

757

Aircraft Maintenance Manual

GPA Group plc

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To: All Holders of Boeing Document D633N132.

Attached is the current revision to Document D633N132, Boeing 757 Maintenance Manual for GPA Group plc.

FILING INSTRUCTIONS

This revision of the aircraft maintenance manual (AMM) replaces all previous microfilm cartridges and magnetic tapes.

This revision includes only the changed pages for printed pages (paper). File the pages according to the LEP for each chapter.

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For printed manuals this revision should be incorporated into the manual in the order indicated by the List of Effective Pages (LEP). The pages which are revised will be identified on the LEP by an R (Revised), A (Added), or D (Deleted).

Each page in the LEP is identified by Chapter-Section-Subject number, page number, page date, and page code. Pages replaced or obsoleted by this revision should be removed.

NOTE: Pages may be dated earlier, the same as, or later than the replaced page. Therefore, it is important that both the page date and page code in the LEP be used when filing pages. Agreement of the first two digits (left of decimal), between LEP code and page code, assures that the page is correct for the manual. Only revised pages will have the decimal and following number(s) appear on both the page and the LEP. The decimal and following numbers are for Boeing internal use and may appear on an old page but not appear on the LEP.

TRANSMITTAL LETTER

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TEMPORARY REVISIONS

Remove any Temporary Revisions that have a date earlier than the date of this revision.

Do not remove any Temporary Revisions (TRs) that have a date later than the date of this revision. TRs with a later date will be incorporated in the next revision of the manual (unless they are superseded by a subsequent TR).

A TR Status Report is sent with each TR. The TR Status Report has a list of all TRs that were sent for this manual during the last two scheduled revisions. At the top of the list are the date and time that the list was created.

When you have more than one TR, the TR Status Report with the latest date and time gives you the most current information.

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GPA Group plc HIGHLIGHTS

CHAPTER	05	- TIME LIMITS/MAINTENANCE CHECKS
05-51-01 205		Added the note for the inspection requirement.
05-51-04 202		Changed the format of the data for overspeed limit.
05-51-08 205		Added steps to clarify the examination of the fuse bolt and fuse pin.
05-51-13 201-206		Added the Galley Spill Conditionall Inspection Procedure.
05-51-19 206-207 05-51-19		Added the data to examine the external light fixture wires for lightning strikes damage. Added the data for examination of external lights.
206-207		Added the data for examination of external eights.
CHAPTER	09	- TOWING AND TAXIING
09-21-00 201,210		Changed the warnings from the general section to the task level.
CHAPTER	12	- SERVICING
12-21-05 304-305		Changed the steps to the lubrication of the ballscrew ballnut.
12-21-07 301-318		Added scheduled maintenance tasks.
12-21-07 301-302 307 312-313		Added the access panels for the right side.
12-21-07 302		Added data to open and close circuit breakers.
12-21-08 302 323-329		Added data to clarify the manual override lever on the LE flap PDU Bypass Valve.
12-21-09 302-304 306-307 315,318 325		Added steps to restore the system back to the usual position.
12-21-09 303,307 315,318 324		Added the step to remove the PDU lock.

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12-21-09 303 12-21-33 301-302 12-33-01 311	Added the use of a hand pump to lubricate the ballscrew and universal joints. Added removal and installation of access panel. Changed the warning from the general section to the task level.
CHAPTER 20	- STANDARD PRACTICES - AIRFRAME
20-10-09 824-825 827-828 844 850-851 880C-880E 880J	Changed the data for Deutsch tools to DMC tools.
20-10-32 201	Removed the data for coaxial cable testers Tektronix 1502 and 900AST.
20-10-36 401-404	Moved the procedure from AMM 20-10-33 to AMM 20-10-36.
20-30-01 209	Added the data to include the classes of a consumable material.
20-41-00 205	Added the step to set the ohmmeter to the 50 Vdc range.
20-55-54 601-642	Changed the resistance values.
20–60–02 201	Added data to the procedure to identify it as an enhanced zonal analysis procedure (EZAP) task.
20-60-03 201-202	Added data to the procedure to identify it as an enhanced zonal analysis procedure (EZAP) task.
20-60-04	Added data to the procedure to identify it as an enhanced zonal
201 20–60–07	analysis procedure (EZAP) task. Added Wire Bundles Protection - Maintenance Practices.
201-204	
CHAPTER 21	- AIR CONDITIONING
21-31-00 21	Added data for the absolute pressure switches in cabin pressure selector panel.
21-31-00 501,509 511	Added a step to make sure that the outflow valve is free of obstructions before electrical power is supplied during the test.
21–31–01 403	Added a step to make sure that the outflow valve is free of obstructions before electrical power is supplied during the
21-31-02 403	post-installation test. Added a step to make sure that the outflow valve is free of obstructions before electrical power is supplied during the post-installation test.

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21-31-03 205,208 210 21-31-04 404-405		Added a step to make sure that the outflow valve is free of obstructions before electrical power is supplied during the post-installation test. Added steps to the actuator installation task for removal/installation of the actuator crank arm to permit
21-31-04		installation of the forward bolt (3) to the actuator support frame. Added a step to make sure that the outflow valve is free of
405		obstructions before electrical power is supplied during the post-installation test.
21-31-05 404		Added a step to make sure that the outflow valve is free of obstructions before electrical power is supplied during the post-installation test.
21-32-01 201-218		Added alternate PPRV test for airplanes at high altitude airports.
21–32–01 212–213 216–217		Changed the PPRV crackpoint pressure to add ± -0.05 psig for the PPRV test equipment.
21 – 33 – 00 1		Changed the data in the General paragraph.
21-44-00 5		Reissued the page.
21–51–05 403		Added antiseize compound MIL-PRF-83483 (preferred) which replaces MIL-L-23398 antiseize compound. Added optional Never-Seez antiseize compound.
21-51-06 404		Added antiseize compound MIL-PRF-83483 (preferred) which replaces MIL-L-23398 antiseize compound. Added optional Never-Seez antiseize compound.
CHAPTER	22	- AUTO FLIGHT
22-00-00 13		Added abbreviation for MCDP data.
22-00-02 232		Re-issued the page.
22–33–00 102		Removed the Transducer call out.
CHAPTER	23	- COMMUNICATIONS
23-11-01 401 403-404		Change the format of the circuit breaker.
23-11-02 402,404		Changed the format of the circuit breaker.
23-11-03 401-402		Changed the format of the circuit breaker step.
23-11-04 401-402		Changed the format of the circuit breaker step.

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23-12-01 401	Changed the format of the circuit breaker list.
23-21-00 1	Re-issued the page.
23-31-00 7,12 23-31-00	Removed the Passenger Address System schematics and added reference to wiring diagrams and functional schematics. Re-issued the page.
603 23-31-08	Changed the circuit breaker format.
401 403–404	changed the chicuit breaker format.
23-32-00	Removed the Passenger Entertainment System schematics and added
6,9 23-32-11 403	reference to wiring diagrams and functional schematics. Re-issued the page.
23-41-00 1	Removed the Service Interphone System schematics and added references to wiring diagrams and functional schematics.
23-42-00	Remove the Cabin Interphone System schematics and added references
4,7 23-42-04	to wiring diagrams and functional schematics. Changed the wording and format of the data.
401-408 23-43-00	Removed the Ground Crew Call System schematics and added reference
1,4	to wiring diagrams and functional schematics.
23-51-00	Removed the Flight Interphone system schematics and added
4,6 23-71-00	references to wiring diagrams and functional schematics. Removed the Voice Recorder System schematics and added reference
CONFIG 1	to wiring diagrams and functional schematics.
23-71-00 CONFIG 2	Removed the Voice Recorder System schematics and added reference to wiring diagrams and functional schematics.
3,5 23-71-03 209-212	Added notes on which Test Sets can apply to which ULBs.
23-71-03 211-212	Added instructions to show the minimum necessary voltage for the TS200 test set.
CHAPTER 24	- ELECTRICAL POWER
24-23-01	Revised the data for Current Transformer Assembly Removal
402 24-32-01	procedure. Added the circuit breaker data for Transformer Rectifier Unit
403-404	(TRU) - Removal/Installation procedure.
CHAPTER 25	- EQUIPMENT/FURNISHINGS
25-00-00 801-856 25-11-00 3	Changed the date of the FAR 25.856(a) compliance and changed insulation material callouts. Removed the Captain's/First Officer's Power Seat system schematics and added references to wiring diagrams and functional schematics.



25-24-02		Re-issued the page.
401 25-25-01 201,212		Re-issued the page.
25-51-00 6		Re-issued the page.
25-51-00 8 25-51-22 401-406 25-61-00 401-404		Removed the Cargo Loader system schematics and added references to functional schematics. Changed the format of the task from numbered to a list of tasks and changed reference data. Changed the underline.
CHAPTER	26	- FIRE PROTECTION
26-22-00 503		Reissued the page.
26-22-02 604		Re-issued the page.
CHAPTER	27	- FLIGHT CONTROLS
27-00-02 201		Re-issued the page.
27–18–00 505		Re-issued the page.
27-21-19 401		Re-issued the page.
27-31-05 415		Changed the format of the data, when replacing more than one PCA.
27-38-00 501-514		Changed the data to show the -1001 EICAS computer callouts.
27-48-00 508-509		Added steps to make sure speedbrake are in the retracted position
27-51-11 409		before test. Added the data for BMS 3-38 as an approved alternative to BMS 3-27.
27-51-17 411		Added the data for BMS 3-38 as an approved alternative to BMS 3-27.
27-51-21 409		Added the data for BMS 3-38 as an approved alternate to BMS 3-27.
27-61-00 511		Reissue the page.
27-81-01 416		Re-issue the page.
27-81-18 410		Added the data for BMS 3-38 as an approved alternative to BMS 3-27.

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CHAPTER	28	- FUEL
28-00-00 201-210		Changed the task sequence.
28-00-00 208		Changed the step to clarify the fuel tank is entered.
28-11-00 215-216		Added the steps to defuel or transfer a fuel tank treated with biocide.
28-11-00 701,703 705-710		Changed the procedure related to BMS 10-20 and AMS-C-27725 (formally MIL-C-27725) to remove product specific information.
28–11–00 712		Re-issued the page.
28-11-03 410		Re-issued the page.
28-11-10 801		Changed the nomemclature for the access doors.
28-11-10 804		Changed the consumable number.
28-21-03 601		Removed the references to access doors 543AB/643AB.
28-22-00 23		Re-issued the page
28-22-00 23 28-22-00		Added the data for SB 28A0078 which added the ground fault interrupt (GFI) relay. Removed the duplicate steps.
534,536 28-22-03		Re-issued the page.
602 28-25-11 406,408		Changed the title for APU Fuel Shutoff Valve.
410-411 28-41-00 CONFIG 2 522,525 528		Re-issued the page
28-44-01 401-420		Reissued the page.
CHAPTER	29	- HYDRAULIC POWER
29-11-00 15,17 29-11-26 404,406		Removed the Main Hydraulic Systems schematics and added references to wiring diagrams and functional schematics. Added the CDCCL for bonding resistance check.
29-11-26 405-406		Re-issued the page.

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29-11-26 601	Re-issued the page.
29–11–26 603	Added the CDCCL for bonding resistance check.
29–21–00 8 29–21–01 602–603	Removed the Ram Air Turbine system schematics and added references to wiring diagrams and functional schematics. Added data for repairing RAT blade corners.
29-22-00 6,8 29-35-00 1-2	Removed the Hydraulic Power Transfer Unit system schematics and added references to wiring diagrams and functional schematics. Removed the Hydraulic Pressure Reservoir Indication system schematics and added references to wiring diagrams and system schematics.
CHAPTER 31	- INDICATING/RECORDING SYSTEMS
31-01-36 105 107-108	Added relay to the P36 panel and corrected customized data error.
31-01-37 105,108	Added relay to the P37 panel and corrected custimized data error.
31-25-00 501-502	Changed the format of the circuit breaker.
31–25–00 502	Re-issued the page.
31-31-00 7,10	Removed the wiring diagrams and added references to the wiring diagrams.
31-31-00 CONFIG 2 523	Changed the format of the data.
31-31-02 207-208	Re-issued the page.
31-31-02 209-211	Added notes on which Test Sets can apply to which ULBs.
31-31-02 211-212 31-31-03	Added instructions to show the minimum necessary voltage for the TS200 test set. Re-issued the page.
209 31–31–03 301 31–31–03	Changed the title of the Procedure (Install the Application Program into the FDAU) to show the software type. Re-issued the page.
401 31-35-06 401-402 31-41-00	Changed the format of the printer removal and installation procedure. Reissued the page.

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CHAPTER	32	- LANDING GEAR
32-09-02 505		Changed the data in Table 2, Column C1, to call out 0 Vdc for D4674 of Sys 2 Relay K10386
32-11-12 404		Added BMS 3-38 as an approved alternate to BMS 3-27.
32-11-12 404		Changed the nomenclature to clarify a typographical error.
32-11-24 418,422		Added the data for BMS 3-38 as an approved alternative to BMS 3-27.
32-11-25 208 215-217		Added BMS 3-38 as an approved alternative to BMS 3-27.
213-217		
32-21-24 408,413		Added the data for BMS 3-38 as an approved alternate to BMS 3-27.
32-21-25 209-210		Added the data for BMS 3-38 as an approved alternative to BMS 3-27.
32-32-04 403,405		Changed NOTE to add the disconnection of rod from the uplock hook prior to moving the uplock hook to the closed position for both the right and left hand gear; and connected the rod in the "put the airplane back to normal" paragraphs.
32-35-00 14-15 18		Removed the Alternate Gear Extension and Retraction Schematics and added references to wiring diagrams and functional schematics.
32-41-15 401-406		Added Hydraulic Brake Pressure Indicator - Removal/Installation procedure.
32-42-00 1 20-24 28-29 31-32 34		Removed the Antiskid/Autobrake system schematics and added references to wiring diagrams and functional schematics.
32-44-00 6,8 32-45-00 5		Removed the Parking Brake System schematics and added references to wiring diagrams and functional schematics. Changed the data for the main and nose gear tires.
32–61–00 13		Removed the Landing Gear Position Indicating and Warning system schematics and added references to wiring diagrams and functional schematics.
CHAPTER	33	- LIGHTS
33-22-00 503		Reissued the page.



