757-200

WIRING DIAGRAM MANUAL

GPA GROUP PLC

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This manual is applicable to the aircraft on this list:

Model-Series	Operator		Manufacturer			Registration Number
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GPA GROUP PLC
Revision No. 14

Oct 09/2008

To: All holders of this Boeing Document D280N032

Attached is the current revision to the 757 Wiring Diagram Manual (WDM).

The manual is available either as a printed manual, on microfilm, or digital products, or any combination of the three. This revision replaces all previous microfilm cartridges or digital products. All microfilm and digital products are reissued with all obsolete data deleted and all updated pages added.

For printed manuals, changes are indicated on the Effective Pages. The pages which are revised will be identified on the Effective Pages by an R (Revised), A (Added), O (Overflow, i.e. changes to the document structure and/or page layout), or D (Deleted). Each page in the Effective Pages is identified by Chapter-Section-Subject number, page number and page date. Pages replaced or deleted by this revision should be removed and destroyed.

All pages are included in this revision. Revision bars on the pages identify current revision changes.

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	24-0125 Added
	24-0126 Added
	27-0110 Title updated
	27A0105 Added
	28-0095 Added
	28A0081 Added
	28A0088 Added
	28A0105 R01 Added
	31-0034 R02 Added
	34-0132 R03 Added
	34-0303 Added
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	34-0394 Title updated
	34-0400 ATA's updated
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BOEING REVISION RECORD

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	22A0049	May 23/2003	S	001-011 115		AUTOFLIGHT - AFCS MODE CONTROL PANEL - MODE CONTROL PANEL REPLACEMENT
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	24-0069 R01	Dec 21/1999	S	001-005 115		ELECTRICAL POWER - DC GENERATION - STANDBY POWER - STATIC INVERTER INSPECTION/ REPLACEMENT

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	28-37	Jan 13/1997	S	115		FUEL - INDICATING - FUEL QUANTITY INDICATING SYSTEM PROCESSOR UNIT REPLACEMENT
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A = Added, R = Revised, D = Deleted

	Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
	30-0016	Dec 21/1999	S	001-011 115	30-43-11	ICE AND RAIN PROTECTION - WINDOWS AND WINDSHIELDS - RAIN REPELLENT SYSTEM TEMPORARY DEACTIVATION, ACTIVATION OR PERMANENT DEACTIVATION
A	31-0034 R02	Oct 09/2008	S	115	31-31-21	INDICATING/RECORDING - FLIGHT RECORDER EFIS SWITCHING RELAY - DIODE INSTALLATION TO PREVENT UNWANTED EICAS DISPLAY MESSAGE
	31-0055	Sep 14/1998	S	001-011 115	31-51-31 31-51-32	INDICATING/RECORDING - CENTRAL WARNING SYSTEM - WIRING CHANGES TO REDUCE SPEAKER HUM ON THE AURAL WARNING LOUDSPEAKER
	31-0059 R01	Dec 21/1999	S	001-011 115	31-41-14 31-41-24	INDICATING/RECORDING - CENTRAL COMPUTERS - EICAS COMPUTER REPLACEMENT
	31-0094	Feb 21/2002	S	010-011	27-11-11 27-21-11 27-48-11 27-58-11 27-62-11 31-31-01 31-31-02 31-31-41 31-31-42 31-31-43 31-31-51 31-31-61 31-31-65 34-22-14 34-22-24 34-22-27 34-25-11 34-61-14 34-61-15	FLIGHT DATA RECORDING SYSTEM - INSTALL NEW HONEYWELL DFDAU TO SATISFY JAA RETROFIT REQUIREMENTS AND INCREASE NUMBER OF RECORDED PARAMETERS
	31-0164 R01	Dec 18/2007	S	115	31-51-11 31-51-12 31-51-21 31-51-31 31-51-32 31-51-35 31-51-36	INDICATING/RECORDING SYSTEM - WARNING SYSTEM - CHANGES TO THE P51 WARNING ELECTRONICS UNIT

A = Added, R = Revised, D = Deleted

	Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
	31-0173	Dec 18/2007	S	115	28-41-11	INDICATING/RECORDING SYSTEMS - FUEL QUANTITY INDICATING SYSTEM (FQIS) - CHANGE THE FUEL, OIL QUANTITY, AIR CONDITIONING PACK FLOW AND THE AIRPLANE WEIGHT INDICATIONS FROM METRIC UNITS TO ENGLISH UNITS FOR FUEL QUANTITY INDICATION, CREW ALERTING & FMC
	34-0097	Jul 15/1996	S	009-011	34-22-16 34-22-26 34-22-36	NAVIGATION - COLLISION AVOIDANCE - TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM INSTALLATION
	34-0132	Dec 21/1999	S	001 009 011 115	34-12-12 34-12-22	NAVIGATION - AIR DATA SYSTEM - AIR DATA COMPUTER REPLACEMENT AND WIRE CHANGES TO SUPPORT REDUCED VERTICAL SEPARATION MINIMUMS
	34-0132	Feb 21/2002	S	002	34-12-12 34-12-22	NAVIGATION - AIR DATA SYSTEM - AIR DATA COMPUTER REPLACEMENT AND WIRE CHANGES TO SUPPORT REDUCED VERTICAL SEPARATION MINIMUMS
	34-0132	Oct 16/2003	S	003-008 010	34-12-12 34-12-22	NAVIGATION - AIR DATA SYSTEM - AIR DATA COMPUTER REPLACEMENT AND WIRE CHANGES TO SUPPORT REDUCED VERTICAL SEPARATION MINIMUMS
A	34-0132 R03	Oct 09/2008	S	002-008 010	34-12-12	NAVIGATION - AIR DATA SYSTEM - AIR DATA COMPUTER REPLACEMENT AND WIRE CHANGES TO SUPPORT REDUCED VERTICAL SEPARATION MINIMUMS
	34-0154	Dec 21/1999	S	001-011 115		NAVIGATION - POSITION COMPUTING - FLIGHT MANAGEMENT COMPUTER REPLACEMENT

A = Added, R = Revised, D = Deleted

Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
34-0200	Feb 21/2002	S	002	24-51-72 24-54-11 31-31-41 31-31-42 31-31-43 31-41-22 31-51-21 31-51-41 31-51-42 32-61-12 33-13-21 34-12-12 34-12-22 34-21-21 34-22-14 34-22-16 34-22-17 34-22-18 34-22-19 34-22-24 34-22-26 34-22-28 34-22-29 34-22-36 34-22-37 34-22-38 34-22-39 34-25-11 34-25-12 34-25-13 34-33-11 34-33-21 34-43-11 34-43-12 34-43-14 34-43-15 34-45-01 34-45-02 34-46-11 34-46-12 34-46-13 34-46-14 34-58-11 34-58-21 34-61-25	NAVIGATION - INDEPENDENT POSITION DETERMINING - INSTALLATION OF ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS), PREDICTIVE WINDSHEAR WEATHER RADAR SYSTEM (GPS) AND MUTLI-MODE RECEIVERS WITH INSTRUMENT LANDING AND GLOBAL POSITIONING FUNCTIONS
34-0301	Jun 23/2004	S	003	34-61-15 34-61-25	FLIGHT MANAGEMENT COMPUTING SYSTEM - 100K/200K FMC TO PEGASUS FMC AND ACTIVATION OF REQUIRED NAVIGATION PERFORMANCE (RNP) - UPGRADE AND FANS FEATURE ACTIVATION

