is in the DOWN and locked position.

SUBTASK 31-62-11-860-003

(4) For the applicable display unit:

Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	2	C01372	DISPLAY CTR UPR
D	3	C01365	DISPLAY CAPT INBD
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD
E	11	C01366	DISPLAY F/O INBD
E	12	C01373	DISPLAY CTR LWR

SUBTASK 31-62-11-800-003

(5) Make sure that the engine start levers on the P8 aisle stand are in the CUTOFF position, and install DO NOT OPERATE tags, STD-858.

G. Installation Test

SUBTASK 31-62-11-860-004

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

SUBTASK 31-62-11-860-005

(2) If you installed the lower center display unit, then do this step:

(a) Set the LOWER DU switch on the captain's display select module to the ENG PRI position.

SUBTASK 31-62-11-710-001

(3) Make sure the applicable display UNIT [1] is not blank.

(a) Set the LOWER DU switch on the captain's display select module to the NORM position.

LOM 412, 415, 416, 420, 423, 424, 427, 428, 437-439, 441, 443-445, 450, 458-460, 464-999

(4) If you installed the lower-center multi-function display (MFD), then do these steps:

(a) Make sure that the Flight Deck Entry Video Surveillance System (FDEVSS) can show on the lower-center MFD.

NOTE: Video-capable MFDs are required.

1) Make sure that the P5-13 IFE/PASS SEAT switch in the flight deck is in the ON position.

2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

Row	Col	Number	Name
LOM 412, 415, 416, 423, 424, 427, 428, 437-439, 441, 443-445, 450, 458-460, 464-999			
B	1	C01641	SURVEILLANCE CAMERA

LOM 412, 415, 416, 420, 423, 424, 427, 428, 437-439, 441, 443-445, 450, 458-460, 464-999

3) Press the DSPL button on the Camera Control Panel (CCP), M3000.

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4) Make sure that a video image appears on the lower-center MFD.

LOM 402, 406, 407, 458-460

SUBTASK 31-62-11-860-008

(5) If one vertical side line of the digital display box for the engine indications showed in RED before engines started.

(a) Do one of these steps to reset the red engine indications to white.

1) Do this task: EEC TEST, TASK 73-21-00-700-804-F00.

2) Setting the two of the engine start switches to CONT for 30 seconds or more.

(b) Make sure that the red bars on the secondary engine display are replaced with the white bars.

NOTE: The red engine indication function only applied to the Over/Under engine indication format.

LOM ALL

SUBTASK 31-62-11-710-002

(6) To do the display unit operational test (optional), do this task: Common Display System - Operational Test, TASK 31-62-00-710-801.

SUBTASK 31-62-11-860-006

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

(8) Make sure that the engine start levers on the P8 aisle stand are in the CUTOFF position, and remove DO NOT OPERATE tags, STD-858.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DISPLAY UNIT - CLEANING/PAINTING

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has these tasks:

(1) How to clean the display surface.

(2) How to clean the display unit light sensor.

(3) How to clean the display unit cooling air inlet screen.

C. There are six display units. Five of the display units are in the forward instrument panel. The sixth display is the center lower display unit and is in the forward aisle stand.

D. These procedures are the same for all six display units.

TASK 31-62-11-100-801

2. How to Clean the Display Surface

A. General

(1) This task has two procedures to clean the display surface. It is necessary to use only one of the two procedures.

B. Tools/Equipment

Reference	Description
STD-123	Brush - Soft Bristle

C. Consumable Materials

Reference	Description	Specification
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	

D. Location Zones

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

E. Procedure to Use Alglas Visial Wet/Dry Anti-Static Sachet

SUBTASK 31-62-11-100-008

> **CAUTION**
> USE ONLY THE RECOMMENDED CLEANERS TO CLEAN THE DISPLAY. DO NOT USE ABRASIVE MATERIALS. DO NOT TOUCH THE GLASS WITH YOUR BARE SKIN. DO NOT USE TOO MUCH FORCE WHEN YOU CLEAN THE DISPLAY SURFACE. OTHER CLEANERS, ABRASIVE MATERIALS, OR BARE SKIN WILL CAUSE DAMAGE TO THE DISPLAY SURFACE. TOO MUCH FORCE WILL CAUSE DAMAGE TO THE DISPLAY.

(1) Remove all particles from the display surface with a clean, soft, natural-bristle soft bristle brush, STD-123.

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SUBTASK 31-62-11-100-009

(2) Clean the display surface with the wet and dry anti-static sachets (ALGLAS Visial cleaner, G02457):

(a) Use the wet sachet to carefully clean the display surface in a straight line from top to bottom.

(b) Gradually move from one side of the display surface to the other side while you clean from top to bottom.

(c) When the display surface is clean, use the dry sachet in a straight line from top to bottom to carefully dry the display surface.

F. Procedure to Use Supaspray and Supacloth

SUBTASK 31-62-11-100-010

CAUTION	USE ONLY THE RECOMMENDED CLEANERS TO CLEAN THE DISPLAY. DO NOT USE ABRASIVE MATERIALS. DO NOT TOUCH THE GLASS WITH YOUR BARE SKIN. DO NOT USE TOO MUCH FORCE WHEN YOU CLEAN THE DISPLAY SURFACE. OTHER CLEANERS, ABRASIVE MATERIALS, OR BARE SKIN WILL CAUSE DAMAGE TO THE DISPLAY SURFACE. TOO MUCH FORCE WILL CAUSE DAMAGE TO THE DISPLAY.

(1) Remove all particles from the display surface with a clean, soft, natural-bristle soft bristle brush, STD-123.

SUBTASK 31-62-11-100-011

(2) Clean the display surface with the Supaspray cleaner, B50012, and a Supacloth cloth, B50013:

(a) Apply 2 or 3 sprays of the Supaspray cleaner, B50012, to the Supacloth cloth, B50013.

(b) Use the moist cloth to carefully 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 Supacloth cloth, B50013, in a straight line from top to bottom to carefully dry the display surface.

——— END OF TASK ———

TASK 31-62-11-100-802

3. How to Clean the Display Unit Light Sensor

A. Tools/Equipment

Reference	Description
STD-123	Brush - Soft Bristle

B. Location Zones

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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

C. Procedure

SUBTASK 31-62-11-100-006

(1) Remove all grit, dirt, and sand from the light sensor with a clean, soft, soft bristle brush, STD-123.

——— END OF TASK ———

TASK 31-62-11-100-803

4. How to Clean the Holes on the Rear of the Display Unit

NOTE: This procedure is a scheduled maintenance task.

A. References

Reference	Title
31-62-11-000-801	Display Unit Removal (P/B 401)
31-62-11-400-801	Display Unit 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 #: 106542 Supplier: 3LFF2 Part #: AVIATION VAC 106542 Supplier: 03FQ4 Part #: AVQ250-2 Supplier: U1761 Part #: AVQ350-2 Supplier: 03FQ4 Part #: RSAV130 Supplier: $1291 Part #: RSV150 Supplier: U1761 Opt Part #: 02146A Supplier: 0A5X2 Opt Part #: 44SPEC Supplier: 0Y8U0 Opt Part #: 655406-7M Supplier: 0Y8U0 Opt Part #: BP80 Supplier: $0373 Opt Part #: C-39485-41 Supplier: 16893 Opt Part #: C-39485-42 Supplier: 16893 Opt Part #: MORCLEAN 300/15D Supplier: $1316 Opt Part #: R80 Supplier: $0373 Opt Part #: RSV130 Supplier: $1291 Opt Part #: WD80 Supplier: $0373

C. Location Zones

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

D. Display Unit Ventilation Holes Cleaning

SUBTASK 31-62-11-010-001

(1) Do this task: Display Unit Removal, TASK 31-62-11-000-801.

SUBTASK 31-62-11-210-001

(2) Examine the air holes on the rear of the display unit.

SUBTASK 31-62-11-100-012

(3) If contamination causes a blockage of more than 50 percent of the holes, clean the holes on the rear of the display units.

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SUBTASK 31-62-11-100-007

CAUTION	DO NOT USE COMPRESSED AIR TO CLEAN THE HOLES ON THE REAR OF THE DISPLAY UNIT. COMPRESSED AIR WILL PUSH CONTAMINATION INTO THE DISPLAY UNIT. THIS CAN CAUSE DAMAGE TO THE EQUIPMENT.

(4) Do this step to clean the holes on the rear of the display unit.

(a) Remove all lint, dust, and debris from the air inlet and exhaust holes on the rear of the display unit with a vacuum cleaner, COM-2618.

SUBTASK 31-62-11-410-001

(5) Do this task: Display Unit Installation, TASK 31-62-11-400-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

EFIS CONTROL PANEL - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of an EFIS control panel.

(2) An installation of an EFIS control panel, which includes an installation test.

B. There are two EFIS control panels installed on the glareshield panel, P7 in the flight compartment. The captain's EFIS control panel is on the left side of the P7 panel. The first officer's EFIS control panel is on the right side of the P7 panel.

TASK 31-62-12-000-801

2. EFIS Control Panel Removal

(Figure 401)

A. References

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

B. Location Zones

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

C. Removal of the EFIS Control Panel

SUBTASK 31-62-12-860-001

(1) For the applicable control panel:

Open these circuit breakers and install safety tags:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	1	C01369	DISPLAY CAPT EFIS CONT PANEL

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	13	C01370	DISPLAY F/O EFIS CONT PANEL

SUBTASK 31-62-12-860-002

(2) On the captain's main instrument panel, P1, turn the knob of the PANEL control to the OFF position.

SUBTASK 31-62-12-010-001

(3) Do these steps to get access to the electrical connector [5] for the EFIS control panel [3].

(a) Loosen the eight quarter-turn fasteners [1] that hold the glareshield access panel [2] to the glareshield, P7.

(b) Remove the glareshield access panel [2].

SUBTASK 31-62-12-020-001

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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-12-020-002

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

(5) Do these steps to remove the EFIS control panel [3]:

(a) Remove the four screws [4] that attach the EFIS control panel [3] to the bottom of the glareshield.

(b) Carefully pull the EFIS control panel [3] approximately four inches aft to get access to the electrical connector [5].

(c) Disconnect the electrical connector [5].

NOTE: You can get access to the electrical connector from above the EFIS control panel.

(d) Remove the EFIS control panel [3].

(e) Put a protective cover on the electrical connector.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

EFIS Control Panel Installation
Figure 401/31-62-12-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-12-400-801

3. EFIS Control Panel Installation

(Figure 401)

A. References

Reference	Title
20-40-12-400-802	ESDS Handling for Metal Encased Unit Installation (P/B 201)

B. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	EFIS control panel	31-11-41-02-015	LOM ALL
		31-62-12-01-005	LOM ALL

C. Location Zones

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

D. Installation of the EFIS Control Panel

SUBTASK 31-62-12-860-003

(1) For the applicable control panel:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	1	C01369	DISPLAY CAPT EFIS CONT PANEL

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	13	C01370	DISPLAY F/O EFIS CONT PANEL

SUBTASK 31-62-12-420-001

(2) Before you touch the EFIS control panel [3], do this task: ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802.