34-11-01 Added the data to put the Pitot Probe function to usual operation 702 34-12-00 Changed the data to distinguish FAA and CAA requirements for RVS and Non-RVSM.	
34-12-00 Changed the data to distinguish FAA and CAA requirements for RVS	M
34-32-00 Changed the data of VOR/MKR circuit breaker label.	
8 34-32-00 Changed the data of the VOR/MKR circuit breaker labels. 501	
34-32-01 Changed the data of the VOR/MKR circuit breaker labels. 401,405	
34-43-05 Re-issued the page. CONFIG 2 404	
34-45-00 Removed the TCAS system schematics and added the wiring diagrams config 2 and functional schematics.	
7-8 10-11 17-18	
34-51-00 Changed the data of VOR/MKR receiver.	
34-51-01 Changed the data of the VOR/MKR receiver. 401-402	
34-51-02 Changed the data of the VOR/MKR receiver. 204-205	
34-51-03 Changed the data of the VOR/MKR receiver. 401 403-404	
34-53-00 Removed the ATC System sytem schematics and added references to CONFIG 3 wiring diagrams and functional schematics. 4,7	
34-53-00 Removed the ATC system schematics and added reference to wiring diagrams and functional schematics. 5,7	
34-53-00 Changed the data for the circuit breaker of the ATC antenna config 4 switch.	
34-57-00 Removed unnecessary data that make sure the circuit breakers are closed. 34-58-01 Added the data for BMS 3-38 as an approved alternate for BMS 3-2	
403-405 34-61-00 Changed the data for SB 34-379R3 which replaced non-PIP FMC with pegasus FMC. 12-13 80N-800	

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34-61-00 CONFIG 1 201-215	Changed the data for SB 34-379R3 which replaced non-PIP FMC with pegasus FMC.
34-61-00 CONFIG 4 201-212	Changed the data for SB 34-379R3 which replaced non-PIP FMC with pegasus FMC.
34-61-00 505 516-520	Changed the data for SB 34-379R3 which replaced non-PIP FMC with pegasus FMC.
34-61-00 523 34-61-01	Changed the data for SB 31-173R2 which changed the fuel quantity indicating system from Metrics units to English units. Added the data for SB 34-379R3 which replaced non-PIP FMC with
201-204	pegasus FMC.
34-61-01 403-404	Changed the data for SB 34-379R3 which replaced non-PIM FMC with pegasus FMC.
CHAPTER 3	5 - OXYGEN
35-11-00 601-606	Added the Crew Oxygen System - Inspection/Check procedure.
35-21-00 1	Reissued the page.
35-21-00 7	Changed the description of the S119 pressure switch and the P5 panel passenger oxygen switch.
35–21–00 9	Removed the Passenger Oxygen system schematics and added reference to wiring diagrams and functional schematics.
CHAPTER 3	6 - PNEUMATIC
36-10-00 1-2 33-38 40,42	Removed the pneumatic system schematics and added references to wiring diagrams and functional schematics.
36-11-00 527-529	Added steps to pressurize the pneumatic ducting with the APU or with a ground air source.
CHAPTER 3	8 - WATER AND WASTE
38-15-04 201-202 204,206	Removed a WARNING not applicable to the configuration.
38-30-00 3 38-31-00 205	Removed the waste disposal system schematics and added references to wiring diagrams and functional schematics. Changed the format.



CHAPTER	49	- AIRBORNE AUXILIARY POWER
49-11-01 416,441		Revised the data to check the PDC2 line for clearance.
49–15–05 405–406		Added the data that changes the steps to use antiseize compound on the threads and shank of the hinge bolts and changes the torque value of the hinge bolts.
49-27-04 208		Changed the torque on the oil drain plug.
49-31-06 403 49-61-05 204		Removed the 833730-1 wrench and the fuel nozzle fitting torque check. Changed the steps to close the circuit breaker before the BITE test.
	E1	
CHAPTER	51	
51-00-50 201		Added new task levels to the procedure.
51-00-51 201		Added new task level to the procedure.
51-00-52 201		Added new task level to the procedure.
51-00-54 201-202		Added a new task level to the procedure.
51-00-56 201-202		Changed the warning from general section to the task level.
51-00-57 201-202		Added a new task level to the procedure.
51–00–59 202		Added a task level to the procedure.
CHAPTER	52	- DOORS
52-11-00 201		Changed the data for the wind limit cautions and warnings.
52-11-09 409 52-11-25 511 52-51-00 512		Added the data for the grease consumable materials for the upper and lower cam plate and the lower hinge link. Added a step to redo the inspection check if the girt bar leaf springs or girt bar assemblies were replaced. Changed the format.
52-51-01 601		Added the data for the flight compartment door seal replacement.
52-71-00 506,508 510,512 514,516		Added the data for the door warning sensor test for each door.

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CHAPTER	53	- FUSELAGE
53-01-01 404-405		Added the data for the wire inspection task.
CHAPTER	54	- NACELLES/PYLONS
54-51-01 404,406 409-416 418 420-422 424 431-433		Changed the data for the removal and installation of the strut internal components.
CHAPTER	56	- WINDOWS
56-11-00 608-609		Changed the data for the moisture ingression note.
CHAPTER	57	- WINGS
57-54-01 404-405		Added the data for BMS 3-38 as an approved alternate to BMS 3-27.
CHAPTER	72	- ENGINE
72-00-00 CONFIG 1 669		Changed data that pretains to limits on burns and oxidation at the trailing edge.
72-00-00 CONFIG 2		Added new inspection criteria for HP turbine blades.
72-00-00 CONFIG 2		Changed data that pretains to limits on burns and oxidation at the trailing edge.
72-00-00 CONFIG 2 672,675		Added a new inspection for IP turbine vane bushes.
72–31–13 812		Changed the service bulletin numbers to the LP compressor blade part numbers.
72–31–13 814		Added the missing assembly location.
72-34-10 612		Added the correct acoustic panel inspection interval.



CHAPTER 78	- EXHAUST
78-31-00 CONFIG 1 501 515-516 518	Changed the sequence of the steps.
78-31-00 CONFIG 2 501	Re-issued the page.
78-31-20 442-443	Re-issued the page.
78-31-23 413,415	Added steps to tighten the bolts.
78-34-03 607 78-34-03 609	Removed requirement to carry out backlash procedure for the feedback actuator during the feedback cable procedure. Removed requirement to carry out backlash procedure for the feedback cable during the feedback actuator procedure.
78-34-05 402,405	Changed the description of the arrow stamped on the part.
CHAPTER 79	- OIL
79–21–07 701	Changed the procedure to show that the tasks are alternatives.
79–21–07 703	Added the missing steps for the pressure oil filter element.



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R = REVISED, A = ADDED OR D = DELETED 632 132 13N 20/09

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REVISION RECORD

All revisions to this manual will be accompanied by a transmittal sheet bearing the revision number. Enter the revision number in numerical order, together with the date filed and the initials of the person filing, in the form below:

REVISION NO.	DATE FILED	ву	REVISION NO.	DATE FILED	ВҮ	REVISION NO.	DATE FILED	вү

Revision Record Figure 1

REVISION RECORD



RECORD OF TEMPORARY REVISIONS

REVISION		INSERTED REMOVED		REVISION		INSERTED		REMOVED			
TR NO.	DATED	BY	DATE	BY	DATE	TR NO.	DATED	BY	DATE	BY	DATE

Record of Temporary Revisions Figure 1

RECORD OF TEMPORARY REVISION



INTRODUCTION

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INTRODUCTION

1. General

A. This publication was prepared by the Boeing Commercial Airplane Group in accordance with Air Transport Association of America Specification No. 100, Specification for Manufacturers' Technical Data. It contains the data necessary to service, troubleshoot, check, and repair systems and equipment installed in the 757 airplane for maintenance done on the line or in the maintenance hangar. The data for maintenance that is done away from the airplane (because of the need for special equipment) is contained in the Boeing 757 Component Maintenance Manual or suppliers' component maintenance manuals. The Airplane Maintenance Manual (AMM) also contains information on inspection and maintenance of airplane structure. But information on repair of airplane structure is contained in the 757 Structural Repair Manual.

NOTE: THIS MANUAL IS PREPARED SPECIFICALLY TO COVER THE BOEING AIRPLANES LISTED IN THE "LIST OF AIRPLANES" SECTION, FOR THE OPERATOR NAMED ON THE TITLE PAGE.

IT CONTAINS INSTRUCTIONS AND INFORMATION APPLICABLE TO THOSE SPECIFIC AIRPLANES, IN THEIR AS-DELIVERED CONFIGURATION, PLUS ANY APPLICABLE BOEING SERVICE BULLETINS OR OTHER OPERATOR CHANGES, THE INCORPORATION OF WHICH THE NAMED OPERATOR HAS NOTIFIED BOEING.

THE NAMED OPERATOR IS SOLELY RESPONSIBLE FOR THE ACCURACY AND VALIDITY OF ALL INFORMATION FURNISHED BY THAT NAMED OPERATOR OR ANY OTHER PARTY BESIDES BOEING AND, IF IN RECEIPT OF ACTIVE REVISION SERVICE, THAT ANY MODIFICATIONS TO THE AIRPLANE ARE PROPERLY REFLECTED IN THE MAINTENANCE INSTRUCTIONS CONTAINED IN THIS MANUAL.

OPERATORS ARE RESPONSIBLE FOR ENSURING THAT THE MAINTENANCE DOCUMENTATION THEY ARE USING IS COMPLETE AND MATCHES THE CURRENT CONFIGURATION OF THE AIRPLANE.

THE BOEING COMPANY ASSUMES NO RESPONSIBILITY IN THIS REGARD.

CUSTOMIZATION DOES NOT TRACK THE CONFIGURATION OF AIRCRAFT LISTED ON THE LIST OF EFFECTIVE AIRPLANES PAGE THAT HAVE BEEN CONVEYED TO ANOTHER OPERATOR.

THIS MANUAL IS NOT SUITABLE FOR USE, INCLUDING WITHOUT LIMITATION, GENERAL INSTRUCTIONS OR TRAINING, FOR ANY AIRPLANES NOT LISTED HEREIN, NOR DOES IT NECESSARILY APPLY TO LISTED AIRPLANES THAT HAVE BEEN CONVEYED TO OTHER OPERATORS.



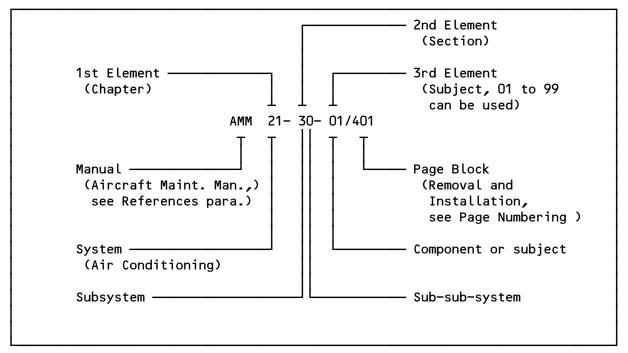
- B. Send communications about this publication to Boeing Commercial Airplane Services. Write "Attention: Manager, Maintenance Engineering Technical Services."
 - (1) For a quicker response, use the Publications Change Request form.
 - (a) This form, supplied by Boeing, is available to you through your publications organization or access it on MyBoeingFleet at: https://www.myboeingfleet.com:443/boldweb/pcr_select.bhtml.
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 - (2) You can also e-mail requests directly into the Boeing Communication system at this address: http://bcsweb.web.boeing.com/. Please provide this information:
 - (a) airline name
 - (b) your name
 - (c) phone number
 - (d) e-mail address
 - (e) airplane model-type
 - (f) title of manual or document number
 - (g) ATA Chapter-section-subject
 - (h) description of the change requested.

2. Manual Arrangement and Numbering System

- A. The Maintenance Manual is divided into chapters and groups of chapters. Each group and every chapter has a tab provided for ease of location. The chapterization separates the manual into the primary functions and systems of the airplane. The chapters are further divided into sections and subjects to provide for subsystem and individual unit breakout. Each chapter, section and subject is identified by an assigned number. Each page carries the assigned subject number, page number, page code and the revision date.
 - (1) In addition, the Power Plant chapters are issued in a self-contained set or sets (as applicable, if you have more than one engine type in your model fleet). These pages are further identified by an engine sub-logo, for example PW2000 SERIES ENGINES or RB211-535 SERIES ENGINES, placed to the right of the Maintenance Manual logo at the top of the page. The numbering system is described in detail in the paragraphs that follow.



- (2) Chapter Numbering
 - (a) Chapterization of the maintenance manual has provided a functional breakdown of the entire airplane. The chapter breakdown numbering system uses a three element number (XX-XX-XX). It provides for dividing the material into Chapters, Sections, and Subjects.
 - 1) The three elements of the indicator each contain two digits. For example:



(b) The chapter number (1st element) and the first number of the section number (2nd element) is assigned by ATA Specification No. 100. Material which is applicable to a system as a whole uses zeros in the 2nd and 3rd elements of the numbers. That is, the chapter number followed by "-00-00". For example:

AMM 22-00-00/001 (Auto Flight) is used for general description information which provides an outline breakdown of the sections in the chapter.



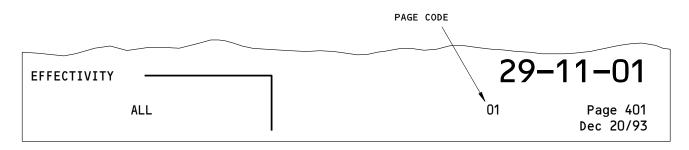
- (3) Effectivity and Configuration Numbering
 - (a) On each page, there is effectivity data at the lower, inner margin (Fig. 1).
 - (b) When a page applies to all airplanes, the word ALL is in the effectivity block.
 - (c) If the data does not apply to all airplanes, then the effectivity will be one of these types:
 - Physical description A description of the differences that you can see.
 - a) When a physical description is used, a reference to the applicable service bulletin, and PRR (production change) are provided when that is possible. This is done primarily for the benefit of airline engineering, and maintenance planning groups. For example:

AIRPLANES WITH VALVE INSTALLED AWAY FROM THE FILTER (POST-SB 28A-17 OR PRR 54009)

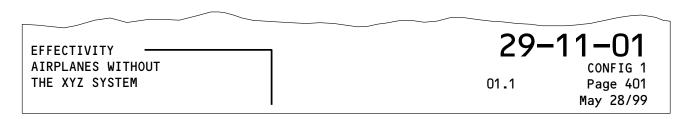
AIRPLANES WITH VALVE INSTALLED NEAR THE FILTER (PRE-SB 28A-17)

- 2) Component dash number The last digits of the identification number that are on an electrical box
- 3) Airplane effectivity numbers The airline three-letter code, and the numbers or letters that Boeing and each airline agreed on to identify each airplane. If the effectivity is applicable to all subsequent airplanes, the last digits will be 999.
 - For example: 205-999 indicates airplane 205 and all subsequent airplanes.
- (d) Immediately after this introduction, there is a cross-reference table of effectivity numbers, customer numbers, manufacturing serial numbers, and registration numbers.
- (e) Each paragraph can have an effectivity. Each effectivity is in upper-case letters, on the first line of the paragraph.

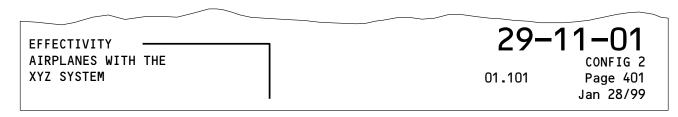




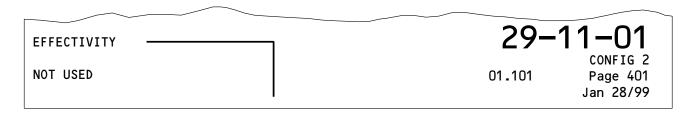
NON-CONFIG PROCEDURE EXAMPLE



CONFIG 1 PROCEDURE EXAMPLE



CONFIG 2 PROCEDURE EXAMPLE



CONFIG - NOT USED EXAMPLE

Effectivity, Page Code and Configuration Procedure Examples
Figure 1



- (f) When effectivity differences are extensive and the preceding method becomes cumbersome, thus distracting from the continuity of subject matter, new page blocks are created. These added page blocks are identified by the addition of a configuration code (CONFIG) immediately above the page number. A previously issued page block is re-issued to incorporate the configuration code as shown in Fig. 1. Configuration codes are issued at page block level only. They are usually used when a change to the airplane results in a major change to the manual. Configuration codes are typically used when there are multiple configurations of page block applicable to a customer's fleet.
 - 1) In some instances, you can have CONFIGs that are provided as place holders. These procedures will be indicated as "NOT USED" in the effectivity block in the lower left corner of the page (Fig. 1).
- (g) For the effectivity information in the power plant (70 series) chapters of the manual, two situations can exist: the word ALL placed in the effectivity block on a page means that the page pertains to either all airplanes or all engines, whichever the case may be. When the effectivity is limited to a system or component that remains with the airplane during the power plant replacement, the effectivity is expressed in a manner described in the preceding paragraphs. When a manual section, page, step or illustration is limited to an engine type or component, the effectivity is given using the engine model, physical difference, or part number.
 - The word "ALL" in the effectivity block on a page means that the page pertains to all airplanes (if you have only one engine type in your model fleet) or
 - 2) All engines (if you have multiple engine types in your model fleet), whichever the case may be.
- (h) When the effectivity is limited to a system or component that remains with the airplane during the power plant replacement, the effectivity is expressed in a manner described in the preceding paragraphs. When a manual section, page, step or illustration is limited to an engine type or component, the effectivity is given using the engine model, physical difference, or part number.
- (4) Page Numbering
 - (a) Each page block has its own page numbers. The page numbers are in the lower right corner of each page.