A = Added, R = Revised, D = Deleted

	Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
A	34-0303	Oct 09/2008	S	001-011 115	34-21-11 34-21-21 34-21-31	NAVIGATION - INERTIAL REFERENCE SYSTEM - 2005 MAGNETIC VARIATION TABLE ACTIVATION
A	34-0307 R01	Oct 09/2008	S	001-011 115	34-21-11 34-21-21 34-21-31	INERTIAL REFERENCE SYSTEM - 1995 MAGNETIC VARIATION TABLE ACTIVATION
	34-0379 R01	Dec 18/2007	S	115		NAVIGATION - FLIGHT MANAGEMENT COMPUTER SYSTEM - REPLACEMENT OF 100K/ 200K FLIGHT MANAGEMENT COMPUTER AND PRODUCT IMPROVEMENT PACKAGE WITH PEGASUS FLIGHT MANAGEMENT COMPUTER
R	34-0394	Dec 18/2007	S	115	34-22-16 34-22-26 34-22-36	NAVIGATION - WEATHER RADAR SYSTEM - WEATHER RADAR SYSTEM REPLACEMENT
R	34-0400	Dec 18/2007	S	115	22-13-11 22-13-21 22-13-31 23-51-13 24-51-72 24-54-73 31-31-22 34-21-11 34-21-21 34-21-31 34-22-19 34-22-29 34-22-39 34-24-11 34-31-11 34-31-21 34-31-31 34-46-12 34-58-11 34-58-21 34-61-12 34-61-15 34-61-22 34-61-25	MULTI-MODE RECEIVER (MMR) INSTALLATION
	34-0410	Dec 18/2007	S	115	31-51-33 34-12-12 34-12-22 34-16-11	DISPATCH WITH GEAR DOWN FOR REVENUE FLIGHT - RETROFIT KIT

A = Added, R = Revised, D = Deleted

Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
R 34-0414	Dec 18/2007	S	115	22-12-11 22-12-21 22-32-11 22-41-11 24-54-11 24-54-21 24-54-73 33-13-11 33-13-21 33-13-51 33-13-52 33-16-31 33-16-51 34-21-11 34-21-21 34-22-14 34-22-16 34-22-17 34-22-18 34-22-26 34-22-27 34-22-28 34-22-36 34-22-37 34-22-38 34-61-11 34-61-12 34-61-13 34-61-14 34-61-15 34-61-16 34-61-18 34-61-21 34-61-22 34-61-23 34-61-24 34-61-25 34-61-26	NAVIGATION - FLIGHT MANAGEMENT COMPUTER SYSTEM - UPGRADE FROM CONTROL DISPLAY UNIT TO MULTI-PURPOSE CONTROL DISPLAY UNIT

A = Added, R = Revised, D = Deleted

Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
34A0222	May 23/2003	S	001-011 115	22-12-11 22-12-21 22-12-31 22-24-11 22-24-21 24-54-73 27-32-11 27-32-21 31-31-21 31-31-41 31-31-61 31-41-12 31-51-21 31-51-33 34-12-12 34-12-22 34-12-61 34-12-62 34-13-11 34-13-21 34-16-11 34-21-11 34-21-21 34-22-19 34-43-14 34-53-21 91-02-26 91-03-02	NAVIGATION - GENERAL - AIR DATA COMPUTING SYSTEM OVERSPEED AND STALL WARNING WIRE CHANGE
49-0019 R01	Dec 18/2007	S	001-011 115	49-61-11	AIRBORNE AUXILLARY POWER - APU IGNITION AND STARTING SYSTEM - APU CRANK CONTACTOR REPLACEMENT
75-0005	Dec 21/1999	S	001-009	75-31-11	AIR - COMPRESSOR BLEED CONTROL - ENGINE BLEED VALVE EICAS STATUS MESSAGE SIGNAL REMOVAL - RB211-535 ENGINES
75-0005	Jan 13/1997	S	115	75-31-11	AIR - COMPRESSOR BLEED CONTROL - ENGINE BLEED VALVE EICAS STATUS MESSAGE SIGNAL REMOVAL - RB211-535 ENGINES
76-0011 R01	Dec 21/1999	S	001-011 115	76-11-11 76-11-12	ENGINE CONTROLS - ENGINE FUEL VALVE INDICATION WIRING CHANGES - RB211-535 ENGINES

A = Added, R = Revised, D = Deleted

	Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
	76-0014	Feb 21/2002	S	001-011 115	76-11-11 76-11-12	ENGINE CONTROLS - GENERAL - ENGINE FUEL SHUTOFF VALVE - TRANSORB ADDITION
	78-0032 R03	Dec 21/1999	S	001-002 115	24-54-21 24-54-71 32-09-11 32-09-12 32-61-11 78-34-11 78-34-21 78-34-51 78-34-61 78-36-11 78-36-21	EXHAUST - GENERAL - THRUST REVERSER SYNC SHAFT LOCK INSTALLATION - RB211-535E4/E4B ENGINES
	78-0039 R01	Feb 21/2002	S	001-011 115	32-09-11 32-09-12 78-34-11 78-34-21 78-36-11 78-36-21	EXHAUST - THRUST REVERSER - THRUST REVERSER POSITION INDICATING SYSTEM MODIFICATION
A	SB 28A0085 R01	Oct 09/2008	S	001-011 115	28-41-41	HOT SHORT PROTECTOR INSTALL FOR FQIS FUEL DENSITOMETER
	SB 77-0009 R01	Dec 18/2007	S	001-011 115	77-31-11	ENGINE INDICATING - ANALYZERS - AIRBORNE BIVRATION MONITORING (AVM) SYSTEM - UNIVERSAL SIGNAL CONDITIONER INSTALLATION

A = Added, R = Revised, D = Deleted

Number	Incorporated	Started/ Completed	Effectivity	ATA	Subject
-No effect	-	-	-	-	

A = Added, R = Revised, D = Deleted

CUSTOMER CHANGE LIST

CH-SC-SU	Title
28-41-14	FUEL TANK PROGRAMMING PIN AND DISCRETES
28-43-11	FUEL TEMPERATURE INDICATION
33-27-31	GALLEY LIGHTS - AFT (G4B)
33-27-11	GALLEY LIGHTS - FORWARD (G1A)
33-27-21	GALLEY LIGHTS - MID (G2A)
33-27-22	GALLEY LIGHTS - MID (G2D)
25-31-31	GALLEY POWER - AFT (G4A)
25-31-33	GALLEY POWER - AFT (G4B)
25-31-11	GALLEY POWER - FORWARD (G1A)
25-31-13	GALLEY POWER - FORWARD (G1B)
25-31-21	GALLEY POWER - MID (G2A)
25-31-23	GALLEY POWER - MID (G2B)
25-31-27	GALLEY POWER - MID (G2D)
24-23-11	GENERATOR DIFFERENTIAL FAULT SENSING
24-11-11	GENERATOR DRIVE - LEFT
24-11-21	GENERATOR DRIVE - RIGHT
34-58-11	GLOBAL POSITIONING SYSTEM LEFT
34-58-21	GLOBAL POSITIONING SYSTEM RIGHT
32-12-12	GROUND ACCESS ONLY, GEAR DOORS CLOSE SYSTEM
32-12-11	GROUND ACCESS ONLY, GEAR DOORS OPEN SYSTEM
23-43-11	GROUND CREW CALL
91-21-21	GROUND LIST
34-46-11	GROUND PROXIMITY WARNING SYSTEM - POWER AND WARNING
34-46-13	GROUND PROXIMITY WARNING SYSTEM - PROGRAM PINS
34-46-12	GROUND PROXIMITY WARNING SYSTEM - SIGNAL
24-51-51	GROUND SERVICE BUS - CONTROL
23-11-11	HF COMMUNICATIONS - LEFT
23-11-21	HF COMMUNICATIONS - RIGHT