SUBTASK 31-62-12-420-002

CAUTION

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

(3) Do these steps to install the EFIS control panel [3]:

(a) Remove the protective cover from the electrical connector [5].

(b) Examine the electrical connector [5] for bent or broken pins, dirt, and damage.

(c) Put the EFIS control panel [3] carefully into its position in the glareshield.

(d) Do these steps to connect the electrical connector [5].

1) Move the EFIS control panel [3] forward until the electrical connector [5] can touch the EFIS control panel [3].

NOTE: You can get access to the electrical connector from above the EFIS control panel.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) Connect the electrical connector [5].

(e) Push the EFIS control panel [3] forward until it stops.

(f) Install the four screws [4] that attach the EFIS control panel [3] to the bottom of the glareshield.

LOM 422, 425, 427, 428, 432-434, 437, 438, 440, 442-447, 451-457

(g) Install an INOP marker over the ADF 2 position on the EFIS control panel [3].

LOM ALL

SUBTASK 31-62-12-410-001

(4) Install the glareshield access panel [2] on top of the glareshield panel.

(a) Put the glareshield access panel [2] in place on top of the glareshield panel.

(b) Tighten the eight quarter-turn fasteners [1] on the glareshield access panel [2].

SUBTASK 31-62-12-860-004

(5) For the applicable control panel:

Remove the safety tags and close these circuit breakers:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	1	C01369	DISPLAY CAPT EFIS CONT PANEL

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	13	C01370	DISPLAY F/O EFIS CONT PANEL

SUBTASK 31-62-12-860-005

(6) On the captain's main instrument panel, P1, turn the knob of the PANEL control to the middle position.

E. Installation Test

SUBTASK 31-62-12-860-006

(1) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to the NORMAL position.

SUBTASK 31-62-12-750-001

(2) Do these steps at the captain's EFIS control panel:

(a) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

1) Make sure that the barometric pressure shows in inches on the captain's display unit.

(b) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases.

(c) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that the STD shows on the captain's display unit.

NOTE: This selects the standard baro setting of 29.92 inches or 1013 hPa.

SUBTASK 31-62-12-750-002

(3) Do these steps at the first officer's EFIS control panel:

(a) Set the outer knob on the BARO switch on the EFIS control panel to the IN position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

1) Make sure that the barometric pressure shows in inches on the first officer's display unit.

(b) Turn the inner knob on the BARO switch on the EFIS control panel clockwise and counterclockwise.

1) Make sure that the barometric pressure increases and decreases.

(c) Push the STD button on the BARO switch on the EFIS control panel.

1) Make sure that the STD shows on the first officer's display unit.

NOTE: This selects the standard baro setting of 29.92 inches or 1013 hPa.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LIGHTING CONTROL MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the lighting control module.

(2) An installation of the lighting control module.

B. The two lighting control modules are on the main instrument panels. The captain's lighting control module is on the captain instrument panel, P1, in the flight compartment. The first officer's lighting control module is on the first officer's instrument panel, P3, in the flight compartment.

TASK 31-62-13-000-801

2. Lighting Control Module Removal

(Figure 401)

A. Location Zones

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

B. Lighting Control Module Removal

SUBTASK 31-62-13-860-001

(1) 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
B	10	C00335	PANEL & INSTR 28V PRI F/O
D	8	C00701	EMER PANEL LTG

SUBTASK 31-62-13-020-001

CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE LIGHTING CONTROL MODULE. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE LIGHTING CONTROL MODULE.

(2) Remove the lighting control module [1]:

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

(b) Carefully lift the lighting control module [1] from the main instrument panel to get access to the electrical connector [3].

(c) Disconnect the electrical connector [3].

(d) Put protective covers on the electrical connector [3].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FLIGHT COMPARTMENT

H59333 S0006574611_V2

Lighting Control Module Installation
Figure 401/31-62-13-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-13-400-801

3. Lighting Control Module Installation
(Figure 401)

A. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Lighting control module	31-62-13-03-050	LOM ALL
		31-62-13-03-100	LOM ALL

B. Location Zones

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

C. Lighting Control Module Installation

SUBTASK 31-62-13-860-002

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR
B	10	C00335	PANEL & INSTR 28V PRI F/O
D	8	C00701	EMER PANEL LTG

SUBTASK 31-62-13-420-001

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

(2) Install the lighting control module [1]:

(a) Remove the protective covers from the electrical connector [3].

(b) Examine the electrical connector [3] for bent or broken pins, dirt, and damage.

(c) Connect the electrical connector [3].

(d) Put the lighting control module [1] in its position on the main instrument panel.

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

SUBTASK 31-62-13-860-003

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

F/O Electrical System Panel, P6-3

Row	Col	Number	Name
B	9	C00331	PANEL & INSTR 28V PRI CAPT & CTR
B	10	C00335	PANEL & INSTR 28V PRI F/O
D	8	C00701	EMER PANEL LTG

D. Installation Test

SUBTASK 31-62-13-860-005

(1) Make these selections on the Control Display Unit (CDU):

(a) Push the INIT REF key.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Push the Line Select Key (LSK) adjacent to INDEX.

(c) Push the LSK adjacent to MAINT.

(d) Push the LSK adjacent to CDS.

(e) Push the LSK adjacent to DEU 1.

(f) Push the LSK adjacent to GROUND TESTS.

(g) Push the LSK adjacent to DU LOOP TEST.

(h) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

SUBTASK 31-62-13-710-001

(2) Make sure that all six Display Unit (DU)s show the test format (Table 401).

Table 401/31-62-13-993-801 Display Unit Test Format DEU 1 selected coupler #1

Display Unit Test Format DEU 1 selected coupler #1 to left DUs coupler #2 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	1	1	1	2	2	2
INPUT ACTIVITY	[Y]YYY	[Y]YYY	[Y]YYY	Y[Y]YY	Y[Y]YY	Y[Y]YY
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

SUBTASK 31-62-13-710-002

(3) Turn the outer OUTBD BRT control on the captain's lighting control module [1].

(a) Make sure that the UNIT value that shows on the captain's outboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-13-710-003

(4) Turn the outer OUTBD BRT control on the first officer's lighting control module [1].

(a) Make sure that the UNIT value that shows on the first officer's outboard DU changes.

NOTE: The value will increase when you turn the control clockwise in the range of 0 to 100.

SUBTASK 31-62-13-860-006

(5) Push the INIT REF key on the CDU to stop the test.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

INSTRUMENT SWITCHING MODULE - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of the instrument switching module.

(2) An installation of the instrument switching module.

B. The instrument switching module is on the forward overhead panel, P5, in the flight compartment.

TASK 31-62-14-000-801

2. Instrument Switching Module Removal

(Figure 401)

A. Location Zones

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

B. Removal Procedure

SUBTASK 31-62-14-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	2	C00412	INSTR XFR

SUBTASK 31-62-14-860-002

(2) On the forward overhead panel, P5, turn the knob of the PANEL control to the OFF position.

SUBTASK 31-62-14-020-001

CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE INSTRUMENT SWITCHING MODULE. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE INSTRUMENT SWITCHING MODULE.

(3) Remove the INSTRUMENT SWITCHING MODULE [1]:

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

(b) Carefully lift the instrument switching module from the forward overhead panel, P5, 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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Instrument Switching Module Installation
Figure 401/31-62-14-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-14-400-801

3. Instrument Switching Module 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	INSTRUMENT SWITCHING MODULE	31-11-94-07B-160	LOM 423, 424
		31-11-94-07N-610	LOM 420
		31-11-94-07P-160	LOM 407
		31-11-94-08E-610	LOM 411, 426
		31-11-94-12-610	LOM 402, 404, 406, 416
		31-11-94-18P-160	LOM 422, 425
		31-11-94-23-365	LOM 412, 415
		31-62-14-01-015	LOM ALL

C. Location Zones

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

D. Installation Procedure

SUBTASK 31-62-14-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	2	C00412	INSTR XFR

SUBTASK 31-62-14-420-001

CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE INSTRUMENT SWITCHING MODULE. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE INSTRUMENT SWITCHING MODULE.

(2) Install the INSTRUMENT SWITCHING MODULE [1]:

(a) Remove the protective covers from the electrical connectors [3].

(b) Examine the electrical connectors [3] for bent or broken pins, dirt, and damage.

(c) Connect the electrical connectors [3].

(d) Put the INSTRUMENT SWITCHING MODULE [1] in its position on the forward overhead panel, P5.

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

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-14-860-004

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
E	2	C00412	INSTR XFR

E. Installation Test

SUBTASK 31-62-14-860-005

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

SUBTASK 31-62-14-730-001

(2) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to the BOTH ON 1 position.

(a) Do these steps at the captain's EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to IN.

a) Make sure the barometric pressure shows in inches on the captain's display unit.

b) Make sure the barometric pressure shows in inches on the first officer's display unit.

(b) Do these steps at the first officer's EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to HPA.

a) Make sure the barometric pressure shows no changes on the captain's display unit.

b) Make sure the barometric pressure shows no changes on the first officer's display unit.

SUBTASK 31-62-14-730-002

(3) Set the CONTROL PANEL switch on the instrument switching module to the BOTH ON 2 position.

(a) Do these steps at the first officer's EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to IN.

a) Make sure the barometric pressure shows in inches on the captain's display unit.

b) Make sure the barometric pressure shows in inches on the first officer's display unit.

(b) Do these steps at the captain's EFIS control panel.

1) Set the outer knob on the BARO switch on the EFIS control panel to HPA.

a) Make sure the barometric pressure shows no changes on the captain's display unit.

b) Make sure the barometric pressure shows no changes on the first officer's display unit.

SUBTASK 31-62-14-730-003

(4) Set the DISPLAYS CONTROL PANEL switch on the instrument switching module to the NORMAL position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-14-860-006

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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DISPLAY ELECTRONIC UNIT - MAINTENANCE PRACTICES

1. **General**

A. This procedure contains these tasks:

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

(1) An installation of the Display Electronic Unit (DEU) software with an Airborne Data Loader (ADL).

(2) A task to send BITE data from the DEUs to a diskette in the ADL.

LOM 429-431, 440, 442-447, 450-460, 464-999

(3) An installation of the DEU software with an enhanced ADL (eADL).

(4) A task to send BITE data from the DEUs to media in the (eADL).

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

(5) An installation of the DEU software with a Portable Data Loader (PDL).

(6) A task to send BITE data from the DEUs to a diskette in the PDL.

LOM ALL

B. For general information for software installation times and data loaders, do this task: On-Airplane Software - Installation, TASK 20-15-11-400-801.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

TASK 31-62-21-470-801

2. **Display Electronic Unit Software - Installation with an Airborne Data Loader**

A. General

(1) This procedure tells you how to install software in the display electronic unit 1 (DEU-1) and display electronic unit 2 (DEU-2).

(a) The DEU-1 and DEU-2 contain these pieces of software:

1) operational program software (OPS)

2) operational program configuration (OPC)

3) display unit database (DU DB).

(2) If you will install a new OPS, then install it before you install other DEU software.

(3) You can install the OPC or DU DB in any sequence after the OPS is installed.