(b) The page blocks categorize the tasks that they contain. The page blocks are defined by ATA Specification:

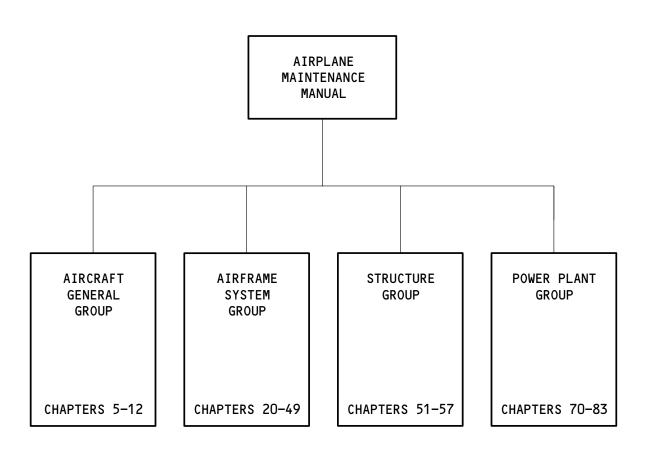
<u>Nomenclature</u>	Page Block
Description and Operation (D&O)	1 to 99
Fault Isolation (FI)	101 to 199
Maintenance Practices (MP)	201 to 299
Servicing (SRV)	301 to 399
Removal/Installation (R/I)	401 to 499
Adjustment/Test (A/T)	501 to 599
Inspection/Check (I/C)	601 to 699
Cleaning/Painting (C/P)	701 to 799
Repairs	801 to 899

(c) When it is convenient for the user to have different types of tasks in one page block, MAINTENANCE PRACTICES, the 201-to-299 page block, is used.

3. How to Use the Maintenance Manual

- A. The organizational breakdown of the Maintenance Manual is shown on Figure 2. All chapters of the manual are grouped under four major headings. To locate information, start with Figure 2 and identify the group of chapters related to the desired information, then identify the chapter within the group. With the chapter number identified, proceed to the chapter table of contents located at the beginning of each chapter. A tab has been provided for each chapter for ease of location.
- B. The Chapter Table of Contents lists all subsystems numerically. It also lists the Maintenance Practices, such as Fault Isolation, Adjustment/Test, etc. These units are listed in alphabetical order using the key noun as the title of the unit. The page number and effectivity are listed for each section or subject for which data is provided. The maintenance topics have assigned page blocks, such as all 501 to 599 numbers are adjustment/test pages. For a description of the complete page numbering system see the previous section and paragraph on "Page Numbering". After the section or subject has been identified, the information can be located within the chapter numerically per section/subject number.





Organizational Breakdown of Airplane Maintenance Manual Figure 2

INTRODUCTION

01



4. Maintenance Manual Features

- A. Description and Operation (page block 001)
 - (1) The description and operation portion of each chapter provides an explanation of system by function, operation, configuration and control. Sufficient information is provided for the maintenance personnel to understand the system construction and function.
- B. Component Location (page block 101)
 - (1) A formal presentation of component location information is included in the pages numbered 101 to 199 in the Maintenance Manual. Component location information includes an alphabetical Component Index and Component Location illustrations. The following information is included:
 - (a) The Component Index is a table which alphabetically lists the components assigned to the system or subsystem (subject) and a reference to the figure and sheet showing the locations of the components. Components which are not assigned to the subject, but are operationally related, are also listed. However, cross reference is provided to the system or subsystem where the components are assigned and their location shown.
 - 1) The quantity of each item, access and area, and a reference is provided. The access number identifies the access panel or door that must be opened to get to the component. The reference identifies the maintenance manual assigned subject number for the item (normally the removal/installation procedure), or the section where additional information relative to it may be found. Circuit breakers and other electrical components are referenced to the Wiring Manual Equipment List when a maintenance manual procedure is not provided.
 - a) The access number identifies the access panel or door that must be opened to get to the component.
 - b) The reference identifies the maintenance manual assigned subject number for the item (normally the removal/installation procedure), or the section where additional information relative to it can be found.
 - c) Circuit breakers and other electrical components are referenced to the Wiring Manual Equipment List when a maintenance manual procedure is not provided.
 - (b) The Component Location figure illustrates the access and location of components listed in the Component Index. Their physical location relative to known structural or system features is shown. Circuit breaker and panels location are shown. However, the circuit breaker position is found using the alphanumeric grid location provided in the index access/area column.



- (2) Use of Component Location Information
 - (a) Components are listed in the Component Index in alphabetical sequence. All circuit breakers are listed under the "CIRCUIT BREAKER" designation. Locate the components name in the left column of the Component Index. Determine the number of components installed on the airplane by referring to the "QTY" column. The access door to be opened, or the area of the airplane where the component is located, is determined by referring to the "ACCESS/AREA" column. This information is pictorially provided in the Component Locations figures.
 - (b) If detailed information is needed, such as removal/installation, refer to the Maintenance Manual section noted in the "REFERENCE" column. Additional information on circuit breakers and other electrical components is found in the wiring manual equipment list.
 - (c) When the area or access noted in the Component Index has been located, use the Component Location figure to recognize and identify the component under investigation.
- C. Fault Isolation (page block 101)
 - (1) Fault isolation information can be provided as an integral part of the maintenance manual, as a separate Fault Isolation Manual (FIM), or both, at the airline's option.
 - (a) Fault isolation provides the information used to identify, locate and correct any fault that is predicted to occur on the airplane from time to time. It also includes a duplication of the data used by flight crews, cabin crews and others to analyze and assign codes to airplane faults.
 - (2) Refer to the FIM Introduction for detailed information about the content and use of the Fault Islation Manual.
 - (a) For airlines with the FIM included with the maintenance manual, this introduction will follow the AMM introduction.
 - (b) For airlines with the FIM as a separate manual, this introduction will be at the beginning of the FIM.
- D. Servicing (page block 301)
 - (1) Chapter 12 of the manual is titled SERVICING. This chapter contains instructions for the replenishment of items such as fuel, oil, hydraulic fluid, water, tire pressure, etc. The tanks and reservoir capacities are indicated, and also, the ANA (Air Force - Navy Aeronautical) or other standard specification and grade of material to be used. The chapter contains scheduled and unscheduled servicing applicable to the whole airplane.
 - (2) Servicing information is also located within the other chapters of the manual. The information is provided as a result of accomplishment of maintenance actions. It includes items such as the inflation or refilling of shock struts, the lubrication of control cables, the sterilizing of potable water system, etc.



E. Testing - Three Levels

NOTE: After a unit or units are changed or after work has been done on a portion of a system, it is not intended that the entire adjustment/test procedure for the complete system should be accomplished. Only the portion or portions of the adjustment/test procedure that are applicable need be accomplished.

- (1) Testing information for the airplane is divided into three categories: Operational Test, Functional Test and System Test. Following are definitions of the three categories:
 - (a) Operational Test: That procedure required to ascertain only that a system or unit is operable. These tests usually require no special equipment or facilities other than that installed on the aircraft and should be comparable to the tests performed by the flight crews. It is not intended that the operational test of the unit shall meet the specifications and tolerances ordinarily established for overhaul, or major maintenance periods.
 - (b) <u>Functional Test</u>: That procedure required to ascertain that a system or unit is functioning in all aspects in accordance with minimum acceptable system or unit design specifications. These tests may require supplemental ground support equipment and should be more specific and detailed than an operational test. It should contain all necessary information to perform proficiency tests to maintain system or unit reliability at an acceptable level, without reference to additional documents. A functional test usually occurs at minor maintenance periods.
 - (c) <u>System Test</u>: That procedure containing all adjustment specifications and tolerances required to maintain system and/or unit performance at maximum efficiency and design specifications. It shall be self-contained and may duplicate other tests. It is normally used at major maintenance periods.
- (2) If you cannot complete a test successfully, record the indication or problem then refer to the Fault Isolation Manual.
- (3) The Operational Test, Functional Test, and System Test may include steps to make sure that a system is operational or adjusted. These steps include references to procedures that maintenance personnel may need to do only if they have indications that the system is not serviceable or adjusted.
- (4) The operational and system tests are normally accomplished at the system level. The general paragraph at the beginning of each adjustment/test block of pages (page 501 through 599) outlines the test sequence. The functional test relates to component performance after installation and is normally contained with the component maintenance practices. The recommendation to test or not test after a maintenance action is provided at the end of the appropriate maintenance practices subtopic.



- F. AMTOSS (Airplane Maintenance Task-Oriented Support System)
 - (1) AMTOSS structure makes automated data retrieval easier. Procedures have the structure that is shown below:
 - 1. General
 - 2. (TASK)
 - A. General
 - B. Equipment
 - C. Consumable Materials
 - D. Parts (TOD Items only)
 - E. References
 - F. Access
 - G. (TOPIC)
 - (1) (SUB-TASK)
 - (a) Sub-step
 - (b) Sub-step
 - (c) Sub-step
 - (2) (SUB-TASK)
 - (3) (SUB-TASK)
 - (a) Sub-step

CAUTION: MAKE SURE THAT YOU DO ALL OF THE STEPS TO THE END OF THE TASK.

LARGE BLANK SPACES CAN OCCUR AT THE BOTTOM OF PAGES WHICH DO

NOT ALWAYS INDICATE THAT YOU ARE AT THE END OF THE TASK. IF

YOU DO NOT MAKE SURE THAT YOU COMPLETED THE TASK, DAMAGE TO

EQUIPMENT OR SYSTEM MALFUNCTION COULD OCCUR.

- (2) Tasks are complete procedures for specific maintenance requirements. For example:
 - (a) R/I page blocks usually contain two tasks:
 - 1) Removal of the LRU
 - 2) Installation of the LRU
 - (b) A/T page blocks usually have a minimum of three tasks:
 - 1) Operational Test of the System



- 2) Functional Test of the System
- 3) System Test of the System
- (3) Topics are headings used in tasks to group sub-tasks. There are one or more topics in each task. Example topic headings:

Prepare for the Removal Put the Airplane Back to its Usual Condition

- (a) Less complicated procedures use the topic "Procedure."
- (4) Sub-tasks are the specifiction steps in tasks.
 - (a) A sub-task refers to specific equipment. For example, "Disconnect hydraulic lines" is a sub-task.
 - (b) Separate skill requirements are put in separate sub-tasks. For example, a step involving hydraulic tubing is never combined with an action involving electrical wiring.
- (5) AMTOSS Codes
 - (a) All tasks and sub-tasks have an AMTOSS identification code.
 - The AMTOSS identification codes will print in the maintenance manual with the first step of its task or subtask.
 - (b) Examples of AMTOSS identification codes:
 - 1) Task:

TASK 29-11-05-404-001-002
3. Engine Driven Pump Installation

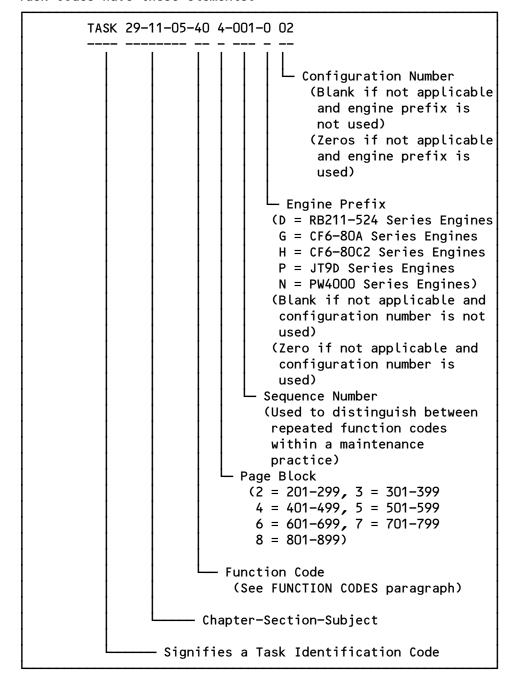
2) Subtask:

s874-001-002

(9) Bleed air from system

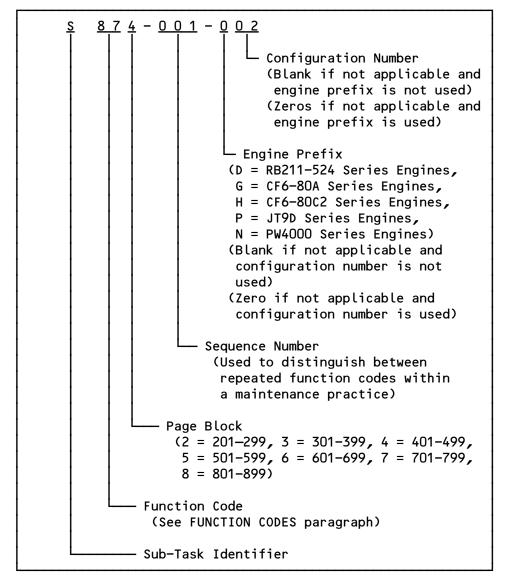


(c) Task codes have these elements:





(d) Sub-task codes have these elements:





- (6) Function Codes
 - (a) All tasks and sub-tasks have a function code.
 - (b) Each function code has two digits.
 - 1) The first digit puts types of jobs in groups at a high level (For example, 70 is testing, and checking).
 - a) The second digit of the high-level function codes is a zero.
 - 2) When the second digit is not a zero, it defines a specific type of job (For example, 76 is electrical checks).
 - a) Function codes 71 through 79 are subordinate to 70.
 - b) Function codes 71 through 79 are specific checks and tests.
- (7) Function Code List

AMTOSS Code / Description		Definition
00	REMOVAL	
01	Remove/open for access	Removal or opening of access plates; opening of doors. Removal or disconnection of components, structural members, tubing, or items required to provide access for performing the task.
02	Remove unit/ component	The removal of the unit/component identified as the task, and attaching parts.
03	Remove unit/ component, disconnect, loosen, remove item	Disconnecting/loosening/removal of lines, nuts, clamps, brackets, etc., attached to the component being removed required to accomplish the task. Removal of sub-task items such as light bulbs, sockets, lenses, caps, seals, bearings, screens, screws, etc. This can also include capping of lines, electrical connectors, etc.
04	Deactivate	Action taken to render a system inoperable for maintenance purposes or for operation under dispatch deviation procedures.
05	(Unassigned)	
06	(Unassigned)	
07	Remove/delete software data	



AMTOSS	Code / Description	Definition
08	Remove Test/ Support Equipment	Removal of any item of test equipment (pitot static tester, flight control rigging quadrant, etc.) attached to the aircraft/system/unit to indicate condition or position of systems/components.
09	(Unassigned)	
10	CLEANING	
11	Chemical cleaning	Chemical cleaning is defined as the removal of surface deposits by use of a chemical cleaning agent. Includes any combination of cleaning actions involving chemicals. Also includes preparation of materials.
12	Abrasive cleaning	Abrasive cleaning consists of the removal of surface deposits from a part by wet or dry particle impingement.
13	Ultrasonic cleaning	Ultrasonic cleaning refers to the removal of surface deposits and entrapped material by use of high frequency sound waves to produce cavitation at the surface of the part. Cleaning is performed in a liquid bath that transmits the sound energy and keeps the removed material in suspension.
14	Mechanical cleaning	Mechanical cleaning involves the use of a brush, felt bob, or other hand (or machine) action to remove surface deposits from a part.
15	Stripping	Stripping consists of removal of paint or coatings.
16	Miscellaneous cleaning	Miscellaneous cleaning consists of the removal of deposits from small passages with a compressed air blast, miscellaneous hand cleaning, etc.
1		



AMTOSS Code / Description	Definition
17 Flushing	Flushing of a fluid system consists of dirt or debris removal by passage of fluid through the component or system.
18 (Unassigned)	
19 (Unassigned)	
20 INSPECTION/ CHECK	Includes checks for wear, physical deterioration, or damage.
21 General Visual	A visual inspection/check is a thorough visual examination of a zone, system, subsystem, component and/or part, to a level defined by the manufacturer, to detect structural failure, deterioration, or damage; and to determine the need for corrective maintenance. NOTE: Periodic zonal (area) inspections /checks are numbered using ATA
	Chapter O5 as the first element.
22 Detailed dimensional	A detailed/dimensional inspection/check is a comparison of the dimensions and material condition of parts, subassemblies, or assemblies with the specifications contained in technical manuals and/or blueprints, to detect deviations from established standards and limits, for the purpose of determining the need to discard or repair and/or to verify that proper corrective maintenance has been accomplished. Although some detailed/dimensional inspection/check tasks/sub-tasks may not require measurements, the complete spectrum of detailed dimensional tasks/sub-tasks requires a variety of precision measuring equipment to determine items such as runout, concentricity, flatness, parallelism, hardness, squareness, thickness, clearness, angularity, diameters, radii, depth, etc.