CH-SC-SU	Title
91-21-51	HOOKUP LIST
29-32-31	HYDRAULIC FLUID OVERHEAT INDICATION SYSTEM - CENTER
29-32-11	HYDRAULIC FLUID OVERHEAT INDICATION SYSTEM - LEFT
29-32-21	HYDRAULIC FLUID OVERHEAT INDICATION SYSTEM - RIGHT
29-33-11	HYDRAULIC FLUID QUANTITY INDICATION SYSTEM
24-25-11	HYDRAULIC GENERATOR CONTROL
24-25-13	HYDRAULIC GENERATOR INDICATIONS
24-25-12	HYDRAULIC GENERATOR POWER AND REGULATION
29-22-11	HYDRAULIC POWER TRANSFER UNIT CONTROL AND INDICATION
29-31-11	HYDRAULIC QUANTITATIVE PRESSURE INDICATION SYSTEM
29-21-31	HYDRAULIC RAM AIR TURBINE CONTROL AND INDICATION
29-35-11	HYDRAULIC RESERVOIR PRESSURE INDICATION SYSTEM
29-32-41	HYDRAULIC RESERVOIR TEMPERATURE INDICATION SYSTEM
33-41-11	ILLUMINATION LIGHTS - WING
34-31-31	ILS - CENTER
34-31-11	ILS - LEFT
34-31-21	ILS - RIGHT
49-94-11	INDICATION APU OIL LEVEL
33-24-31	INFORMATION SIGNS - PASSENGER SERVICE UNITS
33-13-11	INSTRUMENT AND PANEL LIGHTS - CAPTAIN AND PILOTS CENTER
33-13-51	INSTRUMENT AND PANEL LIGHTS - CONTROL STAND - SECTION 1
33-13-52	INSTRUMENT AND PANEL LIGHTS - CONTROL STAND - SECTION 2
33-13-12	INSTRUMENT AND PANEL LIGHTS - FIRST OBSERVER AND PILOTS CENTER
33-13-21	INSTRUMENT AND PANEL LIGHTS - FIRST OFFICER
33-13-41	INSTRUMENT AND PANEL LIGHTS - GLARESHIELD
33-13-61	INSTRUMENT AND PANEL LIGHTS - OVERHEAD CIRCUIT BREAKER PANEL
33-13-31	INSTRUMENT AND PANEL LIGHTS - PILOTS OVERHEAD - LEFT AND CENTER
33-13-32	INSTRUMENT AND PANEL LIGHTS - PILOTS OVERHEAD - RIGHT

CH-SC-SU	Title
32-01-11	PROXIMITY SWITCH ELECTRONICS UNIT INTERFACE
91-04-10	R AND L ENG STRUT FW, HORIZ FW ROLLS ROYCE DISCONNECT BRACKETS
34-33-31	RADIO ALTIMETER - CENTER
34-33-11	RADIO ALTIMETER - LEFT
34-33-21	RADIO ALTIMETER - RIGHT
34-22-81	RADIO DISTANCE MAGNETIC INDICATOR - LEFT
34-22-91	RADIO DISTANCE MAGNETIC INDICATOR - RIGHT
34-22-83	RADIO MAGNETIC INDICATOR AND ANNUNCIATION - LEFT
34-22-93	RADIO MAGNETIC INDICATOR AND ANNUNCIATION - RIGHT
33-23-31	READING LIGHTS - PASSENGER SERVICE UNITS
28-21-22	REFUELING CONTROL
28-21-23	REFUELING VALVES
29-21-32	RESERVE HYDRAULIC SOURCE SELECT AND INDICATION
34-61-26	RIGHT - FMS SWITCHING RIGHT CDU MISC FUNCTIONS
24-51-25	RIGHT AC TRANSFER BUS
24-22-22	RIGHT BTB CONTROL
77-12-42	RIGHT ENGINE SPEED SENSING CIRCUIT
34-61-24	RIGHT FMC/AFDS/MCP/EFIS/ MISC - INPUTS
34-61-21	RIGHT FMC/CDU INTERFACE
34-61-25	RIGHT FMC/EFIS/DATA LOADER GENERAL - OUTPUTS
34-61-23	RIGHT FMC/LEFT NAV/ AUTOTUNE DISCRETE - INPUTS
34-61-22	RIGHT FMC/RIGHT NAV/TMC - INPUTS
24-22-21	RIGHT GENERATOR AND GCB CONTROL
24-27-21	RIGHT GENERATOR ANNUNCIATION
26-12-21	RIGHT STRUT OVERHEAT
27-28-11	RUDDER POSITION INDICATION
27-21-12	RUDDER RATIO CHANGER - LEFT
27-21-22	RUDDER RATIO CHANGER - RIGHT

INTRODUCTION

1. APPLICABILITY

This Wiring Diagram Manual is applicable only to those Boeing airplanes listed on the Effective Aircraft page. The instructions and information contained herein apply solely to those airplanes and are not suitable for use with any other Boeing airplane(s).

2. GENERAL DESCRIPTION

The Boeing Wiring Diagram Manual (WDM) is a collection of diagrams, drawings, and Lists which define the wiring and hookup of associated equipment installed on the listed Boeing airplanes. These data are prepared essentially in accordance with the ATA Specification No. 2200, revision 2001.1.

This manual may also contain data and information provided by the customer. The Boeing Company assumes no responsibility for the accuracy and validity of data and information provided by a customer.

The WDM document number is unique to the customer whose name appears on the title page. Each chapter is preceded by its own Table of Contents (TOC), List of Effective Pages (LEP), and Alphabetical Index.

NOTE: System Schematics reside in a separate System Schematics Manual. Standard Wiring Practices–Chapter 20 reside in a separate Standard Wiring Practices manual (D6-54446).

All Wiring Diagrams are shown, unless otherwise specified, with the airplane on the ground, after normal flight, with the shutdown checklist complete (power off).

3. PROCESS CONTROLS

Control of the various manufacturing and installation processes used for wiring the airplane is covered in D6-36911 - Electrical Wiring Assembly and Installation Processes.

4. BOEING CHANGE DEFINITIONS

Changes used by Boeing to implement airplane changes that may affect this manual are listed below.

A. Customer Originated Changes (COC)

Customer Originated Changes are requests to incorporate airplane data, information, changes and modifications authorized by a customer into the WDM.

NOTE: Boeing will not undertake to test or evaluate, in any form, the validity or the technical accuracy of Customer Originated Changes. This will remain the sole responsibility of the customer submitting the Customer Originated Change request.

B. Service Bulletin (SB)

Service Bulletins provide information for accomplishing an engineering change on in-service airplanes. Service Bulletins are incorporated into this manual only upon customer request.

C. Service Letter (SL)

Service Letters notify customers of unique maintenance or operational items.

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D. Master Change (MC)

An engineering change is classified as a Master Change if the change appreciably affects the terms and conditions of the purchase agreement and/or the customer detail specification. Consequently, a Master Change must be negotiated with the customer to revise the airplane delivery schedule, contract price, performance, weight and balance, or any other design affecting specification language.