(4) If you install the OPS part number that is already installed in the DEU, then the DEU will do a short load. The data transfer time for a short load is significantly less than the data transfer for a new software part number.

(5) You must install software in one DEU at a time. There is no crossover-load function for the DEUs.

(6) An Airborne Data Loader (ADL) and a data loader control panel are necessary for this procedure. The data loader control panel is installed above the airborne data loader on the P61 panel.

(7) The airplane must be on the ground with the engines shutdown before you can install software.

(8) 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.

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LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438 (Continued)

(9) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software - Installation (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment - Right

D. Display Electronic Unit Software Installation with an Airborne Data Loader Procedure

SUBTASK 31-62-21-860-020

(1) Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

NOTE: Some airlines keep the circuit breaker for the data loader open when the data loader is not necessary to increase the length of time that the data loader is serviceable.

SUBTASK 31-62-21-860-006

(2) Use an ADL to install software in the applicable DEU.

NOTE: Make sure that you know the correct software part number for the applicable DEU. For the DEU to be an approved installation, the correct software part numbers must be installed.

NOTE: Different part numbers for DEU-1 and DEU-2 may require different software part numbers. See the notes for the applicable DEU part number(s) in the Illustrated Parts Catalogue (IPC).

NOTE: It is preferred that the ADL be compliant with ARINC 645. Floppy disk loaders are going obsolete, thus, procedures for these loaders are now marked as non-preferred and will be removed in the future. Modern software loaders that meet the security requirements defined in ARINC 645 are recommended to be used now. The procedures for modern software loaders will be marked as preferred for now and will be the only procedures available after removing floppy disk loaders procedures in the future.

SUBTASK 31-62-21-860-007

(3) Do these steps to prepare for the software installation:

(a) Set the system select switch on the data loader control panel (P61) to the NORMAL (NORM) position.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(b) Do these steps at the data loader control panel:

1) Set the upper switch to the L position for DEU 1 or to the R position for DEU 2.

2) Set the system select switch to the DEU position.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

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(c) Continue the procedure.

NOTE: The DEU will go into a software load condition when you put the system select switch on the data loader control panel in the DEU position. The displays can be blank or show a CDS FAULT message. After you put the system select switch to the NORMAL position, it can take approximately 2 minutes for the DEU to come back from its software load condition.

SUBTASK 31-62-21-470-009

(4) Do this step to install the software - (Preferred):

(a) Follow the generic ADL procedure to load software part (TASK 20-15-11-400-801).

SUBTASK 31-62-21-420-002

(5) Do these steps at the airborne data loader to install the software - (Non-Preferred):

(a) Put the correct media in the drive.

NOTE: When you put the disk in the disk drive, the data loader can read a part of the disk. Then, show no signs of a load sequence for 2 to 7 minutes. During this 2 to 7 minutes, the DEU will process data internally. After the 2 to 7 minutes, the data loader will continue to install the software.

CAUTION	DO NOT STOP THE DATA LOAD UNLESS THE DATA LOADER SHOWS LOAD FAILED OR LOAD COMPLETE. IF THE POWER STOPS AND STARTS DURING THE LOAD, THE DATA LOADER WILL TRY TO COMPLETE THE DATA LOAD. DURING THE RECOVERY, THE DATA LOADER CAN SHOW NO DISK ACTIVITY OR FILE TRANSFERS FOR A LONG TIME. GIVE THE DATA LOADER 10 TO 15 MINUTES TO COMPLETE THE LOAD. IF YOU STOP THE DATA LOAD BEFORE IT IS DONE, YOU CAN CAUSE DAMAGE TO THE UNIT.

(b) Follow the prompts on the data loader to complete the installation.

1) If there is more than one piece of media to install, wait 10 seconds after each load is completed before you remove and install the subsequent media.

NOTE: CHNG, CHANGE DISK, DISK CHANGE and INSERT DISK are examples of data loader prompts for a subsequent disk.

(c) Remove the media from the drive when the software installation is completed.

NOTE: COMP, LOAD COMPLETE and TRANSF COMPLETE are examples of data loader prompts for a completed installation.

SUBTASK 31-62-21-420-003

(6) Do these steps to do a software configuration check of the DEU:

(a) Set the system select switch on the data loader control panel (P61) to the NORMAL (NORM) position.

NOTE: It can take approximately 2 minutes for the DEU to come back from its software load condition.

(b) If you are not at one of the CDS DEU BITE displays, then do these steps:

1) Push the INIT REF function key on the CDU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

2) If the POS INIT display shows, then push the line select key next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the line select key next to the MAINT prompt.

(c) From the MAINT BITE INDEX, push the line select key next to the CDS prompt.

(d) Push the line select key next to the applicable DEU prompt.

(e) Push the line select key next to the IDENT/CONFIG prompt.

1) When the software installation is completed, make sure the correct part number shows on the display.

——— END OF TASK ———

TASK 31-62-21-470-803

3. BITE Data Output from the DEUs to an Airborne Data Loader

A. General

(1) This procedure contains the steps to send BITE data from the display electronic unit 1 (DEU-1) and display electronic unit 2 (DEU-2) to a disk in the airborne data loader. You can keep the data on the disk and examine it at a different time.

(2) An airborne data loader (ADL) and a special disk from Honeywell are necessary for this procedure. The disk part number is PS4081944-103.

NOTE: Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

(3) The necessary files are DEUII.REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB).

(4) The airplane must be on the ground with the engines shutdown before you can do the BITE data output.

(5) If necessary, send the disk or disks with BITE data to Boeing or Honeywell for analysis.

NOTE: If you send the BITE data to Boeing or Honeywell by email, these are the files you send.

The three files for DEU P/N 4081600–930 are BITESRAM.BIN, EEXNY.BIN, and OCH.BIN.

The three files for DEU P/N 4081600–940 are D2BHDRAM.DMP, D2BHXEE.DMP, and D2NRBHLI.DMP.

(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. Make sure this circuit breaker is closed before you start the procedure:

Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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
212	Flight Compartment - Right

D. Procedure

SUBTASK 31-62-21-860-014

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

SUBTASK 31-62-21-860-037

(2) Do these steps for safestoring the DEU ground faults:

NOTE: If the BITE data you will download has faults from a test on the ground, safestore the BITE DATA to the DEU.

(a) On the MAINT BITE INDEX page select CDS.

(b) On the CDS BITE page select DEU 1 or DEU 2 if applicable.

(c) On the CDS DEU X BITE page select GROUND TEST.

(d) On the CDS DEU X MAINT/BITE page select the DEU X SELF-TEST.

(e) Select RUN SELF-TEST.

NOTE: The self-test can take up to 3 minutes. At this time the MCDU page will show : DEU SELF-TEST (3 MIN) OR DEU-X BITE INOP CHECK DEU OR INTERFACE. Do not be concerned with this message the test page will read: SELF-TEST IN PROGRESS.

(f) At the end of the SELF-TEST the test page will show PASSED or FAILED.

(g) To exit the test select INDEX.

SUBTASK 31-62-21-860-015

(3) Do these steps to prepare for the BITE data output:

(a) Record the fault history from the applicable DEU.

1) From the MAINT BITE INDEX, push the line select key next to the CDS prompt.

2) For DEU-1 CDS BITE, push the line select key next to the DEU-1 prompt.

3) For DEU-2 CDS BITE, push the line select key next to the DEU-2 prompt.

4) Do these steps to look for maintenance messages in CURRENT STATUS:

a) Push the line select key next to the CURRENT STATUS prompt.

NOTE: If there are active faults detected by the applicable DEU, you will see a maintenance message number and the maintenance message text.

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LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438 (Continued)

b) If there are any maintenance messages, then refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

NOTE: The number of maintenance messages that are in Current Status are shown in the upper right corner of the display. You can use the PREV PAGE and NEXT PAGE buttons to move from one maintenance message to another.

c) If NO FAULTS shows for DEU 1 and 2, then do these steps:

NOTE: There are no faults that are currently active.

<1> Push the line select key next to the INDEX prompt.

NOTE: This will bring you back to the CDS DEU BITE main menu.

<2> Do the steps that follow to look for maintenance messages in the INFLIGHT FAULTS menu selection.

5) If there are no maintenance messages in CURRENT STATUS for both DEU 1 and 2, then do these steps to look for maintenance messages in INFLIGHT FAULTS for both DEU 1 and 2:

a) Push the line select key next to the INFLIGHT FAULTS prompt.

b) Push the line select key next to the prompt for the flight leg (LEG) during which the fault occurred.

NOTE: The most recent flight leg is LEG 01.

c) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

NOTE: The number of maintenance messages that are in Current Status are shown in the upper right corner of the display. You can use the PREV PAGE and NEXT PAGE buttons to move from one maintenance message to another.

6) Push the line select key next to the INDEX prompt twice to return to the CDS DEU BITE Main Menu.

(b) Set the system select switch on the data loader control panel (P61) to NORM or NORMAL.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(c) Do these steps at the data loader control panel:

1) Set the upper switch to L.

2) Set the system select switch to DEU.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

(d) Continue the procedure.

NOTE: The DEU will go into a software load condition when you put the system select switch on the data loader control panel in the DEU position. The displays can be blank or show a CDS FAULT message. After you put the system select switch in the NORMAL position, it can take approximately 2 minutes for the DEU to come back from its software load condition.

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LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438 (Continued)

SUBTASK 31-62-21-420-006

(4) Do these steps to do the BITE data output:

NOTE: For more information on how to use the data loader, refer to the supplier's instruction for the data loader. The necessary files are DEUII.REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB).

(a) Put a disk in the disk drive.

NOTE: You must use a special Honeywell disk, P/N PS4081944-103, to send data to the disk drive. This updated download diskette set will support DEU-I and DEU-II. Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

(b) Remove the disk from the disk drive when the data output for DEU 1 is completed.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(c) Set the upper switch to R.

LOM 402, 404, 406, 407, 411, 416, 420, 422, 425, 426, 432-434, 437, 438

(d) Put a new disk in the disk drive.

NOTE: You must use a special Honeywell disk, P/N PS4081944-103, to send data to the disk drive. This updated download diskette set will support DEU-I and DEU-II. Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email. The necessary files are DEUII.REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB).

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

(e) Remove the disk from the disk drive when the data output for DEU 2 is completed.

SUBTASK 31-62-21-860-016

(5) Do these steps to put the airplane back to its usual condition:

(a) Set the system select switch on the data loader control panel to NORM or NORMAL.

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

END OF TASK

LOM 429-431, 440, 442-447, 450-460, 464-999

TASK 31-62-21-470-805

4. Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL)

A. General

(1) This task provides the instructions on how to install software in the DEU-1 and DEU-2.

(a) DEU-1 should be loaded with the DEU-1 OPS and DEU-2 should be loaded with the DEU-2 OPS.

(b) The DEU-1 and DEU-2 contain these pieces of software:

1) Operational Program Software (OPS)

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LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

2) Operational Program Configuration (OPC)

3) Display Unit Database (DUDB)

(2) If you will install a new OPS, then install it before you install other DEU software.

(3) You can install the OPC or DUDB in any sequence after the OPS is installed.