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AMTOSS Code / Description	Definition
23 Penetrant	This type of inspection refers to the fluorescent penetrant inspection of parts to detect surface cracks.
24 Magnetic	Magnetic inspection is defined as the magnetic particle inspection of parts to detect surface cracks in magnetic materials.
25 Eddy Current	Eddy current inspection consists of inspecting for cracks, porosity, inclusions, or other nonhomogeneous material structure by use of high frequency electromagnetic wave equipment. Parts are scanned and compared to similar parts or test specimens having known material defects.
26 X-Ray/Holographic	X-ray/holographic inspection involves inspecting for subsurface cracks, porosity, inclusions, or other nonhomogeneous material structure by passing x-ray through a part and recording an image on photographic film.
27 Ultrasonic	Ultrasonic inspection involves inspecting for subsurface cracks, porosity, or other nonhomogeneous material structure by use of use of contact pulse echo ultrasonic techniques.
28 Specific/Special	Special inspection/checks involving processes not included in codes 21 thru 27 and 29.
29 Borescope	Boroscope inspection refers to any inspection requiring the use of boroscope equipment.



AMTOSS Code / Description		Definition
30	CORRECTION/ REPAIR	
31	Welding/Brazing	Welding/brazing refers to the joining by fusion welding, resistance welding, spot welding, furnace brazing, torch brazing, induction brazing, soldering, electron beam welding, plasma arc welding, etc. This category includes hard facing.
32	Machining/ Reaming/Blending	These consist of processing to obtain a desired shape or finish by grinding, lathe turning, boring, reaming, broaching, milling, machine drilling, machine lapping, honing, sizing, machine polishing, machine buffing, machine cutting, electrochemical machining (ECM), electrodischarge machining (EDM), roll forming, stamping, machine punching, blanking, etc.
33	Composite	Composite repair consists of repairing composite material parts by hand cutting, hand drilling, hand polishing, hand grinding, hand lapping, hand riveting, blending, cutting or routing out materials by hand, cutting and fitting patches, burring, planishing, hand sawing, scraping, stop drilling, hand tapping, installing helical coil inserts, heating and chilling of parts, etc.



AMTOSS Code / Description	Definition
34 Fiberglass/ Plastic/ Honeycomb/Epoxy	Consists of repairing fiberglass/plastic/honeycomb/epoxy material parts by hand cutting, hand drilling, hand polishing, hand grinding, hand lapping, hand riveting, blending, cutting or routing out materials by hand, cutting and fitting patches, burring, planishing, hand sanding, hand sawing, scraping, stop drilling, hand tapping, installing helical coil inserts, heating and chilling of parts, etc. This function code is also used to identify the joining of parts with an adhesive, cementing material or fusible material. Included are silicone rubber bonding and molding, adhesive bonding, fiberglassing, rubber molding, and curing of bonding and molding materials.
35 Miscellaneous Repair	Miscellaneous repair consists of repairing any parts not otherwise covered herein by hand cutting, hand drilling, hand polishing, hand grinding, hand lapping, hand riveting, blending, cutting or routing out materials by hand, cutting and fitting patches, burring, planishing, hand sanding, hand sawing, scraping, stop drilling, hand tapping, installing helical coil inserts, etc.
36 Leakage repair	Leakage repairs consist of those activities required to eliminate a detected leakage.
37 Painting	Painting consists of the application of primer and/or finish coats for protection or appearance. Includes mixing and preparation of materials.
38 Plating	Plating consists of the application of chemical plating, chromium, cadmium, etc. to build up worn surfaces or for protection or appearance.



AMTOSS	Code / Description	Definition
39	Sealing	Application of sealants, fairing compounds, etc., to prevent fluid leakage, control corrosion, fill gaps, provide locking, aerodynamic smoothing, etc. Includes preparation of materials.
40	INSTALLATION	
41	Install/Close items removed opened for access	Installation or closing of access plates, closing of doors, installation of components, structural members, tubing, or any item that was removed or opened in order to provide access for performing the task.
42	Install reconnect unit, tighten safety component, item	The installation of the unit, component identified as the task (may include attaching hardware). Reconnect, tighten, safety any lines, nuts, clamps, brackets, etc., required to be loosened, disconnected in order to perform the task. This can also include uncapping of lines, electrical connectors, etc.
43	(Unassigned)	
44	Reactivate	Actions taken to restore a system to normal operation which has been previously deactivated.
45	(Unassigned)	
46	(Unassigned)	
47	Install/load Software/Data	Action taken to install data or software into a computing system.



AMTOSS	Code / Description	Definition
48	Install test/support equipment	Installation of any item of test equipment (i.e. pitot static tester, flight control rigging quadrant, etc.) used on the aircraft, system, unit to determine system, component condition or position. Installation of any item of support equipment (i.e., fish pole hoist, hydraulic jeep, safety locks, special tools, etc.) used on the aircraft, system, unit to assist in performing the task or subtask, excluding test equipment.
49	(Unassigned)	
50	MATERIAL AND AIRCRAFT HANDLING	
51	Shipping	Shipping is defined as the movement of any item, subassembly, or assembly from the time it is packaged until it reaches its intended destination.
52	Receiving	Receiving is defined as the receipt activity for any incoming item, subassembly, or assembly.
53	Packing	Packing consists of installing parts, subassemblies, components, or units in shipping containers. This includes all capping of lines, installation of plugs, etc.
54	Unpacking	Unpacking is defined as the removal of items, subassemblies, or assemblies from shipping containers. This includes all removal of all protection material.



AMTOSS	Code / Description	Definition
55	Storage/Return to service	Storage is defined as the safekeeping of any item, subassembly, or assembly until required for use. May require unit servicing and special handing. Return to service is defined as the instructions necessary to prepare any item, subassembly, assembly for operation after a period of storage or to prepare the aircraft for operation following mooring, parking, or a period of storage.
56	Marshalling/ Positioning	Marshaling refers to the collecting of individual parts, subassemblies, or assemblies prior to release for assembly. Positioning refers to movement from one fixed state to another.
57	Engine Ferry/ Pod maintenance	Engine ferry, pod maintenance pertains to performing necessary preparations before and after transporting an engine by aircraft ferry method.
58	Engine Ferry/ Pod maintenance	Procedures covering aircraft lifting, jacking, shoring, towing, taxiing and lowering.
59	(Unassigned)	
60	SERVICING, PRESERVING, LUBRICATING	
61	Servicing	Servicing is defined as that maintenance action required to sustain a unit or system in proper operating status (Replenish fluids, gas charging, etc.). Includes servicing functions not specifically delineated by further 60 series breakdown.



AMTOSS	Code / Description	Definition
62	Preserving	Preserving pertains to preparing, an item or aircraft for safekeeping from decomposition or deterioration. This includes repairing for storage by applying a preservative layer to, and desiccants in, hardware It also includes the prevention of microbial growth in fuel tanks, application of corrosion inhibitors and surface protection such as painting, etc.
63	De-preserving	De-preserving pertains to removing the preservative layer and, or desiccants from the item or aircraft in preparation for installation or operation.
64	Lubricating	Lubricating is defined as applying oil, grease, or dry film type lubricant on moving parts in order to reduce friction or wear, or to cool the item.
65	Fueling, defueling	The adjustment of the aircraft fuel level as required to perform the task.
66	Deicing/ Anti-icing	Ice and snow removal from parked aircraft and applications to prevent the accumulation of ice and snow.
67	Disinfect/ Sanitize	Procedures provided for health reasons (i.e., purification of potable water, etc.)
68	Drain Fluid	Drain fluid is used when fluid must be removed during servicing or other maintenance operations.
69	(Unassigned)	
67	Anti-icing Disinfect/ Sanitize Drain Fluid	and applications to prevent the accumulation of ice and snow. Procedures provided for health reasons (i.e., purification of potable water, etc.) Drain fluid is used when fluid must be removed during servicing or other



AMTOSS Code / Description	Definition
70 TESTING, CHECKING	Includes tests and checks which determine proper functioning of systems and components.
71 Operational	That procedure required to ascertain only that a system or unit is operable. These tests should require no special equipment or facilities other than that installed on the aircraft and should be comparable to the tests performed by the night crews. It is not intended that the operational lest of the unit shall meet the specifications and tolerances ordinarily established for overhaul, or major maintenance periods.
72 Functional	That procedure required to ascertain that a system or unit is functioning in all aspects in accordance with minimum acceptable system or unit design specifications. These tests may require supplemental ground support equipment and should be more specific and detailed than an operational test. It should contain all necessary information to perform proficiency tests to maintain system or unit reliability at an acceptable level without reference to additional documents.
73 System	That procedure containing all adjustment specifications and tolerances required to maintain system and or unit performance at maximum efficiency and design specifications. It shall be self-contained and may duplicate other tests. It is normally used at major maintenance periods.
74 BITE	Those checks conducted using built-in-test equipment.
75 Special	Special checks such as smoke check, sniff check, audible checks, etc.
	



AMTOSS (Code / Description	Definition
76	Electrical	Electrical checks to determine continuity, voltage, resistance, etc.
77	(Unassigned)	
78	Pressure	Pressure check involves the measurement of pressure or the effect of pressure, or establishing the ability of a normally pressurized component or system to operate properly.
79	Leak	Leak check determines the ability of a component or system to operate without leaking or leaking within permissible limits. Includes specific steps such as application of leak check solution.
80	MISCELLANEOUS	
81	Fault isolation	Fault isolation is the systematic process of identifying a malfunctioning element in a system and determining the actions necessary to restore the system to its normal condition.
82	Adjusting, aligning, calibrating, rigging	Adjusting, aligning, calibrating consists of making a physical correction to ensure proper placement, operation, or testing of a system or component. Rigging pertains to hooking up, arranging or adjusting cables or linkage for proper system, operation.
84	Prepare for Restore to normal	Used when separate tasks are provided for preparing for maintenance or restoring to normal after maintenance when these procedures are lengthy and identical for several applications.
		NOTE: System, hardware identification must be included in task or sub-task title.



AMTOSS (Code / Description	Definition
85	Operator Modification Incorporation	Operator modification incorporation pertains to performing the work specified in the operators modification. This provides for identification of modification tasks at the task level with sub-tasks recognizing any functional changes (e.g., chemical, detailed, dimensional, cleaning, etc.) necessary to incorporate the modification order.
86	Aircraft/System configuration	Actions required to bring aircraft system, unit, or test equipment to a prescribed condition or position using normal functions and operations (e.g., opening or closing circuit breakers or switches, positioning controls or control surfaces, calibration or operation of test equipment, pressurizing or depressurizing, raising or lowering landing gear, energizing electrical system). Includes packing flexible parts into normal pre-operation configuration (e.g., oxygen masks, escape slides).
87	Bleeding	Drain fluid from the system or unit, operate system, etc., to remove air bubbles.
88	Heating/Cooling	Application of heating and cooling required for removal installation adjustment or testing.
89	Airline Maintenance	Customer use



AMTOSS Code / Description		Definition	
90	CHANGE = REMOVE + INSTALL	For control purposes, this function will be used to combine the O2 (Remove unit, component) and 42 (Install unit, component) codes.	
91	Standard Practices	Simple procedures encountered repeatedly during maintenance which are located in a standard practices section and referenced in other procedures to avoid repetition.	
92	(Unassigned)		
93	Marking	Temporary or permanent markings required for part location, alignment, or identification during maintenance.	
94	Job Set-up/ Close-up	Positioning and removal of access platforms, steps, warning notices, fire extinguishers, or other items of ground support equipment; picking up foreign objects prior to engine operation	
95	Masking	Masking or unmasking required for painting, clearing, surface protection, etc.	
96	Replace	Used when removal and installation of small items must be combined in a single task such as relamping, seal replacement, etc. Restricted to items of a minor nature and details replaced as part of a repair task (bushings, bolts, 0-rings, seals, filters, etc.).	
97	Data Recording/ Calculating	Recording of data required for monitoring, testing, adjusting, checking, etc.; and subsequent calculations.	
98	Manual operation, or positioning	Positioning or operating a system, component, or unit manually which is normally powered, such as turning engine rotor, manually translating thrust reverser, etc.	
99	Illustrations, tables, etc.	This provides a unique number for data retrieval, which cannot be obtained by a task or subtask number.	



- G. General
 - (1) This paragraph explains the uses, and limitations of the task.
- H. Equipment
 - (1) This paragraph lists the Boeing, vendor, and engine manufacturer tools and test equipment.
 - (2) The tools and equipment that are not usually in a mechanic's tool box are listed in the Equipment paragraph. Examples are:
 - (a) Bonding meter
 - (b) Clean, lint-free cloth
 - (c) Container, 1 Gallon, suitable for collecting fuel
 - (d) Plywood Sheet, 48 x 24 x 1/2 in. approximately
- I. Consumable Materials
 - (1) This paragraph lists the consumable materials that are used in the task.
 - (2) Each material has a six-character code. The first character identifies the type of material:

Example: D00196 Fluid - Hydraulic, Fire-Resistant, BMS 3-11

- (a) A Adhesives, Cements, Sealants
- (b) B Cleaners, Polishes
- (c) C Finishing Materials
- (d) D Lubricants (Oils, Greases, Dry Lubes)
- (e) E Strippers
- (f) F Welding Materials
- (g) G Miscellaneous Materials
- (3) The Boeing Spares Department sends each airline a list of all consumable materials used in the Aircraft Maintenance Manual, Component Maintenance Manual, and Structural Repair Manual. This report is entitled "U-FILE BULK MATERIALS LIST."
- (4) Regulations sometimes make alternatives necessary. To make it easy to find a solvent, there are tables of alternative solvents in the Airplane Maintenance Manual (AMM) and the Standard Overhaul Practices Manual (SOPM). Refer to AMM 20-30-80 for these tables. The tables show the solvents, the material bulk code, and related specifications. For instructions about the tables, refer to AMM 20-30-02/201.