E. Production Revision Record (PRR)

A Production Revision Record is an engineering change initiated by Boeing which is nonnegotiable and is used to make airplane changes such as design improvements.

F. Rapid Revision (RR)

A Rapid Revision is a minor change to an airplane, requested by a customer, which is too late in the production process to generate a Master Change and is not applicable for PRR action.

G. Modification Revision (MR)

A Modification Revision is used by Boeing to describe, negotiate, control and record changes to a customer's airplane configuration after an airplane has been certified and used in revenue service, then returned to Boeing jurisdiction for rework. Modification Revisions may also be used to modify an airplane directly off the assembly line.

Modification Revisions are negotiable changes and may include engineering, fabrication, assembly and/or installation revisions. They may be used by Boeing to incorporate customer furnished kits and parts, or to incorporate Boeing furnished parts which are not in kit form.

Modification Revisions may include SB's, PRR's (represented by a SB), MC's, RR's, etc. On a modification program, whenever a SB number is available, it will be used in preference to the associated MR number.

H. Electrical Liaison Change Commitment Record (ELCCR)

An Electrical Liaison Change Commitment Record is used to process miscellaneous changes on an expedited basis (out of sequence), and to incorporate these changes into the airplane in sequence in the shortest possible time.

I. Boeing Change Reason (BCR)

Boeing Change Reason provides tracking of a change made to the content of the manual that apply to all users of the manual.

5. DESCRIPTION OF SERVICE BULLETIN LIST AND CUSTOMER CHANGE LIST

A. Number Field

The service bulletin or customer change number with it's revision level

B. Incorporated

The date of the manual revision which incorporated the change.

INTRODUCTION

C. Started/Completed

The status of the change. An 'S' is used in the Started/Completed column to indicate Start (Dual) configuration, a 'C' is used to indicate Complete (Final) configuration and a 'X' indicates canceled changes that have been removed from the manual.

D. Effectivity

The aircraft affected by the referenced change.

E. ATA

The list of drawings affected by the referenced change.

F. Subject

The title of the service bulletin or customer change.

6. BOEING COMMERCIAL PUBLICATION CHANGE REQUEST (PCR)

Communications concerning this manual should be directed to:

The Boeing Commercial Airplane Group
Attention: Supervisor, Commercial Publications
PO Box 3707 M/S 2H-61
Seattle, WA 98124-2207

Or access MyBoeingFleet website and complete the online PCR form.

To facilitate uniform handling and to provide direct routing of questions to the proper Boeing organization, use of the Publication Change Request is encouraged. Boeing makes this form available through the customer's publications organizations.

7. REFERENCE LINES

The Reference Lines provide an exact position within the airplane to aide in locating equipment.

A. Station Line (STA)

Edge view of vertical reference plane which divides the body, wing, nacelle etc., into sections.

B. Waterline (WL)

Edge view of longitudinal horizontal reference plane.

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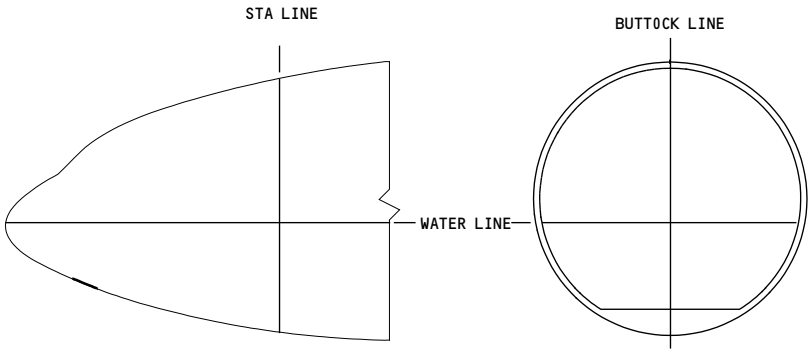
C. Buttock Line (BL)

Edge view of longitudinal vertical reference plane.



8. WIRE SEPARATION

Airplane wiring installation complies with Federal Aviation Regulation (FAR) 25. Special emphasis is placed on wire separation of redundant systems for safety and other considerations. Wire separation is also utilized to minimize electromagnetic interference.

For further information see Codes section of the Introduction.

INTRODUCTION

The following is a list of abbreviations and acronyms used in this manual. Where marked with an asterisk (*), see the GENERAL INFORMATION section, in the Wiring Diagram manual, for additional definition information.

A/C	Air Conditioning
A/C	Aircraft
A/R	Altitude Rate
ACARS	ARINC Communications Addressing and Reporting System
ACE	Actuator Control Electronics
ACESS	Advance Cabin Entertainment and Service System
ACM	Air Cycle Machine
ACMP	Alternating Current Motor Pump (See also EMP)
ACMS	Airplane Conditioning Monitoring System
ACP	Audio Control Panel
ADF	Automatic Direction Finder
ADI	Attitude Director Indicator
ADIRS	Air Data Inertial Reference System
ADIRU	Air Data Inertial Reference Unit
ADL	Airborne Data Loader
ADM	Air Data Module
ADP	Air Driven Pump
ADRS	Address
ADS	Air Data Systems
ADU	Air Drive Unit
AEM	Audio Entertainment Multiplexer
AFDC	Air Flight Data Control
AFDS	Autopilot Flight Director System
AFL	Air Flow
AIDS	Airborne Integrated Data System
AIMS	Airplane Information Management System
AMU	Audio Management Unit
ANCMT	Announcement
ANCPT	Anticipate
ANCPTR	Anticipator
ANS	Ambient Noise Sensor
ANTI-COLL	Anti-Collision
AOA	Angle of Attack
AOC	Air/Oil Cooler
APB	Auxiliary Power Breaker
APID	Airplane Identification
APU	Auxiliary Power Unit

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ARINC	Aeronautical Radio Incorporated
ASA	Autoland Status Annunciator
ASCPC	Air Supply Cabin Pressure Controller
ASCTS	Air Supply Control and Test System
ASCTU	Air Supply Control and Test Unit
ASP	Audio Select Panel
AVM	Airborne Vibration Monitor
BDY BLK	Burndy Block
BFE	Buyer Furnished Equipment
BPCU	Bus Power Control Unit
BSCU	Brake System Control Unit
BST	Boost
BTB	Bus Tie Breaker
BTLCS	Brake Torque Limiting Control System
BTMU	Brake Temperature Monitor Unit
C	Cold
CACTS	Cabin Air Conditioning & Temperature Control System
CADS	Central Air Data System
CALIB	Calibrator
CAP	Capture
CAP	Contact Authorized Proposal
CAPC	Cabin Area Control Panel
CAPT	Captain
CCA	Central Control Actuator
CCL	Cargo Control Logic
CCM	Cargo Control Module
CCU	Cargo Control Unit
CDU	Control Display Unit
CFDS	Centralized Fault Detection System
CFE	Customer Furnished Equipment
CHKPT	Checkpoint
CHSP	Course Heading Select Panel
CIC	Cabin Interphone Controller
CIWS	Central Instrument Warning System
CMC	Central Maintenance Computer
CMD	Command
CMM	Component Maintenance Manual
CMS	Cabin Management System
COC*	Customer Originated Change