(4) If you install the OPS part number that is already installed in the DEU, then the DEU will do a short load. The data transfer time for a short load is significantly less than the data transfer for a new software part number.

(5) An enhanced Airborne Data Loader (eADL) and a data loader control panel are necessary for this procedure. The data loader control panel is installed above the eADL on the P61 panel.

(6) The eADL software installation:

LOM 429-431, 440, 442-447, 450-460, 464, 465

(a) Floppy Disk Software Installation

LOM 429-431, 440, 442-447, 450-460, 464-999

(b) Universal Serial Bus (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). Once the software is installed on the MSD, the software is loaded to the DEU.

2) The USB flash drive must be configured correctly using the USB tool defined in the eADL Operations Guide.

(7) You must install software in one DEU at a time. There is no crossover-load function for the DEUs.

(8) The airplane must be on the ground with the engines shutdown before you can install software.

(9) 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.

(10) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

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. Prepare for the Installation

SUBTASK 31-62-21-860-027

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

(a) Make sure that the power is not removed while you install software.

NOTE: A power interruption will cause a failure of the software installation.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

SUBTASK 31-62-21-860-047

(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 31-62-21-860-028

(3) Make sure that you know the correct software part number for the DEUs.

NOTE: For the DEU to be an approved installation, the correct software part number must be installed.

SUBTASK 31-62-21-860-044

(4) Set the system select switch, on the P61 data loader control panel, to the NORM or NORMAL position.

LOM 429-431, 440, 442-447, 450-460, 464-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

SUBTASK 31-62-21-860-046

(5) Do these steps at the data loader control panel:

(a) Set the upper switch to L for DEU 1 or to R for DEU 2.

(b) Set the system select switch to DEU.

LOM 429-431, 440, 442-447, 450-460, 464-999

SUBTASK 31-62-21-860-033

(6) Open the eADL front cover by releasing the two screws and lifting up on the cover.

D. Software Installation (Preferred)

SUBTASK 31-62-21-470-008

(1) Follow the generic ADL procedure to load software part (TASK 20-15-11-400-801).

LOM 429-431, 440, 442-447, 450-460, 464, 465

E. Floppy Disk Software Installation (Non-Preferred)

SUBTASK 31-62-21-470-004

(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.

1) 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.”

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464, 465 (Continued)

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.”

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.

(f) Select “MAIN” or “GO BACK” to go back to the main menu.

(g) Eject the disk from the disk drive when the software installation is completed.

LOM 429-431, 440, 442-447, 450-460, 464-999

F. USB Flash Drive Software Installation (Non-Preferred)

SUBTASK 31-62-21-470-005

(1) 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 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.

1) 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.”

1) If the error message “USB Is Not Mounted Or Is Not A Valid USB” is shown, select “GO BACK” and do the steps again.

2) Make sure that the USB flash drive is configured correctly by the USB tool as specified in the eADL Operations Guide.

3) The eADL screen will show “CONFIRM TO BEGIN TRANSFERRING.”

4) 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: “This part name already exists.”

(e) Make sure that USB and MSB annunciators turn green and the message shows "Part Transfer Complete".

NOTE: This means that software transfer is complete.

NOTE: The annunciators will turn red if the transfer procedure is aborted or if there is a failure.

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(f) Select “MAIN” or “GO BACK” to go back to the main menu.

(g) Remove the USB flash drive from the eADL USB port.

(h) Following the successful load of the software perform these steps to remove previous versions from the MSD:

NOTE: This procedure allows the operator to remove an LSP from the MSD. This will also delete any downloaded files associated with the LSP that may have been added to the LSP. This action cannot be undone.

NOTE: It is recommended to remove the older LSP on the MSD, but it is not required.

1) On the eADL use the Up and Down keys and select the following:

a) Select the Maintenance page.

b) Select delete Software part option.

NOTE: The listed LSP may or may not appear as a part number. It will appear as it was originally saved using eADL Part Builder.

c) Select the desired LSP.

d) The eADL screen will display, Part Selected for Deletion is <Desired LSP>.

e) Press the CONFIRM softkey to initiate the deletion process.

NOTE: If you want to cancel the operation, use the Go Back key.

2) The MSD annunciator will turn yellow while the delete operation is taking place.

3) The MSD annunciator will turn back to green and scree will display:

a) Part Deleted.

4) Press the GO BACK key to return to the Main Menu.

SUBTASK 31-62-21-470-006

(2) 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.

1) If the eADL Main Menu does not show, select MAIN or GO BACK until the eADL shows the Main Menu.

(b) Select “Target Page.”

NOTE: This will show the “Select Target System” screen.

(c) Select the software received by the LRU.

NOTE: 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 tool. See the supplier eADL Operations Guide.

(e) Make sure that the “Load Confirmation” screen shows.

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(f) Select “CONFIRM”.

NOTE: This will show the “Transfer In Progress” screen.

NOTE: The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the installation procedure.

NOTE: The “LOADING” annunciator will change to “COMPLETE” and turn green when the installation procedure is completed.

(g) Select “MAIN” or “GO BACK” to go back to the main menu.

G. Software Installation Configuration Check

SUBTASK 31-62-21-700-001

(1) Do these steps to do a software configuration check of the DEU:

(a) Set the system select switch, on the P61 data loader control panel, to the NORM or NORMAL position.

NOTE: It can take approximately 2 minutes for the DEU to come back from its software load condition.

(b) If you are not at one of the CDS DEU BITE displays, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the line select key next to the MAINT prompt.

(c) From the MAINT BITE INDEX, push the line select key next to the CDS prompt.

(d) Push the line select key next to the applicable DEU prompt.

(e) Push the line select key next to the IDENT/CONFIG prompt.

1) Make sure that the correct software part number shows on the CDU.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 31-62-21-860-034

(1) Close the eADL cover and tighten screws.

SUBTASK 31-62-21-860-035

(2) Set the system select switch, on the P61 data loader control panel, to the NORM or NORMAL position.

SUBTASK 31-62-21-860-029

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

——— END OF TASK ———

TASK 31-62-21-470-806

5. BITE Data Output from the DEUs to an enhanced Airborne Data Loader (eADL)

A. General

(1) This procedure contains the steps to send BITE data from the Display Electronic Unit 1 (DEU-1) and DEU-2 to a disk or Universal Serial Bus (USB) flash drive in the Enhanced Airborne Data Loader (eADL). You can keep the data on the disk or USB flash drive and examine it at a different time.

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(2) An eADL and a special disk from Honeywell are necessary for this procedure. The disk part number is PS4081944-103.

NOTE: Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

(3) The necessary files are DEUII.REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB) or on a USB flash drive.

NOTE: The USB flash drive must be configured correctly using the USB tool defined in the eADL Operations Guide.

(4) The airplane must be on the ground with the engines shutdown before you can do the BITE data output.

(5) If necessary, send the disk(s) or BITE data to Boeing or Honeywell for analysis.

NOTE: If you send the BITE data to Boeing or Honeywell by email, these are the files you send.

The three files for DEU P/N 4081600–930 are BITESRAM.BIN, EEXNY.BIN, and OCH.BIN.

The three files for DEU P/N 4081600–940 are D2BHDRAM.DMP, D2BHXEE.DMP, and D2NRBHLI.DMP.

(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.

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
212	Flight Compartment - Right

D. Prepare for the Procedure

SUBTASK 31-62-21-860-030

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

SUBTASK 31-62-21-860-031

(2) Make sure this circuit breaker is closed before you start the procedure:

Make sure that this circuit breaker is closed:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

SUBTASK 31-62-21-470-007

(3) Do these steps to prepare the USB flash drive to receive DEU BITE data:

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(a) Transfer the DEUII.REQ, DEUI.REQ and CONFIG.LDR files from the disk to the USB flash drive to create the DEU-1 and DEU-2 download LSAPs (Loadable Software Airplane Part)s which will receive the DEU BITE data.

NOTE: Use the USB tool defined in the eADL Operations Guide.

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position. The files noted above belong in each LSAP.

(b) Do these steps to install the DEU-1 and DEU-2 download LSAPs from the USB flash drive to the eADL Mass Storage Device (MSD):

1) Put the USB flash drive into the eADL USB port.

2) 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.

3) Select ‘‘Maintenance Page.’’

a) This will show the ‘‘Maintenance Menu’’ screen.

4) 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 tool as specified in the eADL Operations Guide.

a) The eADL screen will show ‘‘CONFIRM TO BEGIN TRANSFERRING.’’

b) 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: ‘‘This part name already exists.’’

5) 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.

6) Select ‘‘MAIN’’ to go back to the main menu.

7) Remove the USB flash drive.

E. Procedure

SUBTASK 31-62-21-760-004

(1) Do these steps for safestoring the DEU ground faults:

NOTE: If the BITE data you will download has faults from a test on the ground, safestore the BITE DATA to the DEU.

(a) On the MAINT BITE INDEX page select CDS.

(b) On the CDS BITE page select DEU 1 or DEU 2 if applicable.

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(c) On the CDS DEU X BITE page select GROUND TEST.

(d) On the CDS DEU X MAINT/BITE page select the DEU X SELF-TEST.

(e) Select RUN SELF-TEST.

NOTE: The self-test can take up to 3 minutes. At this time the MCDU page will show : DEU SELF-TEST (3 MIN) OR DEU-X BITE INOP CHECK DEU OR INTERFACE. Do not be concerned with this message the test page will read: SELF-TEST IN PROGRESS.

(f) At the end of the SELF-TEST the test page will show PASSED or FAILED.

(g) To exit the test select INDEX.

SUBTASK 31-62-21-760-001

(2) Do these steps to prepare for the BITE data output:

(a) Record the fault history from the applicable DEU.

1) From the MAINT BITE INDEX, push the line select key next to the CDS prompt.

2) For DEU-1 CDS BITE, push the line select key next to the DEU-1 prompt.

3) For DEU-2 CDS BITE, push the line select key next to the DEU-2 prompt.

4) Do these steps to look for maintenance messages in CURRENT STATUS:

a) Push the line select key next to the CURRENT STATUS prompt.

NOTE: If there are active faults detected by the applicable DEU, you will see a maintenance message number and the maintenance message text.

b) If there are any maintenance messages, then refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

NOTE: The number of maintenance messages that are in Current Status are shown in the upper right corner of the display. You can use the PREV PAGE and NEXT PAGE buttons to move from one maintenance message to another.

c) If NO FAULTS shows for DEU 1 and 2, then do these steps:

NOTE: There are no faults that are currently active.

<1> Push the line select key next to the INDEX prompt.

NOTE: This will bring you back to the CDS DEU BITE main menu.

<2> Do the steps that follow to look for maintenance messages in the INFLIGHT FAULTS menu selection.

5) If there are no maintenance messages in CURRENT STATUS for both DEU 1 and 2, then do these steps to look for maintenance messages in INFLIGHT FAULTS for both DEU 1 and 2:

a) Push the line select key next to the INFLIGHT FAULTS prompt.

b) Push the line select key next to the prompt for the flight leg (LEG) during which the fault occurred.

NOTE: The most recent flight leg is LEG 01.