- J. Parts Data (Task-Oriented Data (TOD))
 - (1) Task-oriented data (TOD) procedures include a cross-reference table to the Illustrated Parts Catalog (IPC). This table shows the IPC subject, figure, and item numbers for the major components.
 - (2) The table also shows expendable parts. Expendable parts are always replaced by a new part when the the expendable part is removed during the task.
- K. References
 - (1) This paragraph shows the applicable references. The list tells you the other procedures that are referenced in each task.
 - (2) The references can refer to a different manual. The page block is included when it is applicable (e. g., /301, or /501). Examples:
 - (a) AMM 12-12-01/301, Hydraulic System
 - (b) AMM 29-11-05/401, Engine Driven Pump
 - (c) AIPC 29-11-60, Fig. 1
 - (d) SSM 29-11-01
 - (e) OHM 29-11-60
 - (f) CMM 29-11-11
 - (g) WDM 29-11-17
 - (3) Abbreviations for major manuals:
 - (a) AMM = Airplane Maintenance Manual
 - (b) CMM = Component Maintenance Manual
 - (c) FIM = Fault Isolation Manual
 - (d) AIPC = Airplane Illustrated Parts Catalog
 - (e) OHM = Overhaul Manual
 - (f) SRM = Structural Repair Manual
 - (g) SSM = System Schematics Manual
 - (h) WDM = Wiring Diagram Manual

L. Access

- (1) This paragraph lists the locations and access panels.
- (2) There are two sub-paragraphs:
 - (a) Location Zone
 - (b) Access Panel
- (3) Each location zone, and access panel has a three-digit code. The access panel code can also have three other characters.



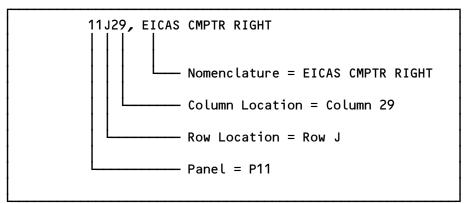
(4) Non-powerplant example:

(1) Location Zone
 335 Left Hand Inboard Elevator
 (2) Access Panel
 335EBL Left Structure Access Door

(5) Powerplant example:

(1) Location Zone 412 Engine 1 — Fan Case 4 o'clock (2) Access Panel 414 Right Fan Cowl Panel — Engine 1

- (6) Engine position is identified in clock positions standing behind the engine and looking forward.
- M. Circuit Breakers
 - (1) Circuit breaker panels P6 and P11 in the flight compartment, and P31, P32, P34, P36, and P37 in the main equipment center, have grid codes printed on the face of the panels. Circuit breaker rows are identified with alphabetical letters from bottom to top beginning with A. (Rows I, O, and Q are not used.) Columns are identified from left to right with numbers beginning with 1.
 - (2) Circuit breakers on these panels are identified with a grid location followed by the circuit breaker nomenclature. For example:



(a) In some cases, the same circuit breaker is at a different grid location on different airplanes. For circuit breakers that can have multiple grid locations, both grid locations are shown. For example:

11A15 or 11M16, RIGHT PACK STANDBY CONTROL



(b) The same circuit breaker can also have different nomenclature on different airplanes. For circuit breakers that have multiple nomenclatures, both are shown. For example:

11J32, EICAS DISPLAY SELECT or EICAS PILOTS DSP

N. Torque Values

- (1) Standard torque values for airframe maintenance tasks are included in Chapter 20 of Airplane Maintenance Manual (AMM).
- (2) Standard torque values for electrical terminations are included in Chapter 20 Standard Wiring Practices Manual (SWPM).
- (3) Standard torque values for engine maintenance tasks are included in Chapter 70 of Airplane Maintenance Manual (AMM).
- (4) Non-standard torque values for maintenance tasks are included in the applicable installation step within the task.

5. Equivalent Tools, Fixtures and Test Equipment

- A. Some of the procedures in this manual identify tools or equipment. But you can use equivalent alternatives unless the procedure tells you the specified tool or equipment item is mandatory. If you use alternative tools or equipment, make sure that they give the same results and are as safe to the parts and personnel as the tools or equipment specified in the procedure.
 - (1) Tools in this manual identified with an "ST" prefix are designed by the Boeing Commercial Company. Detail drawings of these tools are available upon request.

6. <u>Crew Station Nomenclature</u>

- A. The following crew station designations have been established as standard and have been used throughout the Maintenance Manual to identify crew stations and related panels and controls.
 - (1) Captain
 - (2) First Officer
 - (3) First Observer
 - (4) Second Observer
 - (5) Cabin Attendants

7. <u>List of Effective Pages</u>

A. There is a list of effective pages for each chapter at the beginning of the chapter for printed manuals. These pages are identified with the words "Effective Pages" in the lower right corner of the page.



8. <u>Table of Contents</u>

- A. Each chapter begins with a Table of Contents.
- B. All sub-sub-systems are listed with the supporting items indentured below these systems. The components are listed alphabetically by the main noun. The major entries show the chapter-section-subject number, the beginning page number, and the effectivity.
- C. The table of contents has this structure:

System Numeric Arrangement
Sub-system Numeric Arrangement
Sub-sub-system Numeric Arrangement
Component/Subject Alphabetical Arrangement
Pageblock Numeric Arrangement

NOTE: Pageblocks can occur at all levels.

9. <u>Chapter Responsibilities</u>

A. Boeing Commercial Airplanes is responsible for all chapters of this manual except chapters 1 through 4, which are reserved for individual airline use. The engine manufacturer's data has been combined with Boeing information and released on a page carrying the Boeing masthead. In all chapters, vendor components and units are covered to the extent that information is available from the vendors.

10. Use of Logic Diagrams

- A. Definition of Logic as Used in the Maintenance Manual
 - (1) The airplane has a large number of solid-state logic circuits, employed in many and varied systems. Logic circuits are two-stage devices, referred to as binary (base 2) elements, which are used to perform computing or general purpose data processing.
 - (a) As a simple example of a binary element, consider a light switch, which may turn a light on or off. Electronic elements such as transistors or microelectronic circuits are also two-state devices, and may be used as switches. These two-state devices are either on or off, open or closed, engaged or disengaged, active or inactive, true or false.
 - (b) A two-state device is described by binary logic, which uses the base 2 numbering system. In the base 2 or binary systems, only the digits 0 and 1 are used, compared to the decimal system which uses digits 0 through 9. The binary system is used with electronic devices since electronic devices may operate in two simple states, such as a transistor conducting or at cutoff. Binary numbers processed in the airplane systems are converted to decimal readouts as required by simple conversion: i.e., the number 10101 in base 2 is the same as 21 in base 10.



- (c) In logic circuits, the digit 1 represents an active, significant, or true state while the digit 0 represents the inactive or false state. The representation of 1 or 0 does not imply power consumption, polarity of voltage, or energy difference, but only the active state.
- (d) Logic circuits follow the rules of Boolean Algebra, which defines algebraic rules while using the binary numbering system in logic applications. In the Boolean algebra system, subtraction and division is not used, and all logic is presented in terms of AND or OR. The symbols explained in Fig. 3 are accompanied by these equations.
- B. Logic Presentation
 - (1) Logic presentation in this maintenance manual reflects the logic operation of the equipment, and is required by the technician for maintenance. The logic may be positive, negative, or hybrid.
 - (a) When the more positive potential is consistently selected as the logic 1 state, the system or device is considered to be in positive logic.
 - (b) When the more negative (or less positive) potential is consistently selected as the logic 1 state, the system or device is considered to be in negative logic.
 - (2) The presentation of logic requires the use of "bar" terms, which is a bar placed over the mnemonic term to show the inverse logic. That is, if a logic equation stated that output of a function is logic 1 or active when the autopilot is not engaged, the term is then AUTOPILOT ENGAGED (read as autopilot engaged not, autopilot not engaged, or autopilot engaged—bar). This bar term is typical of logic used in monitor, alarm, disengage and warning circuits.



LOGIC SYMBOLS

1. A (•) DESIGNATED THE BOOLEAN AND FUNCTION AND SYMBOL DESIGNATES A LOGIC AND GATE. TO GET A LOGIC 1 STATE OUTPUT FROM AN AND GATE, ALL INPUTS MUST BE AT THE LOGIC 1 STATE.

THE LOGIC EQUATION FOR AN AND GATE IS A \bullet B = X, WHICH STATES THAT BOTH A AND B MUST BE IN THE LOGIC 1 STATE IN ORDER TO GET A LOGIC 1 STATE OUTPUT AT X.

2. A (+) SYMBOL DESIGNATES THE BOOLEAN OR FUNCTION AND A SYMBOL DESIGNATES A LOGIC OR GATE. A LOGIC 1 STATE OUTPUT WILL BE PRESENT FROM AN OR GATE IF ANY INPUT IS AT THE LOGIC 1 STATE.

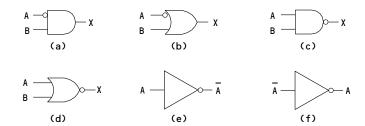


THE LOGIC EQUATION FOR AN OR GATE IS A + B = X, WHICH STATES THAT IF EITHER A OR B IS IN THE LOGIC 1 STATE, THE OR LOGIC OUTPUT AT X WILL BE A LOGIC 1 STATE.

Logic Symbols Figure 3 (Sheet 1)



3. A CIRCLE ON AN INPUT OR OUTPUT (-○-) DENOTES AN INVERTING FUNCTION, IN WHICH THE LOGIC LEVEL IS INVERTED. THE INVERSION INTRODUCES THE BAR TERM AT THE INPUT OR OUTPUT OF THE LOGIC ELEMENT IT IS ASSOCIATED WITH. EXAMPLES ARE SHOWN BELOW:



THE LOGIC EQUATION FOR FIGURE (a) IS $\overline{A} \bullet B = X$, WHICH STATES THAT A MUST BE AT A LOGIC O STATE (OR \overline{A} AT A LOGIC 1 STATE) AND B MUST BE AT A LOGIC 1 STATE IN ORDER FOR X TO BE AT A LOGIC 1 STATE. THE BAR TERM IN FIGURE (a) IS A (READ AS NOT -A OR A - BAR).

THE LOGIC EQUATION_FOR FIGURE (b) IS A + B = X, WHICH STATES THAT A IS THE LOGIC O STATE (OR A AT A LOGIC 1 STATE) OR B IN THE LOGIC 1 STATE WILL GIVE A LOGIC 1 STATE OUTPUT AT X.

THE LOGIC EQUATION FOR FIGURE (c) IS A \bullet B = X, WHICH STATES THAT A LOGIC 1 OUTPUT WILL BE AVAILABLE AT X EXCEPT WHEN A AND B ARE BOTH AT THE LOGIC 1 STATE. CONVERSELY, X IS LOGIC O IF BOTH A AND B ARE LOGIC 1. THE EXACT SAME LOGIC HOLDS TRUE IF THE EQUATION \overline{A} + \overline{B} = X WERE USED, FOR IF EITHER A OR B ARE AT THE O STATE (\overline{A} OR \overline{B} AT A 1 STATE) A 1 STATE OUTPUT WILL BE PRESENT AT X, THEREFORE

$$\overline{A \bullet B} = \overline{A} + \overline{B} = X$$

THE LOGIC EQUATION FOR FIGURE (d) IS A + B = X, WHICH STATES THAT X WILL BE AT A 1 STATE WHEN BOTH A AND B ARE AT A 0 STATE. THE EXACT SAME LOGIC HOLDS TRUE IF THE EQUATION A \bullet B = X WERE USED, FOR IF A AND B ARE BOTH AT A 1 STATE, (A AND B AT A 0 STATE) A 1 STATE OUTPUT WILL BE PRESENT AT X, THEREFORE

$$\overline{A + B} = \overline{A} \bullet \overline{B} = X$$

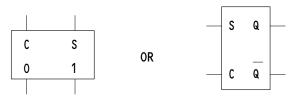
FIGURES (e) AND (f) FUNCTION AS LOGIC INVERTERS AND AMPLIFIERS. THE OUTPUT IS THE OPPOSITE OF THE INPUT. SOME EXAMPLES OF INPUT-OUTPUTS ARE SHOWN BELOW.

Logic Symbols Figure 3 (Sheet 2)



<u>INPUT</u>		<u>OUTPU</u> T		
1.	A	\overline{A}		
2.	Ā	Ā OR A		
3.	A • B	$\overline{A \bullet B}$ OR $\overline{A} + \overline{B}$		
4.	A + B	$\overline{A + B}$ OR $\overline{A} \bullet \overline{B}$		
5.	Ā + B	$\overline{\overline{A} + \overline{B}}$ OR A • B		

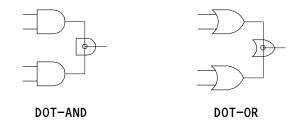
4. FLIP-FLOPS ARE TWO-STATE DEVICES WHICH STORE OR PROCESS A SINGLE BIT (OR FUNCTION) OF LOGIC. MANY VARIATIONS ARE POSSIBLE, BUT THE BASIC FLIP-FLOP HAS A SET INPUT (S), A CLEAR OR RESET (C), AND A 1 OR Q OUTPUT AND A 0 OR Q OUTPUT. THE FUNCTION IS SUCH THAT APPLYING AN ACTIVE INPUT TO THE SET INPUT (LOGIC 1) SETS THE FLIP-FLOP AND CAUSES THE 1 OUTPUT (OR Q OUTPUT) TO BE IN THE ACTIVE LOGIC 1 STATE AND THE 0 OR Q OUTPUT AT LOGIC 0. WHEN RESET (LOGIC 1 TO CLEAR INPUT) THE 1 OR Q OUTPUT ASSUMES THE LOGIC 0 STATE AND THE 0 OR Q OUTPUT ASSUMES THE LOGIC 1 STATE. THE SYMBOL USED IS SHOWN BELOW.



5. MULTIPLE INPUTS TO A LOGIC ELEMENT ARE ACCOMMODATED IN LOGIC DIAGRAMS AS SHOWN BELOW IN TYPICAL FORM.



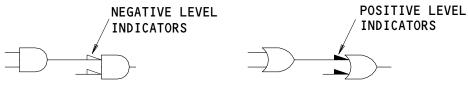
6. CIRCUITS OF SAME DESIGN MAY BE COMBINED BY SIMPLY CONNECTING THE OUTPUTS TOGETHER. THESE COMBINING CONNECTIONS ARE REFERRED TO AS DOT-AND GATES, OR AS DOT-OR GATES. THE SYMBOLS ARE AS SHOWN.



Logic Symbols Figure 3 (Sheet 3)



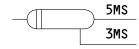
7. THE USE OF POSITIVE OR NEGATIVE LOGIC IS DEFINED BY NOTES AT THE BOTTOM OF EACH DIAGRAM, STATING THE APPROXIMATE VOLTAGE LEVEL OF LOGIC 1 AND LOGIC 0. IF HYBRID LOGIC IS USED, THE NOTE AT THE BOTTOM OF THE DIAGRAM STATES THE PREVALENT LOGIC LEVEL, AND LEVEL INDICATORS ARE PLACED ON THE OPPOSITE LEVEL AT THE SPECIFIC ELEMENTS. THE TYPICAL USE OF THIS IS:



MOSTLY POSITIVE

MOSTLY NEGATIVE

8. TIME DELAY ELEMENTS ARE DEPICTED AS SHOWN BELOW. SEVERAL TAPS MAY BE INCLUDED, AND THE DELAY TIME OF EACH IS DENOTED ON THE ASSOCIATED LINE.