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COF MKR	Coffee Maker
COLL	Collision
COM/NAV	Communication/Navigation
COR	Corrector
CP	Control Panel
CPCS	Cabin Pressure Control System
CRKG	Cranking
CSB	Compressor Stability Bleed
CSMU	Cabin System Management Unit
CT	Control Transformer
CTC	Cabin Temperature Controller
CTS	Cabin Temperature Selector
CTS	Conversational Terminal System
CVR	Cockpit Voice Recorder
CWS	Control Wheel Steering
DAA	Digital/Analog Adapter
DADC	Digital Air Data Computer
DAR	Digital Aids Recorder
DED	Dead Ended Shield
DEL	Diagram Equipment List
DFCS	Digital Flight Control System
DFDAU	Digital Flight Data Acquisition Unit
DFDR	Digital Flight Data Recorder
DH	Decision Height
DIU	Digital Interface Unit
DMU	Data Management Unit
DP	Differential Protection
DPA	Digital Pre-Assembly
DPCT	Differential Protective Current Transformer
DPLY	Deploy
DSP	Display Select Panel
E/E	Electrical/Electronics
EADI	Electronic Attitude Director Indicator
ECS	Environmental Control System
EDIU	Engine Data Interface Unit
EDP	Engine Driven Pump
EEC	Electronic Engine Control (Unit)
EFIS	Electronic Flight Instrument System
EHSI	Electronic Horizontal Situation Indicator

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EICAS	Engine Indicating and Crew Alerting System
EIU	EFIS/EICAS Interface Unit
ELCCR*	Electrical Liaison Change Commitment Record
ELCU	Electrical Load Control Unit
ELMS	Electrical Load Management System
EMC	Electromagnetic Compatibility
EMP	Electric Motor Pump (See also ACMP)
ENTMT	Entertainment
ENWY	Entryway
EPR	Engine Pressure Ratio
EPRL	Engine Pressure Ratio Limit
ESCC	Electrical Supply and Control Center
ESNTL	Essential
ESS	Essential
ETC	Electronic Temperature Control
ETOPS	Extended Twin (Engine) Operations
EXCHR	Exchanger
EXTD	Extend
F/D	Flight Director
F/E	Flight Engineer
F/F	Fuel Flow
F/O	First Officer
FADEC	Full Authority Digital Engine Control
FAFC	Full Authority Fuel Control
FAR	Federal Aviation Regulations
FBW	Fly-by-Wire
FCC	Flight Control Computer
FCU	Flap Control Unit
FDAU	Flight Data Acquisition Unit
FLMTR	Flowmeter
FMC	Flight Management Computer
FMCS	Flight Management Computer System
FMU	Fuel Metering Unit
FMV	Fuel Metering Valve
FOC	Fuel/Oil Cooler
FQIS	Fuel Quantity Indication System
FQPU	Fuel Quantity Processor Unit
FSEU	Flap/Slat Electronics Unit
GCB	Generator Circuit Breaker

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GCR	Generator Control Relay
GCU	Generator Control Unit
GPWS	Ground Proximity Warning System
GS	Glide Slope
GSB	Ground Service Bus
GSPR	Gasper
H	Hot
HLCU	High Lift Control Unit
HMU	Hydromechanical Unit
HND	Hand
HPC	High Pressure Compressor (N2 Rotor)
HPSOV	High Pressure Shutoff Valve
HPT	High Pressure Turbine
HYDIM	Hydraulic Interface Module
HYQUIM	Hydraulic Quantity Interface Module
HZ	Hertz (Cycles Per Second)
IBIT	Initiated Built In Test
IBVSU	Instrument Bus Voltage Sense Unit
IDG	Integrated Drive Generator
IDS	Integrated Display System
ILES	Inboard Leading Edge Station
INS	Inertial Navigation System
INTC	Interconnect
IOEU	Inboard Overhead Electronics Unit
IPC	Illustrated Parts Catalog
IPL	Illustrated Parts List
IRS	Inertial Reference System
JPR	Jumper
KHZ	Kilohertz
KVA	Kilovolt Ampere
LGHTNG	Lightning
LMP	Lamp
LO	Lock Out
LP	Lightning Protector
LPT	Low Pressure Turbine
LRRA	Low Range Radio Altimeter
LRU	Line Replaceable Unit
LSDA	Low Speed Digital To Analog
M	Mach

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M MUX	Main Multiplexer
MAI	Multiplexer Action Item
MAWEA	Modularized Avionics and Warning Electronics Assembly
MC*	Master Change
MCDP	Maintenance Control and Display Panel
MCDU	Multipurpose Control and Display Unit
MCP	Mode Control Panel
MGSCU	Main Gear Steering Control Unit
MHRS	Magnetic Heading Reference System
MHZ	Megahertz
MIDU	Multipurpose Interactive Display Unit
MKR BCN	Marker Beacon
MLS	Microwave Landing System
MNFST	Manifest
MOSFET	Metallic Oxide Semiconductor Field Effect Transistor
MR*	Modification Revision
MTCHG	Matching
MTG	Muting
NBR	Number
ND	Navigation Display
NGT	Night
OAP	Output Audio Processor
OFCR	Officer
OFL	Outflow
OMS	Onboard Maintenance System
OOEU	Outboard Overhead Electronics Unit
OPAS	Overhead Panel ARINC 629 System
OPBC	Overhead Panel Bus Controller
OVDR	Overdoor
OVFL	Overfill
OVHT	Overheat
OVWG	Overwing
PA	Passenger Address
PA/CI	Passenger Address/Cabin Interphone
PCH	Patch
PCT	Percent
PDU	Power Drive Unit
PES	Passenger Entertainment System
PFC	Primary Flight Computer

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PFD	Primary Flight Display
PFIDS	Passenger Flight Information Display System
PIS	Passenger Information Sign
PKG	Parking
PMA	Permanent Magnet Alternator
PMG	Permanent Magnet Generator
PMS	Performance Management System
POR	Point of Regulation
PRCLR	Precooler
PROT	Protection
PRR*	Production Revision Record
PRSOV	Pressure Regulating Shut-Off Valve
PSA	Power Supply Assembly
PSEU	Proximity Switch Electronics Unit
PSU	Passenger Service Unit
PTT	Press To Talk/Push To Talk
PVD	Paravisual Display
PYL	Pylon
QAM	Quadrature Amplitude Modulation Unit
QAR	Quick Access Recorder
QDT	Quadrantal
RAT	Ram Air Turbine
RDMI	Radio Distance Magnetic Indicator
RDP	Roller Drive Power
RDU	Remote Display Unit
REP	Repellent
RFLNG	Refueling
RGLTN	Regulation
RMCP	Radio Management Control Panel
RR*	Rapid Revision
RST	Reset
RSV	Reserve
RTC	Rudder Trim Control
RVSG	Reversing
RVT	Rotational Variable Transformer
SAARU	Standby Attitude/Air Data Reference Unit
SAT	Static Air Temperature
SATCOM	Satellite Communications
SB*	Service Bulletin