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LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

c) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

NOTE: The number of maintenance messages that are in Current Status are shown in the upper right corner of the display. You can use the PREV PAGE and NEXT PAGE buttons to move from one maintenance message to another.

6) Push the line select key next to the INDEX prompt twice to return to the CDS DEU BITE Main Menu.

(b) Set the system select switch on the data loader control panel (P61) to NORM or NORMAL.

LOM 429-431, 440, 442-447, 450-460, 464-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(c) Do these steps at the data loader control panel:

1) Set the upper switch to L.

2) Set the system select switch to DEU.

LOM 429-431, 440, 442-447, 450-460, 464-999

(d) Continue the procedure.

NOTE: The DEU will go into a software load condition when you put the system select switch on the data loader control panel in the DEU position. The displays can be blank or show a CDS FAULT message. After you put the system select switch in the NORMAL position, it can take approximately 2 minutes for the DEU to come back from its software load condition.

SUBTASK 31-62-21-760-003

LOM 429-431, 440, 442-447, 450-460, 464, 465

(3) Do these steps to do the BITE data output using the floppy drive:

NOTE: For more information on how to use the data loader, refer to the supplier's eADL Operations Guide. The necessary files are DEUII.REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB).

(a) Put a disk in the disk drive of the eADL.

NOTE: You must use a special Honeywell disk, P/N PS4081944-103, to send data to the disk drive. This updated download diskette set will support DEU-I and DEU-II. Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

(b) Wait until the display shows “eADL MAIN MENU.”

NOTE: To navigate UP or DOWN and make a selection on the eADL screen, use the appropriate pushbuttons on the right panel of the eADL.

NOTE: If the eADL MAIN MENU is not displayed, select “MAIN” or “GO BACK” until the “eADL displays MAIN MENU.”

(c) Select “Target Page.”

1) The eADL will show the “Select Target System” screen.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464, 465 (Continued)

(d) Select “Floppy Drive.”

1) The eADL will show a “Load Confirmation” screen.

(e) Select “CONFIRM.”

1) The eADL will show the “Transfer In Progress” screen.

2) The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the download procedure.

3) The “LOADING” annunciator will change to “COMPLETE” and turn green when the download procedure is completed.

NOTE: During downloading, the MCDU will display “DEU SELF-TEST (3 MIN.)”.

NOTE: If the MCDU displays “DEU BITE INOP,” check the DEU or its interface.

(f) Remove the disk from the disk drive when the data output for DEU 1 is completed.

LOM 429-431, 440, 442-447, 450-460, 464, 465; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(g) Set the upper switch to R.

LOM 429-431, 440, 442-447, 450-460, 464, 465

(h) Put a new disk in the disk drive and repeat the steps above to do the BITE data output for DEU 2.

NOTE: You must use a special Honeywell disk, P/N PS4081944-103, to send data to the disk drive. This updated download diskette set will support DEU-I and DEU-II. Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email. The necessary files are DEUII. REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB).

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

(i) Remove the disk from the disk drive when the data output for DEU 2 is completed.

LOM 429-431, 440, 442-447, 450-460, 464-999

(4) Do these steps to do the BITE data output using the eADL's USB port:

NOTE: For more information on how to use the data loader, refer to the supplier's eADL Operations Guide. The necessary LSAPs should be stored on eADL MSD.

NOTE: The USB flash drive must be configured correctly using the USB tool defined in the eADL Operations Guide.

(a) Do these steps to download from the DEU-1 to the eADL MSD:

1) Select “Target Page.”

a) This will show the “Select Target System” screen.

2) Select the target LRU.

a) This will show the “Select Software Part” screen.

3) Push the “SELECT” button for the desired software (DEU-1 or DEU-2 download LSAP).

NOTE: The listed software will appear as it was originally configured in the USB tool. See the eADL Operations Guide.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

4) Make sure that the “Confirm Transfer” screen shows.
5) Select “CONFIRM.”
   a) This will show the “Transfer In Progress” screen.
   b) The “TRANSFER” annunciator will change to “LOADING” and turn yellow during the download procedure.
   c) The “LOADING” annunciator will change to “COMPLETE” and turn green when the download procedure is completed.

(b) Do these steps to download the DEU-1 data from the eADL MSD to a USB flash drive:
1) Put the USB flash drive into the eADL USB port.

   NOTE: The USB flash drive must be configured correctly by the USB tool as specified in the eADL Operations Guide.

2) 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.

3) Select “Maintenance Page.”
   a) This will show the “Maintenance Menu” screen.
4) Select “Transfer Downloaded Data to 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 tool as specified in the eADL Operations Guide.

   a) The eADL screen will show “CONFIRM TO BEGIN TRANSFERRING.”
   b) Select “CONFIRM.”

      NOTE: The USB and MSD annunciators will turn yellow during the transfer procedure.

5) When the download 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.

6) Select “MAIN” to go back to the main menu.

(c) Remove the USB flash drive when the data output for DEU 1 is completed.

LOM 429-431, 440, 442-447, 450-460, 464-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(d) Set the upper switch to R.

LOM 429-431, 440, 442-447, 450-460, 464-999

(e) Repeat the steps above to do the BITE data output for DEU 2 using the eADL's USB port.

(f) Remove the USB flash drive when the data output for DEU 2 is completed.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 429-431, 440, 442-447, 450-460, 464-999 (Continued)

SUBTASK 31-62-21-860-032

(5) Do these steps to put the airplane back to its usual condition:

(a) Set the system select switch on the data loader control panel to NORM or NORMAL.

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

END OF TASK

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

TASK 31-62-21-470-802

6. Display Electronic Unit Software - Installation with a Portable Data Loader

A. General

(1) This procedure tells you how to install software in the Display Electronic Unit 1 (DEU-1) and the Display Electronic Unit 2 (DEU-2).

(a) The DEU-1 and DEU-2 contain these pieces of software:

1) Operational Program Software (OPS)

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

NOTE: DEU-I will always have a different OPS software part number than DEU-II. These differing OPS part numbers may or may not be incompatible. Incompatible OPS part numbers between the two installed DEU's will always be detected and annunciated by CDS as a software configuration fault. Consult with the authorized Airline Department for the correct software part numbers.

2) Operational Program Configuration (OPC)

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

NOTE: The OPC part number must be the same between DEU-I and DEU-II. Non-matching OPC part numbers between the two installed DEU's will always be detected and annunciated by CDS as a software configuration fault. Consult with the authorized Airline Department for the correct software part numbers.

3) Display Unit Database (DU DB).

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

NOTE: The DU DB part number must be the same between DEU-I and DEU-II. Consult with the authorized Airline Department for the correct software part numbers.

(2) If you will install a new OPS, then install it before you install other DEU software.

(3) You can install the OPC or DU DB in any sequence after the OPS is installed.

(4) If you install the OPS part number that is already installed in the DEU, then the DEU will do a short load. The data transfer time for a short load is significantly less than the data transfer for a new software part number.

(5) You must install software in one DEU at a time. There is no crossover-load function for the DEUs.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(6) A Portable Data Loader (PDL) is necessary for this procedure. A data loader control panel and a PDL interface connector are also necessary. The data loader control panel is installed above the DATA TRANSFER UNIT RECEPTACLE connector on the P61 panel.

(7) A PDL is not a Boeing supplied part. Refer to the PDL supplier for instructions for operation. PDLs have a disk drive for software installation from disks. Some PDLs have an internal mass storage device. If the software is stored in the PDL, then disks are not necessary.

(8) The airplane must be on the ground with the engines shutdown before you can install software.

(9) The word "media" defines a data storage device. Examples of media are CDs, mass storage devices, diskettes, or floppy disks.

(10) Modern software loaders that meet the security requirements defined in ARINC 645-1 or newer are recommended to use. The procedures for modern software loaders will be marked as preferred for now and will be the only procedures available after removing floppy disk loaders procedures in the future. Please check with your Software Loader Supplier for current capabilities since this is still maturing across current and future software loaders.

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software - Installation (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 (without ARINC 645-1 Compliant) Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: PXS-LDS-10 Supplier: 98571 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 30100 Supplier: 0BAW0 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 #: 964-0400-024 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-044 Supplier: 97896 Opt Part #: 964-0400-045 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896 Opt Part #: P2K-615A-06 Supplier: 0BAW0

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(Continued)

Reference	Description
COM-21223	Data Loader - ARINC 615 (with ARINC 645-1 Compliant) Part #: 403474 Supplier: CG603 Part #: 403562 Supplier: CG603 Part #: AE-615-MPDL Supplier: CD624 Part #: PDL-615-XT Supplier: 89Q20

D. Location Zones

Zone	Area
212	Flight Compartment - Right

E. Display Electronic Unit Software Installation with a Portable Data Loader Procedure

SUBTASK 31-62-21-860-010

(1) Use a PDL to install software in the applicable DEU.

NOTE: Make sure you know the correct software part number for the applicable DEU. For the DEU to be an approved installation, the correct software part numbers must be installed.

NOTE: Different part numbers for DEU-1 and DEU-2 may require different software part numbers. See the notes for the applicable DEU part number(s) in the Illustrated Parts Catalogue (IPC).

NOTE: The software version for the 30100 loader must be 4.53 or subsequent. The software version for the 465130-01-01 loader must be 4.53L or subsequent.

SUBTASK 31-62-21-860-011

(2) Do these steps to prepare for the software installation:

(a) Set the system select switch on the data loader control panel (P61) to the NORMAL (NORM) position.

CAUTION MAKE SURE THAT THE DATA LOADER CIRCUIT-BREAKER IS OPEN BEFORE YOU CONNECT OR REMOVE THE DATA LOADER 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

Row	Col	Number	Name
A	9	C00923	DATA LOADER

CAUTION SET THE POWER SWITCH FOR THE PORTABLE DATA LOADER 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) Connect the interface cable of the portable data ARINC 615 data loader, COM-1915, or ARINC 645-1 compliant portable data loader, COM-21223, to the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.

NOTE: This loader is going obsolete due use of floppy disks and ARINC 645 security requirements.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999 (Continued)

(d) Close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(e) Do these steps at the data loader control panel:

1) Set the upper switch to the L position for DEU 1 or to the R position for DEU 2.

2) Set the system select switch to the DEU position.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

(f) Continue the procedure.

NOTE: The DEU will go into a software load condition when you put the system select switch on the data loader control panel to the DEU position. The displays can be blank or show a CDS FAULT message. After you put the system select switch to the NORMAL position, it can take approximately 2 minutes for the DEU to come back from its software load condition.

SUBTASK 31-62-21-470-010

(3) Do this step to install the software - (Preferred):

(a) Follow the generic PDL procedure to load software part (TASK 20-15-11-400-801).

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; SOFTWARE INSTALLATION WITH A PDL DISK DRIVE

SUBTASK 31-62-21-420-004

(4) Do these steps to install the software - (Non-Preferred):

NOTE: For more information on how to use the data loader, refer to the supplier's instructions for the data loader.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

(a) Set the power switch on the data loader to the ON position.

(b) Put the correct media in the drive.

NOTE: When you put the disk in the disk drive, the data loader can read a part of the disk. Then, show no signs of a load sequence for 2 to 7 minutes. During this 2 to 7 minutes, the DEU will process data internally. After the 2 to 7 minutes, the data loader will continue to install the software.