Logic Symbols Figure 3 (Sheet 4)



11. Revision Service

- A. General
 - (1) The AMM is kept current by revision service.
 - (2) There are two types of revisions:
 - (a) Regular revisions
 - (b) Temporary revisions
- B. Regular Revisions
 - (1) Schedule
 - (a) Aircraft operators who have contracted continuing normal revision service for this manual receive revisions three times each year.
 - (2) Revision Bars
 - (a) On each page, the changed area has a revision bar on the left margin.
 - (b) Those pages that were not technically revised, but were printed again for data that moved to a new page when other pages were added or removed, have a revision bar on the lower left margin opposite the page number and date.
 - (3) List of Effective Pages (LEP)
 - (a) The changes to the sections or pages are identified on the LEP by a R (Revised), A (Added), or D (Deleted).
 - (b) The LEP is the authority for the correct pages for the manual.
 - 1) A date and a page code identify the pages in the LEP, and on the page.
 - a) The chapter-, section-, subject-, and page-number along with the page code, and the date are unique for each page in the AMM.
 - b) If the date, and the page code are the same on the page and in the LEP, then the page is correct for the manual.

NOTE: Read the description of the date and the page code carefully. The configuration of the page code, and the date can cause confusion when you file the pages.



- c) The date of a revised page can be earlier, the same as, or later than the date of the replaced page.
- (c) Page Code
 - 1) The date and the page code are in the lower right corner of the page.
 - 2) The page code is the two or three characters (letters, or numbers) that are to the left of decimal (there is not always a decimal after the page code).
 - 3) There can be a decimal and up to three numbers after the page code.
 - 4) Ignore the numbers that are after the decimal when you file pages.
 - a) The decimal and the numbers that follow it are for Boeing internal use.
 - b) If the page is not changed during a revsion then the decimal, and the numbers that follow it will not show in the LEP at the next revision.
 - c) The paper page is not sent again, and it will still have the decimal and numbers.
- (4) Temporary Revisions (TR)
 - (a) Boeing sends a TR when it is necessary to alert you of configuration differences, or other changes to the AMM that cannot wait until the scheduled revision.
 - (b) Each TR has a list of all the recent TRs, and their status.
 - Each TR is incorporated into the AMM at the regular revision.
 - (c) A TR is applicable to only one page block.
 - TRs are not revised.
 - a) If changes are necessary, the TR is superseded by a new TR.
 - b) For paper pages, file the TR adjacent to the affected pages.



12. <u>Delivery of Data in Digital Format</u>

- A. The data in this manual is available in digital format on magnetic tape. These tapes are formatted in one of two formats, depending on the content of the tape. The first tape format, which is used to transmit textual information, including LEPs and Highlights is known as the Print File Format. The second format, which is used to transmit graphic data, is known as the Computer Graphic Metafile (CGM) format. A brief description of each of these two formats is presented below.
 - (1) The Print Format tape contains a standard tape header label and an EBCDIC encoded file of printer ready information. The print file contains fixed length (135 characters) records with a coded hierarchy that explains the content of each record. The major hierarchy is represented by the first character of each record:

1=Manual Record 2=Document Record 3=Page Record 4=Line Record

Sub-record and other information , such as revision page dates, are identified within the major record scheme.

(2) The Computer Graphic Metafile (CGM) tape contains a standard tape header label followed by a file containing the merged representations of all of the graphics. These graphics are presented in accordance with ISO standard 8632-1987 (ANSI standard X3.122-1986). The graphic file requires that a splitter program be used which will allow individual graphics to be used.



13. <u>Customer Originated Material</u>

XXX XXX

XXX

XXX

XXX

XXX

XXX

XXX

XXX XXX

XXX

XXX XXX XXX

XXX

XXX

XXX

XXX XXX

XXX XXX A. Customer originated material, incorporated into the manual at customer request to reflect data or procedures originated by and peculiar to that specific customer, will be permanently identified by the customer's three-letter designator in the space reserved for the revision bar. (See example to the left of this paragraph, where "XXX" represents the customer designator). In addition, these pages are identified on the List of Effective Pages (LEP), with a page code which is the customer's three-letter designator. The Boeing Company does not assume responsibility for the validity and/or the technical accuracy of material so identified. The Boeing Company will not undertake to test or evaluate in any form the validity or the technical accuracy of the customer-originated material, and the customer shall have the sole and exclusive responsibility for the validity and accuracy of material submitted for incorporation into the manual.

THE BOEING COMPANY HEREBY EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, ARISING BY LAW, COURSE OF DEALING, OR OTHERWISE, AND WITHOUT LIMITATION ALL WARRANTIES AS TO QUALITY, OPERATION, MERCHANTABILITY, FITNESS FOR ANY INTENDED PURPOSE, AND ALL OTHER CHARACTERISTICS WHATSOEVER, OF CUSTOMER-ORIGINATED MATERIAL INCORPORATED INTO THE MANUAL. THE FOREGOING DISCLAIMER SHALL ALSO APPLY TO ANY OTHER PORTION OF THE MANUAL WHICH MAY BE AFFECTED OR COMPROMISED BY SUCH CUSTOMER-ORIGINATED CHANGES.

14. List of Service Bulletins

A. A list of service bulletins which the customer has indicated they have incorporated, or will incorporate, on their airplanes is provided following the Introduction. The listing provides service bulletin number, ATA chapter(s) affected, status (S/C), incorporation date and customer engineering order number. If the SB does not affect the AMM, "NO EFFECT" will appear in place of an incorporation date. The SB number will be repeated when more than one ATA chapter is affected. The change configuration is shown on the S/C column; S indicating "Start" (dual) configuration and C indicating "Complete" or single configuration.

15. Model and Airplane Identification

- A. Some data in this manual is limited to specific airplanes, airplane models, or equipment.
 - (1) These differences are identified with customer effectivity codes, model effectivity, or type of equipment effectivity.
- B. A list of airplanes that are applicable to this manual follows the introduction.
 - (1) It has a cross-reference tabulation of codes:
 - (a) Customer effectivity codes
 - (b) Line numbers
 - (c) Variable numbers
 - (d) Manufacturing serial numbers
 - (e) Registration numbers
- C. Customer effectivity codes
 - (1) A customer effectivity code is assigned to each airplane.



- (2) This code is put on text and illustrations that are applicable to only the airplanes that have those codes.
- (3) The code is always preceded by the airlines three-letter designator.
- D. Line number
 - (1) The line number is the manufacturing sequence number for an airplane for a model.
- E. Variable number
 - (1) The variable number is assigned to each airplane during design and manufacturing and is used on the engineering drawings and the final airplane assemblies.
- F. Serial number
 - (1) The manufacturing serial number is the permanent identification number for the airplane and is on the identification plate on the airplane and on the airplane registration and airworthiness certificates.
- G. Registration number
 - (1) The registration number is the number on the tail of the airplane as required by government regulations.



LIST OF EFFECTIVE AIRPLANES

1. <u>General</u>

A. The following list provides a cross reference table of the airplanes that are applicable to the information contained in this manual.

GPA Group plc

Customer				
Effectivity	Line	Variable	Manufacturing	Registration
Code	No.	Number	<u>Serial Number</u>	Number
MODEL 757-2Y0				
GUI 001	388	NB321	25240	XA-MTY
GUI 002	400	NB322	25268	G-CPEP
GUI 003	472	NB323	26151	G-ZAPU
GUI 004	478	NB324	26152	EI-CEY
GUI 005	482	NB325	26153	B-2831
GUI 006	486	NB326	26154	EI-CEZ
GUI 007	495	NB327	26155	B-2826
GUI 008	503	NB328	26156	B-2827
GUI 009	526	NB329	26158	G-000X
GUI 010	555	NB330	26160	G-FCLJ
GUI 011	557	NB331	26161	G-FCLK
MODEL 757-236				
GUI 115	362	NA346	25054	G-000K

EFFECTIVITY-

LIST OF AIRPLANES



AMTOSS FUNCTION CODES

OO REMOVAL

O1 REMOVE/OPEN FOR ACCESS

Removal or opening of access plates; opening of doors; removal or disconnection of components, structural members, tubing, or items required to provide access for performing the task.

02 REMOVE UNIT/COMPONENT

The removal of the unit/component identified as the task, and attaching parts.

03 DISCONNECT/LOOSEN/REMOVE ITEM

Disconnecting/loosening/removal of lines, nuts, clamps, brackets, etc., attached to the component being removed required to accomplish the task. Removal of sub-task items such as light bulbs, sockets, lenses, caps, seals, bearings, screens, screws, etc. This can also include capping of lines, electrical connectors, etc.

04 DEACTIVATE

Action taken to render a system inoperable for maintenance purposes or for operation under dispatch deviations procedures.

08 REMOVE TEST EQUIPMENT

Removal of any item of test equipment (pitot static tester, flight control rigging quadrant, etc.) attached to the aircraft/system/unit to indicate condition or position of systems/components.

09 REMOVE SUPPORT EQUIPMENT

Removal of any item of support equipment (fish-pole hoist, hydraulic jeep, safety locks, special tools, etc.) attached to the aircraft/system/unit to assist in performing the task/sub-task, excluding test equipment.

10 CLEANING



11 CHEMICAL

Chemical cleaning is defined as the removal of surface deposits by use of a chemical cleaning agent. Includes any combination of cleaning actions involving chemicals. Also includes preparation of materials.

12 ABRASIVE

Abrasive cleaning consists of the removal of surface deposits from a part by wet or dry particle impingement.

13 ULTRASONIC

Ultrasonic cleaning refers to the removal of surface deposits and entrapped material by use of high frequency sound waves to produce cavitation at the surface of the part. Cleaning is performed in a liquid bath that transmits the sound energy and keeps the removed material in suspension.

14 MECHANICAL

Mechanical cleaning involves the use of a brush, felt bob, or other hand (or machine) action to remove surface deposits from a part.

15 STRIPPING

Stripping consists of removal of paint or coatings.

16 MISCELLANEOUS CLEANING

Miscellaneous cleaning consists of the removal of deposits from small passages with a compressed air blast, miscellaneous hand cleaning, etc.

17 FLUSHING

Flushing of a fluid system consists of dirt or debris removal by passage of fluid through the component or system.

20 INSPECTION/CHECKS

Includes checks for wear, physical deterioration, or damage.



21 GENERAL VISUAL

A visual inspection/check is a thorough visual examination of a zone, system, subsystem, component and/or part, to a level defined by the manufacturer, to detect structural failure, deterioration, or damage; and to determine the need for corrective maintenance.

NOTE: Periodic zonal (area) inspections/checks are numbered using ATA Chapter 05 as the first element.

22 DETAILED DIMENSIONAL

A detailed/dimensional inspection/check is a comparison of the dimensions and material condition of parts, subassemblies, or assemblies with the specifications contained in technical manuals and/or blueprints, to detect deviations from established standards and limits, for the purpose of determining the need to discard or repair and/or to verify that proper corrective maintenance has been accomplished. Although some detailed/dimensional inspection/check tasks/sub-tasks may not require measurements, the complete spectrum of detailed dimensional tasks/sub-tasks requires a variety of precision measuring equipment to determine items such as runout, concentricity, flatness, parallelism, hardness, squareness, thickness, clearness, angularity, diameters, radii, depth, etc.

23 PENETRANT

This type of inspection refers to the fluorescent penetrant inspection of parts to detect surface cracks.

24 MAGNETIC

Magnetic inspection is defined as the magnetic particle inspection of parts to detect surface cracks in magnetic materials.

25 EDDY CURRENT

Eddy current inspection consists of inspecting for cracks, porosity, inclusions, or other nonhomogeneous material structure by use of high frequency electromagnetic wave equipment. Parts are scanned and compared to similar parts or test specimens having known material defects.



26 X-RAY/HOLOGRAPHIC

X-ray/holographic inspection involves inspecting for subsurface cracks, porosity, inclusions, or other nonhomogeneous material structure by passing x-ray through a part and recording an image on photographic film.

27 ULTRASONIC

Ultrasonic inspection involves inspecting for subsurface cracks, porosity, or other nonhomogeneous material structure by use of use of contact pulse echo ultrasonic techniques.

28 SPECIFIC/SPECIAL

Special inspection/checks involving processes not included in codes 21 thru 27 and 29.

29 BOROSCOPE

Boroscope inspection refers to any inspection requiring the use of boroscope equipment.

30 REPAIR

31 WELDING/BRAZING

Welding/brazing refers to the joining by fusion welding, resistance welding, spot welding, furnace brazing, torch brazing, induction brazing, soldering, electron beam welding, plasma arc welding, etc. This category includes hard facing.

32 MACHINING/REAMING/BLENDING

These consist of processing to obtain a desired shape or finish by grinding, lathe turning, boring, reaming, broaching, milling, machine drilling, machine lapping, honing, sizing, machine polishing, machine buffing, machine cutting, electrochemical machining (ECM), electrodischarge machining (EDM), roll forming, stamping, machine punching, blanking, etc.



33 COMPOSITE

Composite repair consists of repairing composite material parts by hand cutting, hand drilling, hand polishing, hand grinding, hand lapping, hand riveting, blending, cutting or routing out materials by hand, cutting and fitting patches, burring, planishing, hand sanding, hand sawing, scraping, stop drilling, hand tapping, installing helical coil inserts, heating and chilling of parts, etc.

34 FIBERGLASS/PLASTIC/HONEYCOMB/EPOXY

Consists of repairing fiberglass/plastic/honeycomb/epoxy material parts by hand cutting, hand drilling, hand polishing, hand grinding, hand lapping, hand riveting, blending, cutting or routing out materials by hand, cutting and fitting patches, burring, planishing, hand sanding, hand sawing, scraping, stop drilling, hand tapping, installing helical coil inserts, heating and chilling of parts, etc. This function code is also used to identify the joining of parts with an adhesive, cementing material or fusible material. Included are silicone rubber bonding and molding, adhesive bonding, fiberglassing, rubber molding, and curing of bonding and molding materials.

35 MISCELLANEOUS REPAIR

Miscellaneous repair consists of repairing any parts not otherwise covered herein by hand cutting, hand drilling, hand polishing, hand grinding, hand lapping, hand riveting, blending, cutting or routing out materials by hand, cutting and fitting patches, burring, planishing, hand sanding, hand sawing, scraping, stop drilling, hand tapping, installing helical coil inserts, etc.

36 LEAKAGE REPAIR

Leakage repairs consist of those activites required to eliminate a detected leakage.

37 PAINTING

Painting consists of the application of primer and/or finish coats for protection or appearance. Includes mixing and preparation of materials.

38 PLATING

Plating consists of the application of chemical plating, chromium, cadmium, etc., to build up worn surfaces or for protection or appearance.



39 SEALING

Application of sealants, fairing compounds, etc., to prevent fluid leakage, control corrosion, fill gaps, provide locking, aerodynamic smoothing, etc. Includes preparation of materials.

40 INSTALLATION

41 INSTALL/CLOSE ITEMS REMOVED/OPENED FOR ACCESS

Installation or closing of access plates, closing of doors, installation of components, structural members, tubing, or any item that was removed or opened in order to provide access for performing the task.

42 INSTALL UNIT/COMPONENT

The installation of the unit/component identified as the task, and attaching parts.

43 INSTALL ITEM/RECONNECT/TIGHTEN/SAFETY

Installation of sub-task items such as light bulbs, sockets, lenses, seals, bearings, screens, screws, etc. Reconnect/tighten/safety any lines, nuts, clamps, brackets, etc., required to be loosened/disconnected in order to perform the task. This can also include uncapping of lines, electrical connectors, etc.