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SCF	System Cardfile
SCM	Spoiler Control Module
SCU	Seat Control Unit
SDI	Source Destination Identifier
SEB	Seat Electronics Box
SEB/ST	Seat Electronics Box With Self Test
SEI	Standby Engine Instruments
SEU	Seat Electronics Unit
SHVR	Shaver
SL*	Service Letter
SN	Sign
SO	Shut-off
SO	Standard Option
SPL	Splice List
SRM	Stabilizer Trim/Rudder Ratio Module
SUP-NUM	Supernumerary
SVU	Seat Video Unit
SWDL	Software Data Loader
SWL	Sidewall
T/M	Torque Motor
T/R	Thrust Reverser
TAI	Thermal Anti-Ice
TAT	Total Air Temperature
TBV	Turbine Bypass Valve
TCA	Turbine Cooling Air
TCAS	Traffic Collision Avoidance System
TCC	Turbine Case Cooling
TDL	Time Delay Logic
TDX	Torque Differential Transmitter
TERM BLK	Terminal Block
TGT	Turbine Gas Temperature
THSHD, THRSH	Threshold
TL	Tilt
TLA	Thrust Lever Angle
TMC	Thrust Management Computer
TMS	Thrust Management System
TO	Turn-off
TPIS	Tire Pressure Indication System
TPMU	Tire Pressure Monitor Unit

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TR	Torque Receiver
TR	Transformer Rectifier
TRA	Thrust Resolver Angle
TRC	Thermatic Rotor Control
TRU	Transformer Rectifier Unit
TS	Terminal Strip
TTG	Time To Go
TURB	Turbulence
TX	Torque Transmitter
UNLK	Unlock
VBV	Variable Bypass Valve
VCC	Video Control Center
VES	Video Entertainment System
VGH	Velocity, Gravity, Height
VIGV	Variable Inlet Guide Vane
VLV	Valve
VSI	Vertical Speed Indicator
VSV	Variable Stator Vane
VTY	Vanity
W/A	Wrap Around
WAI	Wing Anti-Ice
WBA	Wire Bundle Assembly
WEU	Warning Electronic Unit
WF	Fuel Flow (Weight of Fuel)
WF or wf	Weight of Fuel
WHCU	Window Heat Control Unit
WIU	Wire Integration Unit
WXR	Weather Radar
XFD	Crossfeed
XNT	Transient
XPC	External Power Contactor
XPNDR	Transponder
ZMU	Zone Management Unit

Where marked with an asterisk (*), see the GENERAL INFORMATION section, in the Wiring Diagram manual, for additional definition information.

INTRODUCTION

1. EQUIPMENT LIST—GENERAL

Electrical and electronic equipment are shown on wiring diagrams and schematics with alphanumeric designators. These designators are used as cross-reference symbols to the Equipment List where the Part Numbers and Part Descriptions are shown. Splices, grounds, terminals and wire bundles are not included in the Equipment List.

A. Equipment List Data Fields

(a) EQUIP Field (Equipment Number)

The Equipment Number field may contain up to ten (10) alphanumeric characters. The Equipment Number always begins with a letter and may contain a space followed by another character.

NOTE: Equipment numbers 9000 through 9999 and 90000 through 99999 are reserved for customer use. Using these customer assigned equipment numbers facilitates identification of customer installed equipment. Customers should use only customer assigned equipment numbers, not Boeing assigned equipment numbers reported in the Equipment List.

The following list shows the categories assigned to the Basic Equipment Designators.

EQUIPMENT DESIGNATOR	TYPE OF EQUIPMENT
A	Disconnect Brackets or Stanchions
B	Batteries, Small
	Bells
	De-Icing Boots
	Ice Detector
	Microphones
	NESA Windows
	Pitot Heater
	Speakers
C	Circuit Breakers
D	Equipment Mating Connectors
E	Equipment Racks
GD	Grounds (Airframe)
H	Overflow Categories, Miscellaneous Bundle Termination Equipment)
J	Junction Boxes
K	Relay, Contactors
L	Lamp Assemblies
	Lights, Lamps

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EQUIPMENT DESIGNATOR	TYPE OF EQUIPMENT
continued...	
M	Accessory Units
	Amplifiers
	Antenna Tuners
	Antennas
	Batteries
	Control Units and Panels
	Galleys
	Generators
	Generator Components
	ILS Rack
	Modules (subassemblies of panels)
	Pumps
	Transmitters
N	Clocks
	Indicators
	Instruments
	Meters
P	Panels
QD	Control Stand Quick Disconnect
R	Diodes Resistors
	Potentiometer
	Rectifiers
	Rheostats
S	Switches
SM	Splices (Within a bundle)
SP	Splices (Between bundles)
T	T-R Units
	Transformers
TB	Terminal Blocks
	Terminal Strips
TS	Sensors, Transducers
V	Valves
W	Wire Bundles (See Wire List. Bundles are not listed in the Equipment List.)
X	Overflow Categories
Y	Line Replaceable Units

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1) An Equipment Fixture Code is identified when the Equipment Number contains a space followed by another character. The Equipment Fixture Code is typically an alphabetic character.

TYPE OF FIXTURE	FIXTURE CODES
Equipment Mating Connector Fixture (Clamps, Adapters, Backshell, etc.)	T, U, V
Inline Connector Fixtures:	
●Receptacle Fixture	K, L, M
●Plug Fixture	Q, R, S
Receptacle Identification Fixture:	
●Decal	W
●Adapter	X
●Plug Button	Y
●Cover	Z
Coaxial Tee's, Connector Fixture	T, U, V
Components of Purchased Assemblies	A-Z
Lights:	
●Bulbs	T, U, V
●Connectors	D
●Caps	C
●Ballasts which are non-optional parts (unique part numbers) but serve alternate functions.	A, B
Customer Designated Fixtures	Y, Z

(b) OPT Field (Option)

The Option field indicates if optional part numbers may be used, and if so, the order of preference.

1) Boeing "as delivered" Options:

When the OPT field is empty or a zero appears, no options are permitted due to systems or physical restrictions. A "1" indicates that options are available.

OPT	Option Available
	No
0	No
1	First Option
2	Second Option
3	Third Option

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2) Customer Requested Options:

Customer requested options are used for the incorporation of post-delivery changes, such as Boeing Service Bulletins and Customer Originated Changes. Option "9" is used for the incorporation of these changes. When more than one option is available, the four allowed options are:

OPT	Option Available
9	First Option
8	Second Option
7	Third Option
6	Fourth Option

(c) PART NUMBER Field

The Part Number field provides the part number for the equipment item. It will be a unique number defined by either vendor, Military or Boeing drawing and/or specification.

(d) PART DESCRIPTION Field

The Part Description is derived from the actual use of the item or the title of its associated drawing or specification.

(e) USED ON DWG Field (Used On Drawing)

The Drawing that contains installation details for that part.

(f) VENDOR Field (Vendor Code)

For Vendor Code translation, refer to:

H4-1: Federal Supply Code for Manufacturers-Name to Code
H4-2: Federal Supply Code for Manufacturers-Code to Name

Published by:

Defense Supply Agency
Defense Logistics Services Center
Federal Center Building
Battle Creek, Michigan 49016

SPECIAL VENDOR CODE ASSIGNMENT

See the Vendor Codes section.

(g) QTY Field (Quantity)

The Quantity shown reflects the number of times each item is used on the airplane.

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(h) DIAGRAM Field

The Diagram listed is the diagram or schematic on which the item appears. However, one item may be shown on more than one diagram or schematic.

(i) STATION/WL/BL Field (Location)

Location information is shown directly below the Vendor Code. If the equipment is located on or near a panel, equipment rack, disconnect panel or terminal block, that item is referenced for locations. All other equipment locations are shown by station line, water line, and buttock line. See the Manual Usage section for a more detailed explanation.