CAUTION

DO NOT STOP THE DATA LOAD UNLESS THE DATA LOADER SHOWS LOAD FAILED OR LOAD COMPLETE. IF THE POWER STOPS AND STARTS DURING THE LOAD, THE DATA LOADER WILL TRY TO COMPLETE THE DATA LOAD. DURING THE RECOVERY, THE DATA LOADER CAN SHOW NO DISK ACTIVITY OR FILE TRANSFERS FOR A LONG TIME. GIVE THE DATA LOADER 10 TO 15 MINUTES TO COMPLETE THE LOAD. IF YOU STOP THE DATA LOAD BEFORE IT IS DONE, YOU CAN CAUSE DAMAGE TO THE UNIT.

(c) Follow the prompts on the data loader to complete the installation.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999 (Continued)

1) If there is more than one piece of media to install, wait 10 seconds after each load is completed before you remove and install the subsequent media.

NOTE: CHNG, CHANGE DISK, DISK CHANGE and INSERT DISK are examples of data loader prompts for a subsequent disk.

(d) Remove the media from the drive when the software installation is completed.

NOTE: COMP, LOAD COMPLETE and TRANSF COMPLETE are examples of data loader prompts for a completed installation.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; SOFTWARE INSTALLATION WITH A PDL MASS STORAGE DEVICE

SUBTASK 31-62-21-420-008

(5) Follow the PDL supplier instructions to install the software - (Non-Preferred).

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

SUBTASK 31-62-21-860-021

(6) Set the power switch on the data loader to the OFF position.

SUBTASK 31-62-21-420-005

(7) Do these steps to do a software configuration check of the DEU:

(a) Set the system select switch on the data loader control panel (P61) to the NORMAL (NORM) position.

NOTE: It can take approximately 2 minutes for the DEU to come back from its software load condition.

(b) If you are not at one of the CDS DEU BITE displays, then do these steps:

1) Push the INIT REF function key on the CDU.

2) If the POS INIT display shows, then push the line select key next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the line select key next to the MAINT prompt.

(c) From the MAINT BITE INDEX, push the line select key next to the CDS prompt.

(d) Push the line select key next to the applicable DEU prompt.

(e) Push the line select key next to the IDENT/CONFIG prompt.

1) When the software installation is completed, make sure that the correct part number shows on the display.

SUBTASK 31-62-21-860-012

(8) Do these steps to put the airplane back to its usual condition:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAUTION MAKE SURE THAT THE DATA LOADER CIRCUIT-BREAKER IS OPEN BEFORE YOU CONNECT OR REMOVE THE DATA LOADER CABLE. IF THE CIRCUIT BREAKER IS NOT OPEN, DAMAGE TO EQUIPMENT CAN OCCUR.

(a) Open this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

(b) Remove the interface cable from the DATA TRANSFER UNIT RECEPTACLE.

(c) Close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

END OF TASK

TASK 31-62-21-470-804

7. BITE Data Output from the DEUs to a Portable Data Loader

A. General

(1) This procedure contains the steps to send BITE data from the display electronic unit 1 (DEU-1) and the display electronic unit 2 (DEU-2) to a disk in the portable data loader. You can keep the data on the disk and examine it at a different time.

(2) A portable data loader (PDL) and a special disk from Honeywell are necessary for this procedure. The disk part number is PS4081944-103.

NOTE: Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

(3) The necessary files are DEUII.REQ, DEUI.REQ and CONFIG.LDR. The files go on a formatted high density disk (HD 1.44 MB).

(4) The airplane must be on the ground with the engines shutdown before you can do the BITE data output.

(5) If necessary, send the disk or disks with BITE data to Boeing or Honeywell for analysis.

NOTE: If you send the BITE data to Boeing or Honeywell by email, these are the files you send.

The three files for DEU P/N 4081600–930 are BITESRAM.BIN, EEXNY.BIN, and OCH.BIN.

The three files for DEU P/N 4081600–940 are D2BHDRAM.DMP, D2BHXEE.DMP, and D2NRBHLI.DMP.

(6) Modern software loaders that meet the security requirements defined in ARINC 645-1 or newer are recommended to use. The procedures for modern software loaders will be marked as preferred for now and will be the only procedures available after removing floppy disk loaders procedures in the future. Please check with your Software Loader Supplier for current capabilities since this is still maturing across current and future software loaders.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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-1915	Data Loader - ARINC 615 (without ARINC 645-1 Compliant) Part #: 11615-50 Supplier: 0D4J3 Part #: 2231560-1-B Supplier: 98571 Part #: 465130-01-01 Supplier: 30782 Part #: 800-0631 Supplier: 1JSZ6 Part #: CEI-715-DL-2 Supplier: 0BPH5 Part #: PXS-LDS-10 Supplier: 98571 Part #: YV68A110 Supplier: FAQ15 Opt Part #: 11615-02 Supplier: 0D4J3 Opt Part #: 11615-20 Supplier: 0D4J3 Opt Part #: 18000-02 Supplier: 0D4J3 Opt Part #: 30100 Supplier: 0BAW0 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 #: 964-0400-024 Supplier: 97896 Opt Part #: 964-0400-025 Supplier: 97896 Opt Part #: 964-0400-030 Supplier: 97896 Opt Part #: 964-0400-044 Supplier: 97896 Opt Part #: 964-0400-045 Supplier: 97896 Opt Part #: 964-0400-055 Supplier: 97896 Opt Part #: P2K-615A-06 Supplier: 0BAW0
COM-21223	Data Loader - ARINC 615 (with ARINC 645-1 Compliant) Part #: 403474 Supplier: CG603 Part #: 403562 Supplier: CG603 Part #: AE-615-MPDL Supplier: CD624 Part #: PDL-615-XT Supplier: 89Q20

D. Location Zones

Zone	Area
212	Flight Compartment - Right

E. Procedure

SUBTASK 31-62-21-860-017

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

SUBTASK 31-62-21-860-036

(2) Do these steps to safestore the DEU ground faults:

NOTE: If the BITE data you will download has faults from a test on the ground, safestore the BITE DATA to the DEU.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(a) On the MAINT BITE INDEX page select CDS.

(b) On the CDS BITE page select DEU 1 or DEU 2 if applicable.

(c) On the CDS DEU X BITE page select GROUND TEST.

(d) On the CDS DEU X MAINT/BITE page select the DEU X SELF-TEST.

(e) Select RUN SELF-TEST.

NOTE: The self-test can take up to 3 minutes. At this time the MCDU page will show : DEU SELF-TEST (3 MIN) OR DEU-X BITE INOP CHECK DEU OR INTERFACE. Do not be concerned with this message the test page will read: SELF-TEST IN PROGRESS.

(f) At the end of the SELF-TEST the test page will show PASSED or FAILED.

(g) If the BITE needs to be downloaded from the other DEU, repeat the steps to safestore the DEU ground faults.

(h) To exit the test select INDEX.

SUBTASK 31-62-21-860-018

(3) Do these steps to prepare for the BITE data output:

(a) Set the system select switch on the data loader control panel (P61) to NORM or NORMAL.

CAUTION MAKE SURE THAT 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

Row	Col	Number	Name
A	9	C00923	DATA LOADER

CAUTION SET THE POWER SWITCH FOR THE PORTABLE DATA LOADER 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) Connect the interface cable of the portable data ARINC 615 data loader, COM-1915, or ARINC 645-1 compliant portable data loader, COM-21223, to the DATA TRANSFER UNIT RECEPTACLE on the P61 panel.

NOTE: The software version for the 30100 loader must be 4.52 or subsequent. The software version for the 465130-01-01 loader must be 4.52L or subsequent.

(d) Close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(e) Do these steps at the data loader control panel:

1) Set the upper switch to L.

2) Set the system select switch to DEU.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

(f) Continue the procedure.

NOTE: The DEU will go into a software load condition when you put the system select switch on the data loader control panel in the DEU position. The displays can be blank or show a CDS FAULT message. After you put the system select switch in the NORMAL position, it can take approximately 2 minutes for the DEU to come back from its software load condition.

SUBTASK 31-62-21-420-007

(4) Do these steps to do the BITE data output:

NOTE: For more information on how to use the data loader, refer to the supplier's instructions for the data loader.

(a) Set the power switch on the data loader to the on position.

(b) Put a disk in the disk drive.

NOTE: You must use a special Honeywell disk, P/N PS4081944-103, to send data to the disk drive. This updated download diskette set will support DEU-I and DEU-II. Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

(c) Remove the disk from the disk drive when the data output for DEU 1 is completed.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999; AIRPLANES WITH TWO SWITCHES ON THE DATA LOADER CONTROL PANEL (P61)

(d) Set the upper switch to R.

LOM 412, 415, 423, 424, 427, 428, 437-447, 450-999

(e) Put a disk in the disk drive.

NOTE: You must use a special Honeywell disk, P/N PS4081944-103, to send data to the disk drive. This updated download diskette set will support DEU-I and DEU-II. Honeywell lets airlines make more copies of the disk. If you need the disk immediately, you can make it from files received from Honeywell by email.

NOTE: In this case DEU-I and DEU-II refers to the DEU hardware rather than the DEU installation position.

(f) Remove the disk from the disk drive when the data output for DEU 2 is completed.

(g) Set the power switch on the data loader to the off position.

SUBTASK 31-62-21-860-019

(5) Do these steps to put the airplane back to its usual condition:

(a) Set the system select switch on the data loader control panel to NORM or NORMAL.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

CAUTION MAKE SURE THAT 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:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

(c) Remove the interface cable from the DATA TRANSFER UNIT RECEPTACLE.

(d) Close this circuit breaker:

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
A	9	C00923	DATA LOADER

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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DISPLAY ELECTRONIC UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of a display electronic unit

(2) An installation of a display electronic unit.

B. The two display electronic units are on the E3 electronic equipment rack, shelf No. 1, in the main equipment center.

TASK 31-62-21-000-801

2. Display Electronic Unit 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. Display Electronic Unit Removal

SUBTASK 31-62-21-020-002

(1) If the Display Electronic Unit (DEU) to be removed has fault data, perform the following safestore steps before removing power to the DEU:

(a) On the MAINT BITE INDEX page select CDS.

(b) On the CDS BITE page select DEU 1 or DEU 2 if applicable.

(c) On the CDS DEU X BITE page select GROUND TEST.

(d) On the CDS DEU X MAINT/BITE page select the DEU X SELF-TEST.

(e) Select RUN SELF-TEST.

NOTE: The self-test can take up to 3 minutes. At this time the MCDU page will show : DEU SELF-TEST (3 MIN) OR DEU-X BITE INOP CHECK DEU OR INTERFACE. Do not be concerned with this message the test page will read: SELF-TEST IN PROGRESS.

(f) At the end of the SELF-TEST the test page will show PASSED or FAILED.

(g) To exit the test select INDEX.