44 REACTIVATE

Actions taken to restore a system to normal operation which has been previously deactivated.

48 INSTALL TEST EQUIPMENT

Installation of any item of test equipment (pitot static tester, flight control rigging quadrant, etc.) attached to the aircraft/system/unit to determine system/component condition or position.

49 INSTALL SUPPORT EQUIPMENT

Installation of any item of support equipment (fish-pole hoist, hydraulic jeep, safety locks, special tools, etc.) attached to the aircraft/system/unit to assist in performing the task/sub-task. Excludes test equipment.

AMTOSS FUNCTION CODES



50 MATERIAL HANDLING

51 SHIPPING

Shipping is defined as the movement of any item, subassembly, or assembly from the time it is packaged until it reaches its intended destination.

52 RECEIVING

Receiving is defined as the receipt activity for any incoming item, subassembly, or assembly.

53 PACKING

Packing consists of installing parts, subassemblies, components, or units in shipping containers. Includes capping of lines, installation of plugs, etc.

54 UNPACKING

Unpacking is defined as the removal of items, subassemblies, or assemblies from shipping containers. Includes removal of all protection material.

55 STORAGE

Storage is defined as the safekeeping of any item, subassembly, or assembly until required for use. May require unit servicing and special handling.

56 MARSHALLING

Marshalling refers to the collecting of individual parts, subassemblies, or assemblies prior to release for assembly.

57 ENGINE FERRY/POD MAINTENANCE

Engine ferry/pod maintenance pertains to performing necessary preparations before and after transporting an engine by aircraft ferry method.

58 AIRCRAFT HANDLING

Lifting, jacking, shoring, towing, taxing, lowering.



60 SERVICING/PRESERVING/LUBRICATING

61 SERVICING

Servicing is defined as maintenance actions required to sustain a unit or system in proper operating status. (Replenish fluids, gas charging, etc.)

62 PRESERVING

Preserving pertains to preparing an item or aircraft for safekeeping from decomposition or deterioration. This includes preparing for storage by applying a preservative layer to, and desiccants in, hardware. It also includes the prevention of microbial growth in fuel tanks, application of corrosion inhibitants, etc.

63 DEPRESERVING

Depreserving pertains to removing the preservative layer and/or desiccants from the item or aircraft in preparation for installation or operation.

64 LUBRICATING

Lubricating is defined as applying oil, grease, or dry film type lubricant on moving parts in order to reduce friction or wear, or to cool the item.

65 FUELING/DEFUELING

The adjustment of the aircraft fuel level as required to perform the task.

66 DEICING/ANTI-ICING

Ice and snow removal from parked aircraft and applications to prevent the accumulation of ice and snow.

67 DISINFECT/SANITIZE

Procedures provided for health reasons (purification of potable water, etc.).



68 DRAIN FLUID

Used when fluid must be removed during servicing or other maintenance operations.

70 TESTING/CHECKING

Includes checks which determine proper functioning of systems and components.

71 OPERATIONAL

That procedure required to ascertain only that a system or unit is operable. These tests should require no special equipment or facilities other than that installed on the aircraft and should be comparable to the tests performed by the flight crews. It is not intended in the operational test that the unit meet the specifications and tolerances ordinarily established for overhaul or major maintenance periods.

72 FUNCTIONAL

That procedure required to ascertain that a system or unit is functioning in all aspects in accordance with minimum acceptable system or unit design specifications. These tests may require supplemental ground support equipment and should be more specific and detailed than an operational test. They should contain all necessary information to perform proficiency tests to maintain system or unit reliability at an acceptable level without reference to additional documents.

73 SYSTEM

That procedure containing all adjustment specifications and tolerances required to maintain system and/or unit performance at maximum efficiency and design specifications. It shall be self-contained and may duplicate other tests. It is normally used at major maintenance periods.

74 BITE

Those checks conducted using built-in test equipment.

75 SPECIAL

Special checks such as smoke check, sniff check, audible check, etc.



76 ELECTRICAL

Electrical checks to determine continuity, voltage, resistance, etc.

78 PRESSURE

Pressure check involves the measurement of pressure or the effect of pressure, or establishing the ability of a normally pressurized component or system to operate properly.

79 LEAK

Leak check determines the ability of a component or system to operate without leaking. Includes specific steps such as application of leak check solution.

80-99 MISCELLANEOUS

81 FAULT ISOLATION

Fault isolation consists of the following procedures: operating the aircraft to locate the prime suspect deficient system; operating an improperly functioning system or component in order to locate the cause of malfunction; or performing a series of prescribed checks to isolate a failed part or component.

82 ADJUSTING/ALIGNING/CALIBRATING

Adjusting/aligning/calibrating consists of making a physical correction to ensure proper placement, operation, or testing of a system or component.

83 RIGGING

Rigging pertains to hooking up, arranging or adjusting cables or linkage for proper system operation.

84 PREPARE FOR ../RESTORE .. TO NORMAL

Used when separate tasks are provided for preparing for maintenance or restoring (XXX) to normal after maintenance, when these procedures are lengthy and identical for several applications. NOTE: System/Hardware identification must be included in task/sub-task title.



85 OPERATOR MODIFICATION INCORPORATION

Operator modification incorporation pertains to performing the work specified in the operator's modification. This provides for identification of modification tasks at the task level with sub-tasks recognizing any functional changes (chemical, detailed/dimensional, cleaning, etc.) necessary to incorporate the modification order.

86 AIRCRAFT/SYSTEM CONFIGURATION

Actions required to bring the aircraft/system/unit/test equipment to a prescribed condition or position using normal functions and operations (opening/closing circuit breakers or switches, positioning controls or control surfaces, calibration or operation of test equipment, pressurizing/depressurizing, raising/lowering landing gear, energizing electrical system, etc. Includes packing flexible parts into normal preoperation configuration (oxygen masks, escape slides, etc.).

87 BLEEDING

Drain fluid, operate system, etc., to remove air bubbles.

88 HEATING/COOLING

Application of heat or cooling required for removal/installation, adjustment, or testing.

90 CHANGE = REMOVE + INSTALL

For control purposes, this function will be used to combine the 02 (Remove unit, component) and 42 (Install unit, component) codes.

91 STANDARD PRACTICES

Simple procedures encountered repeatedly during maintenance which are located in a standard practices section and referenced in other procedures to avoid repetition.

93 MARKING

Temporary or permanent markings required for part location, alignment, or identification during maintenance.



94 JOB SET-UP/CLOSE-UP

Positioning and removal of access platforms, steps, warning notices, fire extinguishers, or other items of ground support equipment; picking up foreign objects prior to engine operation; etc.

95 MASKING

Masking/unmasking required for painting, cleaning, surface protection, etc.

96 REPLACE

Used when removal and installation of small items must be combined in a single task such as relamping, seal replacement, etc. Restricted to items of a minor nature and details replaced as part of a repair task (bushings, bolts, o-rings, seals, etc.).

97 DATA RECORDING/CALCULATING

Recording of data required for monitoring, testing, adjusting, checking, etc.; and subsequent calculations.

98 MANUAL OPERATION OR POSITIONING

Manually positioning or operating a system, component, or unit which is normally powered, such as turning engine rotor, manually translating thrust reverser, etc.



This list tells you which service bulletins (SB) were evaluated for applicability to this manual. The list has this data: the SB number, the chapter affected, and the configuration of the change in the manual. S tells you that two configurations, pre- and post-SB, are in the manual. C tells you that the complete configuration, post-SB, is the only configuration that is shown in the manual. The revision date that the SB was, or will be, incorporated (NO EFFECT tells you that no change was necessary for that SB. INCORP tells you that the change for the SB was previously incorporated, and no more changes are necessary.) The airline-specific change order when it is applicable (Customer Engineering Order Number)

SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
11-39	11		NO EFFECT	
11-52	11		NO EFFECT	
21-54	21		NO EFFECT	
21-54R1	21		NO EFFECT	
21-59	21	S	01/28/00	
21-61	21	S	INCORP	
21-61	31	S	INCORP	
21-61R1	21	S	05/28/00	
21-61R1	31	S	05/28/00	
21-63	21	S	09/28/04	
21-88	21	S	01/28/03	
21-88R1	21	S	01/28/03	
21-103	21	S	05/28/05	
21-103R1	21	S	01/28/06	
21-103R2	21	S	01/28/06	
21-103R3	21	S	01/28/06	
21-109	21	S	09/28/07	
21-109R1	21	S	09/28/07	
22A49	22	S	12/20/96	
22A49	22	S	03/20/97	



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
122452	22	S	03/20/97	
22A52 22-54	22 22	3	NO EFFECT	
22-63	22		NO EFFECT	
22-64	22		NO EFFECT	
22-70	22		NO EFFECT	
22-71R1	22	S	05/20/08	
22-72R1	22	3	NO EFFECT	
22-73R1	22	S	05/20/08	
22-74R1	22	S	05/20/08	
22-74R2	22	S	01/20/09	
22-79	22	S	01/20/09	
23-38	23	J	NO EFFECT	
23-45	23		NO EFFECT	
23-101	23	S	01/20/08	
23-101R1	23	S	01/20/08	
24A54	24	J	NO EFFECT	
24A54R1	24		NO EFFECT	
24-67	24		NO EFFECT	
24A69	24		NO EFFECT	
24A69R1	24		NO EFFECT	
24-71	24		NO EFFECT	
24-71R2	24		NO EFFECT	
24-74	24		NO EFFECT	
24-75	24		NO EFFECT	
24-77	24	S	09/28/07	
24A79	24	S	09/20/97	
24A79R1	24	S	09/20/97	
24A79R2	24	S	09/20/97	
24A80	24	S	09/20/98	
24A80R1	24	S	09/20/98	
24A80R2	24	S	01/28/02	
24A80R3	24	S	01/28/02	
24-87R1	24		NO EFFECT	
24-89	24		NO EFFECT	
24-89R1	24		NO EFFECT	
24-89R2	24		NO EFFECT	
24-93	23	S	01/28/04	
24-93	24	S	01/28/04	
24-93	31	S	05/28/05	
24-93	38	S	01/28/04	
24-105	24		NO EFFECT	
24-105R1	24		NO EFFECT	
24-105R2	24		NO EFFECT	
24-105R3	24		NO EFFECT	
24-105R4	24		NO EFFECT	
24-110	24		NO EFFECT	
24-115	24		NO EFFECT	
24-115R1	24		NO EFFECT	



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
24-115R2	24		NO EFFECT	
24-125R1	24	S	09/20/08	
24-125R2	24	S	01/20/09	
25A121	25		NO EFFECT	
25-130	25		NO EFFECT	
25-130R2	25		NO EFFECT	
25-160	25		NO EFFECT	
25-172	25		NO EFFECT	
25-173	11	S	06/20/96	
25-173	25		NO EFFECT	
25-175	25		NO EFFECT	
25-175R2	25		NO EFFECT	
25-180	25		NO EFFECT	
25-180R1	25	S	01/28/01	
25-181	25		NO EFFECT	
25-181R1	25		NO EFFECT	
25-183	25	S	05/28/97	
25-183R1	25	S	INCORP	
25-183R2	25	S	INCORP	
25A189	25	S	09/28/01	
25-190	25	S	09/28/99	
25-194	25		NO EFFECT	
25-195	25		NO EFFECT	
25A211	25	S	01/28/00	
25-217	25	S	05/28/01	
25-217R1	25	S	09/28/04	
25-226	25	S	05/28/03	
25-226R1	25	S	05/28/03	
25-226R2	25	S	05/28/03	
25-226R3	25		NO EFFECT	
25A233	25		NO EFFECT	
25A233R1	25		NO EFFECT	
25-237R2	25	S	05/28/06	
25-259	25		NO EFFECT	
25-269	11	S	05/28/05	
25-269	52	S	05/28/05	
25-271R2	11	S	05/28/04	
25-271R2	52	S	05/28/04	
25A0187R1	25		NO EFFECT	
25A0193	25		NO EFFECT	
26A28	26		NO EFFECT	
26A32	26		NO EFFECT	
26-39	26		NO EFFECT	
26A40	26		NO EFFECT	
26A40R1	26		NO EFFECT	
26A42	21	S	01/28/01	
26A42	26	S	01/28/01	
27A86R2	27		NO EFFECT	



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
•				
27-99	27	S	01/28/00	
27-102	27		NO EFFECT	
27-104	27	S	05/28/93	
27-104	27	S	03/20/93	
27-104	31	S	09/20/94	
27A105	27		NO EFFECT	
27–106	27	S	01/28/00	
27-107R1	27		NO EFFECT	
27-107R2	27		NO EFFECT	
27–108	27		NO EFFECT	
27-108R2	27		NO EFFECT	
27–109	27		NO EFFECT	
27–110	27		NO EFFECT	
27–117	27	S	01/28/02	
27-117R1	27	S	05/28/05	
27-117R2	27	S	09/28/01	
27-117R2	57	S	09/28/01	
27A118	27		NO EFFECT	
27-118R1	27		NO EFFECT	
27–123	27		NO EFFECT	
27-123R1	27		NO EFFECT	
27–124	27	S	09/20/98	
27–124	27	S	09/28/98	
27A125	27	S	05/20/98	
27A125R1	27	S	INCORP	
27A125R2	27	S	01/28/03	
27A125R3	27	S	05/28/06	
27A125R4	27	S	01/20/09	
27–126	27		NO EFFECT	
27A127	12	S	01/28/00	
27A127	27		NO EFFECT	
27A127R1	12	S	01/28/00	
27A127R1	27	S	01/28/00	
27A127R2	12	S	09/28/02	
27A127R2	27	S	09/28/02	
27A128	27		NO EFFECT	
27A128R1	27		NO EFFECT	
27A129	27	S	09/28/99	
27A130	27	S	01/28/01	
27A130	32	S	01/28/01	
27A130R1	27	S	05/28/03	
27A130R1	32	S	05/28/03	
27A130R2	27	S	01/28/03	
27A130R2	32	S	01/28/03	
27A133	27		NO EFFECT	
27A133R1	27		NO EFFECT	
27A135	12	S	05/28/04	
27A135	27	S	05/28/04	



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
27-137	12	S	05/28/04	
27-137	27	s S	05/28/04	
27-137 27-137R1	12	s S	01/28/05	
1		3		
27A139	27		NO EFFECT	
27A142	27		NO EFFECT	
27A142R1	27		NO EFFECT	
27A142R2	27	0	NO EFFECT	
27A144	27	S	01/28/04	
27A146	06	S	05/28/05	
27A146	24	S	05/28/05	
27A146	27	S	05/28/05	
27A146	29	S	05/28/05	
27A146	31	S	05/28/05	
27A146R1	06	S	05/28/05	
27A146R1	24	S	05/28/05	
27A146R1	27	S	05/28/05	
27A146R1	29	S	05/28/05	
27A146R1	31	S	05/28/05	
27–148	27		NO EFFECT	
27–150	27		NO EFFECT	
27-150R1	27		NO EFFECT	
28-29	28	S	09/20/94	
28-29R1	28	S	09/20/94	
28-29R2	28	S	01/28/05	
28-29R2	33	S	01/28/05	
28-32	28		NO EFFECT	
28-33R2	28		NO EFFECT	
28-33R3	28		NO EFFECT	
28-36	28		NO EFFECT	
28-37	28	S	06/20/94	
28-39	28		NO EFFECT	
28-41	28		NO EFFECT	
28-41R1	28		NO EFFECT	
28A43	28	S	06/20/96	
28A43R1	28	S	12/20/96	
28A43R2	28	S	01/28/04	
28A43R3	28	S	01/28/04	
28A45	28	S	12/20/96	
28A45R1	28	S	12/20/96	
28-50	28	•	NO EFFECT	
28-50R1	28		NO EFFECT	
28-57	28		NO EFFECT	
28-57R1	28		NO EFFECT	
28-60	28	S	09/28/00	
28-60R1	28	S	01/28/01	
28-64	28	S	09/28/02	
28-64R1	28	S	01/28/03	
28A70	28	J	NO EFFECT	
I-OVI O	20		NO LIILUI	