(j) EFFECTIVITY Field

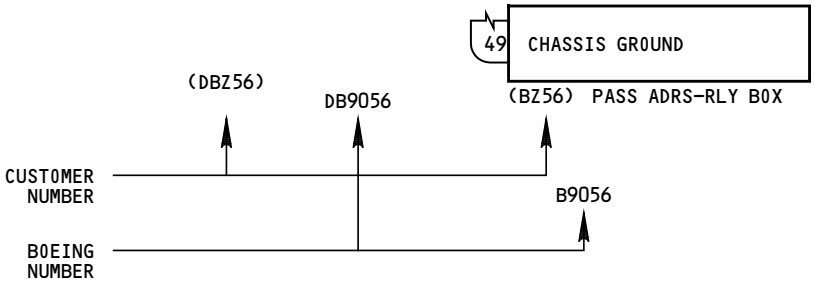
This is a Boeing or a Customer assigned number to keep track of airplanes. An effectivity is presented as a single airplane or in a range, e.g., PP001-PP099 or 001-999 or AAA-ZZZ, covering several airplanes. The word "ALL" means that the item is applicable for all aircraft listed in the Effective Aircraft section.

2. CUSTOMER ASSIGNED INCOMPATIBLE EQUIPMENT, WIRE AND BUNDLE NUMBERS

Customer assigned equipment item, wire and/or bundle numbers that are not compatible with the Boeing computer program will have an additional number assigned. This Boeing assigned number, will appear in the computer generated listings, i.e., Equipment, Wire, Ground, Splice, Terminal Strip and Hookup Lists.

NOTE: On the wiring diagram, the customer assigned equipment item, wire and/or bundle numbers will be placed in parenthesis next to the Boeing assigned numbers.

CUSTOMER ASSIGNED EQUIPMENT ITEM NUMBER



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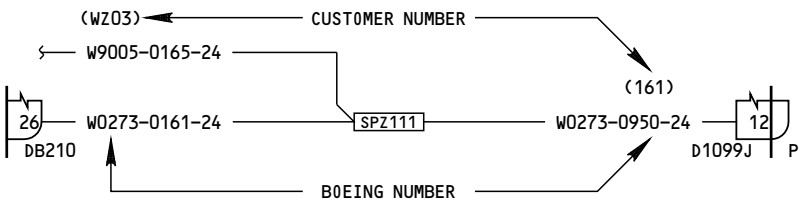
CUSTOMER ASSIGNED WIRE AND BUNDLE NUMBER



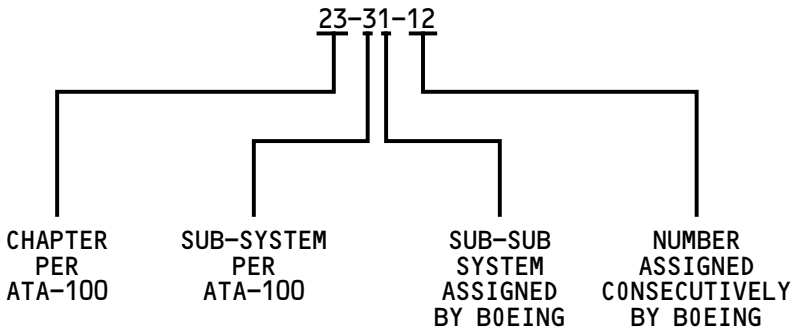
INTRODUCTION

1. BASIC INFORMATION ABOUT WIRING DIAGRAMS

A. Wiring Diagram And Page Numbering

(a) Wiring Diagram Numbering

The Diagram numbering is in accordance with ATA Specification 2200 Revision 2001.1



The first three digits will be identical on diagrams and schematics.

NOTE: When a diagram is referenced to another, only the diagram number is used. Therefore, where there is more than one page of the same diagram, it is necessary to refer to the effectivity block to make certain the diagram applies to the airplane of interest.

(b) Diagram Page Numbering

Diagram page numbering begins at 1 then 2, 3 etc. Each page reflects different delivered configurations between aircraft. See the following example.

DIAGRAM	PAGE	EFFECTIVITY
21-31-12	1	001-004
21-31-12	2	005-999

The Page numbers (Page 101, 102, etc.) are used to represent different delivered configurations of a given schematic which may be applicable to different airplanes within the customer's fleet. When a schematic page number has a suffix (e.g., 101A, 102A for Customer Originated Changes or 101.1, 102.1, etc. for Service Bulletins) it reflects a post-delivery configuration for the same airplane(s). Both the configuration delivered by Boeing and the configuration after modification remain in the manual until the airline notifies Boeing that the post-delivery change has been incorporated in the customer's entire fleet of that model, and requests Boeing to delete the obsolete configurations.

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(c) Diagram Sheet Numbering

If Diagrams of the same circuit can not be shown on one sheet, they are shown on additional sheets having the same title, diagram number and page number.

When reference is made to a multisheet diagram, the sheets will be included in the reference.

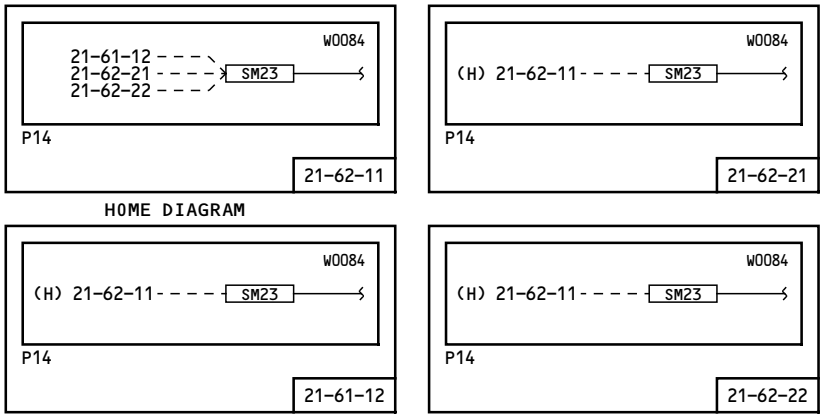
EXAMPLE:

34-11-11 SH 1	34-11-11 SH 3
34-11-11 SH 2	34-11-11 SH 4

B. Home Diagram

Any wire termination which is used for three or more wires shown on three or more wiring diagrams shall be assigned a "Home" diagram. The "Home" diagram shall indicate all connections on the termination and reference the diagram that shows the connection.