SUBTASK 31-62-21-040-001

(2) For the applicable unit, do the following steps in this sequence:

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	11	C01360	DISPLAY DEU 2 PRI

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP

SUBTASK 31-62-21-010-001

(3) Open this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-62-21-020-001

CAUTION

DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE DISPLAY UNIT. A ELECTROSTATIC DISCHARGE CAN OCCUR AND DAMAGE THE DISPLAY UNIT.

(4) Remove the display electronic unit [1], do this task: E/E Box Removal, TASK 20-10-07-000-801.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

ELECTRONIC EQUIPMENT RACKS E2, E3 AND E4

A

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Display Electronic Unit Installation
Figure 401/31-62-21-990-801

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-21-400-801

3. **Display Electronic Unit Installation**
(Figure 401)

A. **General**

(1) The installation test makes sure that the Display Electronic Unit (DEU) operates correctly.

B. **References**

Reference	Title
20-10-07-400-801	E/E Box Installation (P/B 201)
22-11-00-700-801	Land Verify Test (P/B 201)
22-11-00-700-802	Reset Latches Procedure (P/B 201)
31-62-21-100-801	How to Clean the Cooling Air Inlet Screen for the Display Electronic Unit (P/B 701)
31-62-21-470-801	Display Electronic Unit Software - Installation with an Airborne Data Loader (P/B 201)
31-62-21-470-802	Display Electronic Unit Software - Installation with a Portable Data Loader (P/B 201)
31-62-21-470-805	Display Electronic Unit (DEU) Software Installation with an Enhanced Airborne Data Loader (eADL) (P/B 201)

C. **Expendables/Parts**

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Display electronic unit	31-62-21-09-005	LOM 416, 420, 422-434, 437-447, 450-999
		31-62-21-10A-050	LOM 402, 404
		31-62-21-10B-050	LOM 406, 407, 411, 412, 415

D. **Location Zones**

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

E. **Access Panels**

Number	Name/Location
117A	Electronic Equipment Access Door

F. **Display Electronic Unit Installation**

SUBTASK 31-62-21-140-001

(1) If it is necessary, clean the cooling air inlet screen of the DEU (TASK 31-62-21-100-801).

SUBTASK 31-62-21-860-001

(2) For the applicable unit, do these steps in this sequence:

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

ECCN 9E991 BOEING PROPRIETARY - See title page for details

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	11	C01360	DISPLAY DEU 2 PRI

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP

SUBTASK 31-62-21-420-001

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

(3) Install the display electronic unit [1] (TASK 20-10-07-400-801).

SUBTASK 31-62-21-440-001

(4) For the applicable unit, do these steps in this sequence:

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

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	9	C01362	DISPLAY DEU 2 HOLDUP
D	10	C01361	DISPLAY DEU 1 HOLDUP

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	5	C01359	DISPLAY DEU 1 PRI

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
D	11	C01360	DISPLAY DEU 2 PRI

NOTE: The DEU could take as long as 3 minutes to perform its Power Up Bite.

SUBTASK 31-62-21-410-001

(5) Close this access panel:

Number	Name/Location
117A	Electronic Equipment Access Door

SUBTASK 31-62-21-860-026

(6) Put the engine start switches to “CONT” for a minimum of 10 seconds.

NOTE: This will cause the EECs to transmit all of the download limits to the DEU.

G. Display Electronic Unit Installation Test

SUBTASK 31-62-21-860-003

(1) Make sure that the DISPLAY SOURCE switch on the instrument switching module is in the AUTO position.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-21-860-013

(2) Do these steps to make sure that the correct software part number for the OPS, OPC, and DU DB are installed in the applicable DEU.

NOTE: Different part numbers for DEU-1 and DEU-2 may require different software part numbers. See the notes for the applicable DEU part number(s) in the Illustrated Parts Catalogue (IPC).

(a) If you are not at one of the CDS DEU BITE displays, do these steps:

1) Push the INIT REF function key.

2) If the POS INIT display shows, push the line select key next to the INDEX prompt.

NOTE: This makes the INIT/REF INDEX show.

3) Push the line select key next to the MAINT prompt.

(b) From the MAINT BITE INDEX, push the line select key next to the CDS prompt.

(c) Push the line select key next to the applicable DEU prompt.

(d) Push the line select key next to the IDENT/CONFIG prompt.

1) Make sure that the correct part number shows on the display.

2) If an incorrect part number shows on the display, install the correct software part number (TASK 31-62-21-470-802 or TASK 31-62-21-470-801 or TASK 31-62-21-470-805), or replace the display electronic unit.

LOM 428-431, 450, 465-999; LOM 427 PRE SB 737-22-1306

SUBTASK 31-62-21-700-002

(3) If you replaced the DEU because of a NO AUTOLAND FAULT, do these tasks before you continue:

(a) Do this task: Land Verify Test, TASK 22-11-00-700-801.

(b) Do this task: Reset Latches Procedure, TASK 22-11-00-700-802.

LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 PRE SB 737-31-1650 AND PRE SB 737-31A1880

SUBTASK 31-62-21-750-002

(4) Do a test of the display electronic unit [1].

(a) Make sure that CDS FAULT does not show on the outboard display unit.

(b) Make sure that DSPLY SOURCE does not show on the outboard display unit.

LOM 402, 406, 407, 412, 415, 416, 423, 424, 426-431, 437-439, 441, 443-447, 455, 456, 458-999; LOM 404, 411, 420, 422, 425, 432-434, 440, 442, 450-454, 457 POST SB 737-31-1650 OR POST SB 737-31A1880

SUBTASK 31-62-21-750-001

(5) Do a test of the display electronic unit [1].

(a) Make sure that CDS FAULT does not show on the outboard display unit.

(b) Make sure that DSPLY SOURCE 1 or DSPLY SOURCE 2 does not show on the outboard display unit.

LOM ALL

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-21-860-004

(6) Make sure that the EEC switches are set to ON position.

NOTE: An EEC "ALTN" light fault may result from the EEC switches being manually switched to ALTN position and left in ALTN position after the DEU replacement.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

DISPLAY ELECTRONIC UNIT - CLEANING/PAINTING

1. General

A. This procedure has this task:

(1) How to clean the display electronic unit cooling air inlet screen.

B. There are two display electronic units.

C. This procedure is the same for both display electronic units.

TASK 31-62-21-100-801

2. How to Clean the Cooling Air Inlet Screen for the Display Electronic Unit

A. References

Reference	Title
24-22-00-860-812	Remove Electrical Power (P/B 201)
31-62-21-000-801	Display Electronic Unit Removal (P/B 401)
31-62-21-400-801	Display Electronic Unit Installation (P/B 401)

B. Location Zones

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

C. Procedure

SUBTASK 31-62-21-010-002

(1) Do this task: Display Electronic Unit Removal, TASK 31-62-21-000-801.

SUBTASK 31-62-21-100-001

CAUTION

DO NOT USE COMPRESSED AIR TO CLEAN THE SCREEN IN THE COOLING AIR INLET. COMPRESSED AIR WILL PUSH CONTAMINATION INTO THE DISPLAY ELECTRONIC UNIT AND CAUSE EQUIPMENT FAILURE.

(2) Remove all lint, dust, and debris from the cooling air inlet screen with a vacuum cleaner.

SUBTASK 31-62-21-410-002

(3) Do this task: Display Electronic Unit Installation, TASK 31-62-21-400-801.

SUBTASK 31-62-21-860-022

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

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

COAXIAL COUPLER - REMOVAL/INSTALLATION

1. **General**
   A. This procedure has these tasks:
      (1) A removal of a coaxial coupler.
      (2) An installation of a coaxial coupler.
   B. There are four coaxial couplers installed in the common display system.
      (1) There are two coaxial couplers installed inboard of the rudder pedals on each side.
         (a) The two couplers are mounted on a bracket.
         (b) Remove the applicable FMCS control display unit and the applicable main access panel to get access to the bracket for the coaxial couplers.
         (c) Remove the bracket to get access to the coaxial couplers.

TASK 31-62-31-000-801

2. **Coaxial Coupler Removal**
   (Figure 401)

A. General

(1) This task includes the steps to remove the coaxial coupler.

B. References

Reference	Title
25-11-01-000-801	Captain's and First Officer's Seat Removal (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
34-61-01-000-802	FMCS Control Display Unit (CDU) Removal (P/B 401)

C. Location Zones

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

D. Removal Procedure

SUBTASK 31-62-31-860-001

(1) Make sure the hydraulic system A and hydraulic system B are off (TASK 29-11-00-860-805).

SUBTASK 31-62-31-010-001

(2) Remove the captain's (first officer's) seat (TASK 25-11-01-000-801).

SUBTASK 31-62-31-010-002

(3) Do these steps to get access to the left (right) bracket [4] for coaxial couplers [7]:
   (a) Use the hand crank to move the rudder pedals to the full forward position.
   (b) Remove the screws on the left (right) main access panel [2] (inboard of the rudder pedals).
   (c) Remove the left (right) main access panel [2].

SUBTASK 31-62-31-010-003

(4) Remove the left (right) FMCS control display unit [1] (TASK 34-61-01-000-802).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

LOM 422-434, 437-447, 450-999

SUBTASK 31-62-31-020-003

(5) Loosen four quarter turn fasteners to lower the dimmer bracket to get access to the two screws that hold the coax bracket on the structure.

LOM ALL

SUBTASK 31-62-31-020-001

(6) Do these steps to remove the left (right) bracket [4] for the coaxial couplers [7]:

(a) Disconnect the coaxial cables [8] from the two coaxial couplers [7].

NOTE: Record the coaxial cable [8] locations before you remove them.

(b) Remove the two screws [3] that hold the bracket [4] to the structure.

(c) Remove the bracket [4] from the structure.

SUBTASK 31-62-31-020-002

(7) Remove the applicable coaxial coupler [7] from the bracket [4]:

(a) Remove the four screws [5], and washers [6] that hold the coaxial coupler [7] to the bracket [4].

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Coaxial Coupler Installation
Figure 401/31-62-31-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Coaxial Coupler Installation
Figure 401/31-62-31-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Coaxial Coupler Installation
Figure 401/31-62-31-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-31-400-801

3. Coaxial Coupler Installation

(Figure 401)

A. General

(1) This task includes the steps to install the coaxial coupler.

(2) The LRU replacement test makes sure the coaxial coupler [7] you install operates correctly.

B. References

Reference	Title
24-22-00-860-811	Supply Electrical Power (P/B 201)
25-11-01-400-801	Captain's and First Officer's Seat Installation (P/B 401)
29-11-00-860-805	Hydraulic System A or B Power Removal (P/B 201)
34-61-01-400-802	FMCS Control Display Unit (CDU) - Installation (P/B 401)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
7	Coaxial coupler	31-62-31-01-080	LOM 402, 404, 406, 407, 411, 412, 415, 416, 420
		53-42-00-19B-225	LOM 422-434, 437-447, 450-999

D. Location Zones

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

E. Installation Procedure

SUBTASK 31-62-31-860-002

(1) Make sure the hydraulic system A and hydraulic system B are off (TASK 29-11-00-860-805).

SUBTASK 31-62-31-420-001

(2) Install the coaxial coupler [7]:

(a) Put the coaxial coupler [7] in place on the bracket [4].