BULLETIN ATA S/C DATE	ORDER NUMBER
28A7OR1 28 NO EFFECT	
28A7OR2 28 S 01/28/06	
28A73 28 NO EFFECT	
28A73R1 28 NO EFFECT	
28A76 28 NO EFFECT	
28A76R1 28 S 05/28/06	
28A78 28 S 01/20/09	
28A81 28 S 05/28/06	
28A85 28 S 05/28/06	
28A85R1 28 S 01/20/08	
28A85R2 28 S 01/20/08	
28A88 28 S 05/28/07	
28-93 28 NO EFFECT	
28-93R1 28 NO EFFECT	
28-95 05 S 09/28/07	
28-95R1 05 S 09/28/07	
28A105 28 S 05/28/07	
28A105R1 28 S 05/28/07	
28-110 28 S 05/20/09	
29-46 29 S 03/20/95	
29-47 29 NO EFFECT	
29-47R1 29 NO EFFECT	
29A48 24 S 01/22/00	
29A48 27 S 01/22/00	
29A48R1 29 NO EFFECT	
29A48R2 24 S 09/28/99	
29A48R2 27 S 09/28/99	
29A48R2 29 S 09/28/99	
29A48R3 06 S 05/28/00	
29A48R3 24 S 05/28/00	
29A48R3 27 S 05/28/00	
29A48R3 29 S 05/28/00	
29A48R4 06 S 09/28/02	
29A48R4 24 S 09/28/02	
29A48R4 27 S 09/28/02	
29A48R4 29 S 09/28/02	
29A49 06 S 05/28/01	
29A49 24 S 05/28/01	
29A49 27 S 05/28/01	
29A49 29 S 05/28/01	
29A49R1 06 S 05/28/06	
29A49R1 24 S 05/28/06	
29A49R1 27 S 05/28/06	
29A49R1 29 S 05/28/06	
29A51 06 S 05/28/04	
29A51 24 S 05/28/04	
29A51 27 S 05/28/04	
29A51 29 S 05/28/04	



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129A51R1	06	s	09/28/02	
29A51R1	24	s S	09/28/02	
29A51R1	24 27	s S	09/28/02	
29A51R1	29	s S	09/28/02	
29–56	29	3	NO EFFECT	
29-58	29		NO EFFECT	
29-58R1	29			
29-59R1	29 29		NO EFFECT	
29-60	29		NO EFFECT	
29-67	29 29		NO EFFECT	
29-68	29 29	c	NO EFFECT 09/20/08	
30-16	29 30	S	01/28/00	
30-16	30 31	S S	01/28/00	
30-16	33	s S		
1		5	INCORP	
30A18 30A18R1	30 30		NO EFFECT	
	30 30		NO EFFECT	
30A18R2	30 30	•	NO EFFECT	
30-19	30	S	01/28/07	
30-19	56	S	01/28/07	
30-19R1	30	S	01/28/07	
30-19R1	56	S	01/28/07	
30-21	30 30		NO EFFECT	
30-21R1	30	•	NO EFFECT	
31-34R2	31	S	05/28/07	
31-55	31	•	NO EFFECT	
31-59	31	S	09/28/98	
31-59	32	S	09/28/98	
31-59R1	31	S	01/28/00	
31-59R1	32	S	01/28/00	
31-59R2	31	S	01/28/01	
31-59R2	32	S	01/28/01	
31-59R3	31	S	05/28/01	
31-66	31	S	01/28/02	
31-66R2	31	S	05/28/00	
31-68	31	S	09/28/00	
31-68	34	S	01/28/00	
31-68R1	34	S	09/28/04	
31–69	31	S	05/28/07	
31-72	27	S	05/28/00	
31-72	31	S	05/28/00	
31-78	31	S	01/28/02	
31-78R1	31	S	01/28/01	
31-94	31	S	05/28/02	
31-94R1	31	S	09/28/02	
31-94R2	31	S	09/28/02	
31-97	31	_	NO EFFECT	
31-97	34	S	09/28/07	
31-97R1	31	S	01/20/09	



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
31A102	31		NO EFFECT	
31-104	31		NO EFFECT	
31-159	31	S	01/20/08	
31-164R1	31	·	NO EFFECT	
31-164R2	31	S	01/20/09	
31–166	31	•	NO EFFECT	
31–173	31	S	01/20/09	
31-173	34	S	01/20/09	
31-173R1	31	S	01/20/09	
31-173R1	34	S	01/20/09	
31-174	22	S	09/20/08	
31-174	29	S	09/20/08	
31-174	32	S	09/20/08	
31-179	31	S	01/20/09	
32-71R2	32		NO EFFECT	
32-88R1	32		NO EFFECT	
32-113	32		NO EFFECT	
32-121R2	32	S	09/28/04	
32A123	32	S	09/28/02	
32A124	32		NO EFFECT	
32A124R1	32		NO EFFECT	
32A124R2	32		NO EFFECT	
32A124R3	32		NO EFFECT	
32A124R4	32		NO EFFECT	
32A124R5	32		NO EFFECT	
32-126	12	С	09/28/04	
32-126	32	C	09/28/04	
32-131	12	S	01/28/00	
32-131	32	S	01/28/00	
32A135	32		NO EFFECT	
32A135R1	32		NO EFFECT	
32A135R2	32		NO EFFECT	
32-136	32		NO EFFECT	
32-142	32		NO EFFECT	
32-142R1	32		NO EFFECT	
32-142R2	32		NO EFFECT	
32-145	32		NO EFFECT	
32-145R1	32		NO EFFECT	
32-145R2	32		NO EFFECT	
32-151	32		NO EFFECT	
32-151R1	32		NO EFFECT	
32-157R1	32	S	01/28/06	
32-175R1	32	S	09/20/08	
32-175R1	52	S	09/20/08	
32-175R1	R78	S	09/20/08	
32-176	32	S	01/20/08	
32-176R1	32	S	01/20/08	
33-35R1	33	S	01/28/05	
-				



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
 33-39R1	33	S	01/28/00	
33A44	33	3	NO EFFECT	
33A44R1	33		NO EFFECT	
33A48	33		NO EFFECT	
34-97	34	S	06/20/93	
34-98	34	S	03/20/93	
34-102	34	3	NO EFFECT	
34-115	34	S	INCORP	
34-132	34	S	09/20/96	
34-132R1	34	S	01/20/08	
34-132R2	34	S	09/28/04	
34-132R3	34	S	05/28/05	
34-154	34	S	01/28/00	
34-162	34	S	INCORP	
34-166	33	S	INCORP	
34-166	34	S	INCORP	
34-167	34	S	INCORP	
34-192R1	34	S	09/28/04	
34-200	34	S	01/28/03	
34-210	34	•	NO EFFECT	
34-210R1	34		NO EFFECT	
34-210R2	34		NO EFFECT	
34A222	34	S	05/28/03	
34A222R1	34	S	09/28/05	
34A222R2	34	S	09/28/05	
34-228R1	34	S	01/28/03	
34A260	34		NO EFFECT	
34-264	34	S	05/28/04	
34-264R1	34	S	01/28/06	
34-264R2	34	S	01/28/06	
34-303	34		NO EFFECT	
34-307	34		NO EFFECT	
34-307R1	34		NO EFFECT	
34-324	34		NO EFFECT	
34-377R1	34		NO EFFECT	
34-379R2	34	S	05/20/08	
34-379R3	34	S	05/20/08	
34-394	34	S	05/20/08	
34-394R1	34	S	05/20/08	
34-399	34		NO EFFECT	
34-399R1	34		NO EFFECT	
34-404	34	S	05/20/08	
34-404R1	34	S	05/20/08	
34-410	34	S	05/20/08	
34-410R1	34	S	05/20/08	
34-410R2	34	S	05/20/08	
34-414	22	S	09/20/08	
34-414	27	S	09/20/08	



SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
34-414	31	S	09/20/08	
34-414	33	S	09/20/08	
34-414	33 34	s S	09/20/08	
		3		
34-428 35A10	34 75		NO EFFECT	
35–14	35 75		NO EFFECT	
1	35 35		NO EFFECT	
35-14R1 35A15	35 35		NO EFFECT	
	35 35		NO EFFECT	
35A15R1	35 35		NO EFFECT	
35A15R2	35 35	0	NO EFFECT	
35-21	35 35	S	05/28/01	
35-23	35 35	•	NO EFFECT	
35-28	35 35	S	09/28/07	
35-28R1	35 35	S	09/28/07	
35-30	35 7 (S	09/28/07	
36-21	36		NO EFFECT	
36-23	36	S	12/20/96	
38A30	38	S	01/28/00	
49-11R2	49		NO EFFECT	
49-19	49	S	01/28/06	
49-19R1	49	S	01/28/06	
52A23	52	S	09/28/04	
52A23R1	52	S	09/28/04	
52A23R2	52	S	09/28/04	
52A23R3	52	S	09/28/04	
52A23R4	52	S	09/28/04	
52-53R1	52		NO EFFECT	
52-55	52		NO EFFECT	
52-56	52		NO EFFECT	
52-57	32	S	01/28/00	
52-57	52		NO EFFECT	
52-57R1	32	S	05/28/01	
52-60	52		NO EFFECT	
52-61	32	S	01/28/00	
52-61	52		NO EFFECT	
52-64	52		NO EFFECT	
52-66	12	S	09/28/04	
52-66	25	S	09/28/04	
52-66	52	S	09/28/04	
52-66R1	12	S	05/28/03	
52-66R1	25	S	05/28/03	
52-66R1	52	S	05/28/03	
52-66R2	12	S	05/28/03	
52-66R2	25	S	05/28/03	
52-66R2	52	S	05/28/03	
52-67	52		NO EFFECT	
52-74	52		NO EFFECT	
52-75	52		NO EFFECT	
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SERVICE BULLETIN	<u>ATA</u>	<u>s/c</u>	INCORPORATIONDATE	CUSTOMER ENGINEERING ORDER NUMBER
52-75R1	52		NO EFFECT	
52-85	52		NO EFFECT	
52-87	25	S	01/28/07	
52-87	52	S	01/28/07	
52-90	52	S	01/20/01	
53A60	53	3	NO EFFECT	
53-62R1	53		NO EFFECT	
53-63R1	53		NO EFFECT	
53-71	53		NO EFFECT	
53-73R2	6	S	01/28/01	
53-74	51	S	05/28/03	
53-76	53	Ū	NO EFFECT	
53-77	53		NO EFFECT	
53-77R1	53		NO EFFECT	
53-78	27	S	09/28/99	
53-78	53	Ū	NO EFFECT	
53-91	53		NO EFFECT	
53A92	53		NO EFFECT	
53A92R1	53		NO EFFECT	
53A93	53		NO EFFECT	
53-94	53		NO EFFECT	
54-13	54		NO EFFECT	
54-13R3	54		NO EFFECT	
54-13R4	54		NO EFFECT	
54A2OR3	54	S	06/20/93	
54A2OR4	54	S	06/20/93	
54A2OR6	54	S	01/20/98	
54-22R1	54	·	NO EFFECT	
54-24R1	54		NO EFFECT	
54-24R2	54		NO EFFECT	
54-26	54	S	03/20/96	
54-26R1	54	S	05/28/05	
54-27	54	S	01/28/00	
54-27R1	54	S	01/28/00	
54-29	54	_	NO EFFECT	
54A30	54		NO EFFECT	
54A30R1	54		NO EFFECT	
54-31R1	54		NO EFFECT	
54-31R4	54		NO EFFECT	
54-32	54		NO EFFECT	
54-32R1	54		NO EFFECT	
54-35R1	54	S	09/28/99	
54-35R2	54	S	09/28/02	
54A39	54		NO EFFECT	
54A39R1	54		NO EFFECT	
54A39R2	54		NO EFFECT	
54A39R3	54		NO EFFECT	
54A45	54		NO EFFECT	
•				



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54A47	54		NO EFFECT	
54A47R1	54		NO EFFECT	
54A47R2	54		NO EFFECT	
54A47R3	54 54		NO EFFECT	
54–48	54 54		NO EFFECT	
54-49	54 54		NO EFFECT	
56-7	56	c	01/28/00	
L .		S		
56-7R1 56-8R1	56	S	03/20/96	
1	56	S	01/28/01	
57-16R3	57 57	•	NO EFFECT	
57-35R1	57 27	S	01/28/00	
57-35R2	27	S	01/28/00	
57-35R2	57 27	S	01/28/00	
57-35R3	27	S	01/28/00	
57-35R3	57	S	01/28/00	
57-35R4	27	S	06/20/95	
57-35R4	57	S	01/28/00	
57-36	57		NO EFFECT	
57-36R1	57		NO EFFECT	
57-43	57		NO EFFECT	
57-44R2	57		NO EFFECT	
57-47R3	57		NO EFFECT	
57-49	57		NO EFFECT	
57-53	57		NO EFFECT	
57-53R1	57		NO EFFECT	
57A54	57		NO EFFECT	
57A54R1	57		NO EFFECT	
57A54R2	57		NO EFFECT	
57-56	57		NO EFFECT	
57-57	12	S	01/28/01	
57-57	27	S	01/28/01	
57-57R1	12	S	01/28/01	
57-57R1	27	S	01/28/01	
57-58	57		NO EFFECT	
57A58R1	57		NO EFFECT	
57-60	57		NO EFFECT	
57-60R1	57		NO EFFECT	
57-60R2	57		NO EFFECT	
57A63	57		NO EFFECT	
57-63R1	54	S	08/22/01	
57A64	57		NO EFFECT	
71-58R1	26	S	06/20/97	
71-58R1	71	S	09/20/96	
71-58R5	26	S	01/28/00	
71-58R5	71	S	01/28/00	
71-58R6	26	S	01/28/01	
71-58R6	71	S	01/28/01	
71-58R7	26	S	01/28/01	
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SERVICE			INCORPORATION	CUSTOMER ENGINEERING
BULLETIN	ATA	<u>s/c</u>	DATE	ORDER NUMBER
<u> </u>	7.7.	<u> </u>		ONDER HONDER
71-58R7	71	S	01/28/01	
73-30	73		NO EFFECT	
73-30R1	73		NO EFFECT	
75-5	31	S	09/28/00	
75-5	75	S	01/28/00	
76-11	73	S	12/20/96	
76-11R1	73	S	01/28/00	
76-11R1	76		NO EFFECT	
76-14	76		NO EFFECT	
76-15	76		NO EFFECT	
77-9	R77	S	05/28/07	
78A30	78		NO EFFECT	
78-32R3	11		NO EFFECT	
78-32R3	22	S	01/28/00	
78-32R3	22	S	05/28/00	
78-32R3	22	S	01/28/00	
78-32R3	27	S	01/28/00	
78-32R3	31	S	01/28/00	
78-32R3	31	S	05/28/00	
78-32R3	31	S	09/28/00	
78-32R3	34	S	01/28/00	
78-32R3	78	S	01/28/00	
78-39R1	78	S	09/20/95	
78-45	P78	S	05/28/05	
78-45	R78	S	05/28/05	



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