(b) Install the four screws [5], and washers [6] that hold the coaxial coupler [7] to the bracket [4].

SUBTASK 31-62-31-420-002

(3) Install the bracket [4] for the coaxial couplers [7]:

(a) Put the bracket [4] in place on the support structure.

(b) Install the two screws [3] that hold the bracket [4] in place.

(c) Connect the coaxial cables [8] to the two coaxial couplers [7].

NOTE: Connect the coaxial cables in the same locations you recorded before.

SUBTASK 31-62-31-410-003

(4) Install the main access panel [2] (inboard of the rudder pedals):

(a) Install the screws on the main access panel [2].

SUBTASK 31-62-31-410-001

(5) Install the applicable FMCS control display unit (TASK 34-61-01-400-802).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

SUBTASK 31-62-31-410-002

(6) Install the captain's (first officer's) seat (TASK 25-11-01-400-801).

F. Installation Test

SUBTASK 31-62-31-860-003

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

SUBTASK 31-62-31-860-004

(2) Adjust the brightness controls for each display unit (DU) so that all six DUs are readable.

SUBTASK 31-62-31-730-002

(3) Do a test of the two coaxial couplers [7] on the bracket [4] that you installed.

(a) Do these steps at the FMCS control display unit that you installed:

1) Push the INIT REF key.
2) Push the line select key (LSK) adjacent to INDEX.
3) Push the LSK adjacent to MAINT.
4) Push the LSK adjacent to CDS.
5) Push the LSK adjacent to DEU 1.
6) Push the LSK adjacent to GROUND TESTS.
7) Push the LSK adjacent to DU LOOP TEST.
8) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

(b) Make sure all six DUs show the test format (Figure 402).

(c) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(d) Make sure all six DUs agree with the data in (Table 401).

Table 401/31-62-31-993-803

Display Unit Test Format DEU 1 selected coupler #1 to left DUs coupler #2 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	1	1	1	2	2	2
INPUT ACTIVITY	[Y]YYY	[Y]YYY	[Y]YYY	Y[Y]YY	Y[Y]YY	Y[Y]YY
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(e) On the FMCS control display unit, push the LSK adjacent to COAX 2 TO LT DISPLAYS & COAX 1 TO RT DISPLAYS.

(f) Make sure all six DUs show the test format (Figure 402).

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(g) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(h) Make sure all six DUs agree with the data in (Table 402).

Table 402/31-62-31-993-804

Display Unit Test Format DEU 1 selected coupler #2 to left DUs coupler #1 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	2	2	2	1	1	1
INPUT ACTIVITY	Y[Y]YY	Y[Y]YY	Y[Y]YY	[Y]YYY	[Y]YYY	[Y]YYY
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(i) Do these steps at the FMCS control display unit:

1) Push the LSK adjacent to INDEX until the CDS BITE INDEX page shows.
2) Push the LSK adjacent to DEU 2.
3) Push the LSK adjacent to GROUND TESTS.
4) Push the LSK adjacent to DU LOOP TEST.
5) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

(j) Make sure all six DUs show the test format (Figure 402).

(k) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(l) Make sure all six DUs agree with the data in (Table 403).

Table 403/31-62-31-993-805

Display Unit Test Format DEU 2 selected coupler #3 to left DUs coupler #4 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	1	1	1	2	2	2

ECCN 9E991 BOEING PROPRIETARY - See title page for details

Table 403/31-62-31-993-805 (Continued)

Display Unit Test Format DEU 2 selected coupler #3 to left DUs coupler #4 to right DUs						
INPUT ACTIVITY	YY[Y]Y	YY[Y]Y	YY[Y]Y	YYY[Y]	YYY[Y]	YYY[Y]
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(m) On the FMCS control display unit, push the LSK adjacent to COAX 2 TO LT DISPLAYS & COAX 1 TO RT DISPLAYS.

(n) Make sure all six DUs show the test format (Figure 402).

(o) For each DU, make sure the DU LOCATION, COAX OUTPUT, INPUT ACTIVITY, and ARINC 429 LOOP are as follows:

NOTE: The boxed Y indicates the active channel and will show in white on the DU. A green Y on the DU indicates a channel with activity on it. A red N on the DU indicates a channel with no detected activity on it.

(p) Make sure all six DUs agree with the data in (Table 404).

Table 404/31-62-31-993-806

Display Unit Test Format DEU 2 selected coupler #4 to left DUs coupler #3 to right DUs						
	Left Outbd DU	Left Inbd DU	Center Upper DU	Center Lower DU	Right Inbd DU	Right Outbd DU
DU LOCATION	LOB	LIB	CU	CL	RIB	ROB
COAX OUTPUT	2	2	2	1	1	1
INPUT ACTIVITY	YYY[Y]	YYY[Y]	YYY[Y]	YY[Y]Y	YY[Y]Y	YY[Y]Y
ARINC 429 LOOP	PASS	PASS	PASS	PASS	PASS	PASS

(q) Push the LSK adjacent to INDEX on the FMCS control display unit to stop the test.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Display Unit Test Format
Figure 402/31-62-31-990-802

ECCN 9E991 BOEING PROPRIETARY - See title page for details

REMOTE LIGHT SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has these tasks:

(1) A removal of a remote light sensor.

(2) An installation of a remote light sensor.

B. There are two remote light sensors. The remote light sensors are on the glareshield in front of the pilots. You remove or install the remote light sensor from above the glareshield.

C. Power for the left remote light sensor is supplied by the captain's outboard display unit. Power for the right remote light sensor is supplied by the first officer's outboard display unit.

TASK 31-62-41-000-801

2. Remote Light Sensor Removal

(Figure 401)

A. References

Reference	Title
SWPM 20-61-11	Standard Wiring Practices Manual

B. Location Zones

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

C. Removal Procedure

SUBTASK 31-62-41-860-001

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD

SUBTASK 31-62-41-010-001

(2) Do these steps to get access to the remote light sensor [4]:

(a) Loosen the eight quarter turn fasteners [2] that hold the glareshield access panel [1] to the glareshield, P7.

(b) Remove the glareshield access panel [1].

SUBTASK 31-62-41-010-003

(3) Remove the bottom panel of the glareshield structure to get access to the electrical connector [5] for the remote light sensor [4].

SUBTASK 31-62-41-020-001

(4) Remove the remote light sensor [4]:

(a) Remove the two screws [3] that hold the remote light sensor [4] to the glareshield structure.

ECCN 9E991 BOEING PROPRIETARY - See title page for details

(b) Disconnect the electrical connector [5] at the other end of the wirefrom the remote light sensor [4].

(c) Remove the pins for the remote light sensor wires from the electrical connector [5] (SWPM 20-61-11).

(d) Remove the remote light sensor [4] with wires from the airplane.

END OF TASK

ECCN 9E991 BOEING PROPRIETARY - See title page for details

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Remote Light Sensor Installation
Figure 401/31-62-41-990-801 (Sheet 1 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

REMOTE LIGHT SENSOR
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

B

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Remote Light Sensor Installation
Figure 401/31-62-41-990-801 (Sheet 2 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

FORWARD PANEL LOWER COVER
(LEFT SIDE IS SHOWN, RIGHT SIDE IS OPPOSITE)

C

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Remote Light Sensor Installation
Figure 401/31-62-41-990-801 (Sheet 3 of 3)

ECCN 9E991 BOEING PROPRIETARY - See title page for details

TASK 31-62-41-400-801

3. Remote Light Sensor Installation

(Figure 401)

A. General

(1) The LRU replacement test makes sure that the remote light sensor [4] 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)
SWPM 20-61-11	Standard Wiring Practices Manual

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
4	Remote light sensor	31-62-41-01-005	LOM 402, 404
		31-62-41-01-105	LOM 402, 404
		31-62-41-01-210	LOM 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999
		31-62-41-01-310	LOM 406, 407, 411, 412, 415, 416, 420, 422-434, 437-447, 450-999

D. Location Zones

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

E. Installation Procedure

SUBTASK 31-62-41-860-002

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD

SUBTASK 31-62-41-420-001

(2) Install the remote light sensor [4]:

(a) If not installed, put pins on the end of the remote light sensor wires (SWPM 20-61-11).

1) Make sure the wires of the new remote light sensor [4] have approximately the same length as the one that you removed.

(b) Put the remote light sensor [4] and wires into its place in the glareshield structure.

NOTE: The sensor should be installed with the sensors facing forward.

(c) Install the pins in the electrical connector [5].

(d) Connect the electrical connector [5].

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(e) Install the two screws [3] that hold the remote light sensor [4] to the glareshield structure.

SUBTASK 31-62-41-010-002

(3) Do these steps to install the glareshield access panel [1]:

(a) Put the glareshield access panel [1] into its place on the glareshield structure.

(b) Tighten the eight quarter turn fasteners [2] that hold the glareshield access panel [1] to the glareshield, P7.

SUBTASK 31-62-41-410-001

(4) Install the bottom panel of the glareshield structure.

SUBTASK 31-62-41-860-003

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

CAPT Electrical System Panel, P18-2

Row	Col	Number	Name
D	4	C01363	DISPLAY CAPT OUTBD

F/O Electrical System Panel, P6-1

Row	Col	Number	Name
E	10	C01364	DISPLAY F/O OUTBD

F. Installation Test

(Figure 402)

SUBTASK 31-62-41-860-004

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

SUBTASK 31-62-41-730-001

(2) Do these steps to do a test of the remote light sensor [4] that you installed:

(a) Do these steps at an FMCS CDU:

1) Push the INIT REF key.

2) Push the line select key (LSK) adjacent to INDEX.

3) Push the LSK adjacent to MAINT.

4) Push the LSK adjacent to CDS.

5) Push the LSK adjacent to DEU 1.

6) Push the LSK adjacent to GROUND TESTS.

7) Push the LSK adjacent to DU LOOP TEST.

8) Push the LSK adjacent to COAX 1 TO LT DISPLAYS & COAX 2 TO RT DISPLAYS.

(b) Make a note of the REMOTE LIGHT SENSOR value shown on the left (right) outboard display unit.

(c) If there is good lighting in the flight compartment, do these steps:

1) Put an opaque lint-free fabric on the left (right) remote light sensor [4].

a) Make sure the REMOTE LIGHT SENSOR value decreases on the left (right) outboard display unit.

2) Remove the opaque lint-free fabric from the left (right) remote light sensor [4].

a) Make sure the REMOTE LIGHT SENSOR value increases on the left (right) outboard display unit.

(d) If there is bad lighting in the flight compartment, do these steps.

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1) Point a flashlight at the left (right) remote light sensor [4] until the light hits the notch on the front of the remote light sensor [4].
   a) Make sure the REMOTE LIGHT SENSOR value increases on the left (right) outboard display unit.
2) Remove the flashlight from the left (right) remote light sensor [4].
   a) Make sure the REMOTE LIGHT SENSOR value decreases on the left (right) outboard display unit.

(e) Push the LSK adjacent to INDEX on the FMC CDU to stop the DU LOOP TEST.

SUBTASK 31-62-41-860-005

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

——— END OF TASK ———

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Display Unit Test Format
Figure 402/31-62-41-990-802

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