(a) Splices



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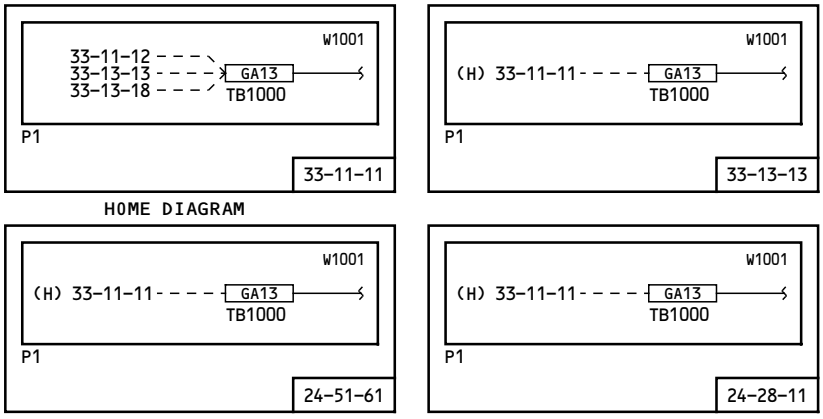
(b) Terminal Blocks



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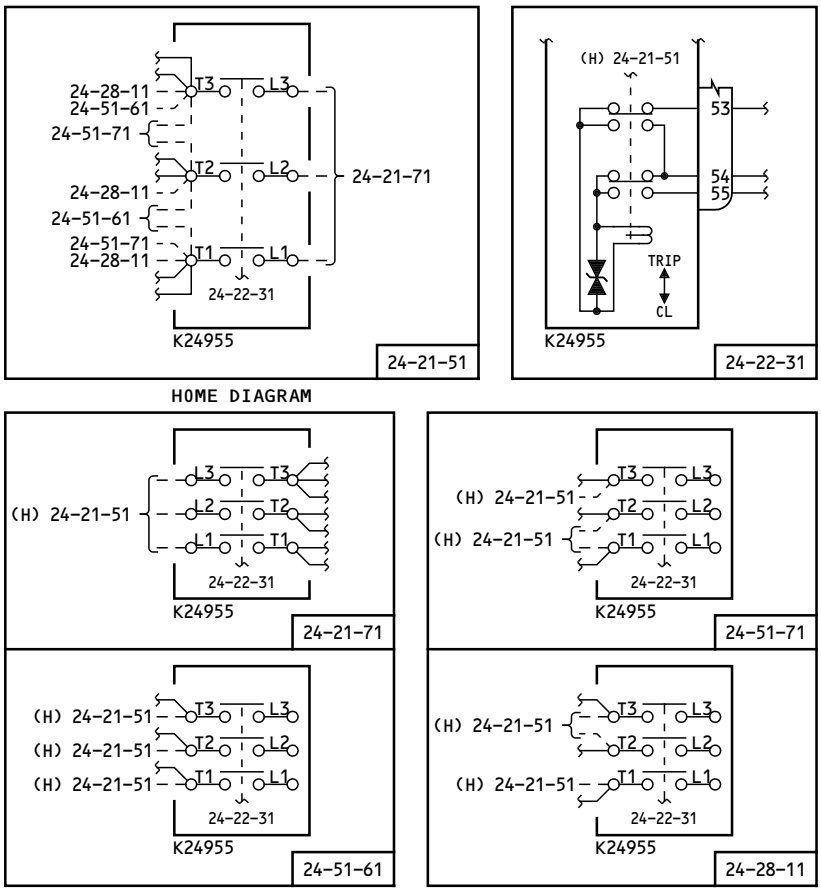
(c) Relays (The Mechanical Linkage is referenced to the diagram containing the control circuit)



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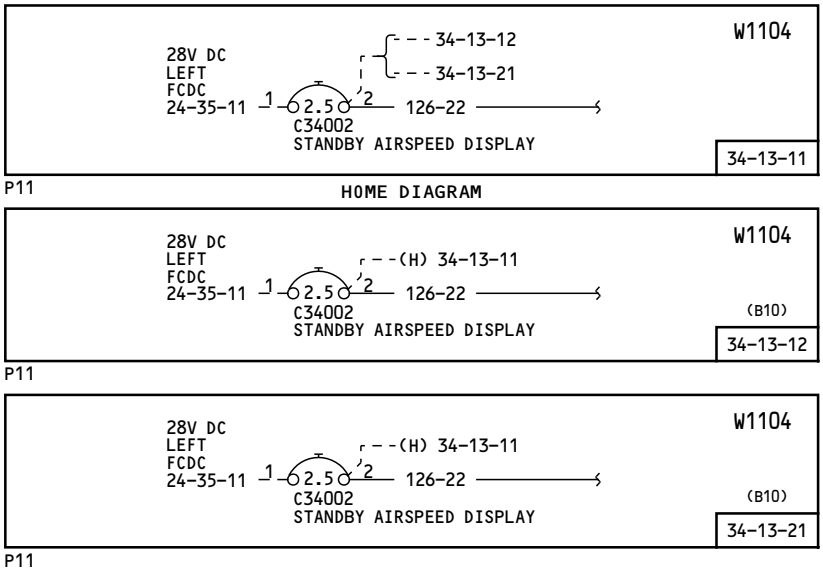
(d) Circuit Breaker



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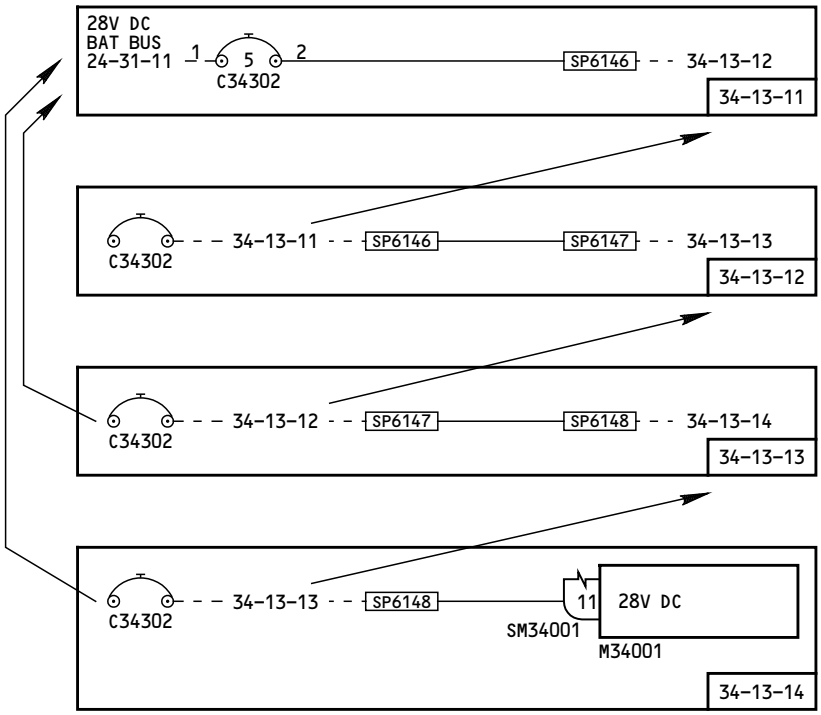
C. Power and Ground Indication

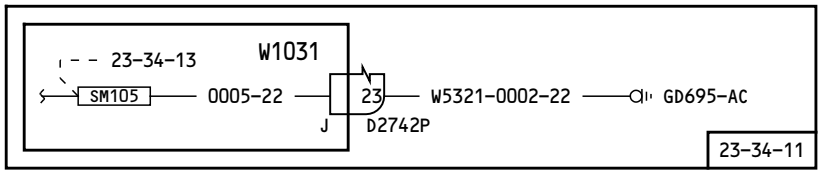
(a) Power Source Indication

The circuit breaker symbol, equipment designator, nomenclature and grid location, and diagram number of power source, are shown for circuits which are routed through connectors, splices and terminals.



(b) Ground Indication

The diagram detailing the complete ground circuit may contain references to other diagrams.



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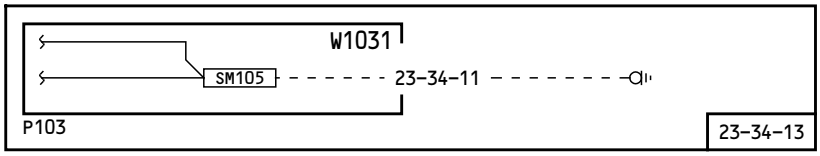
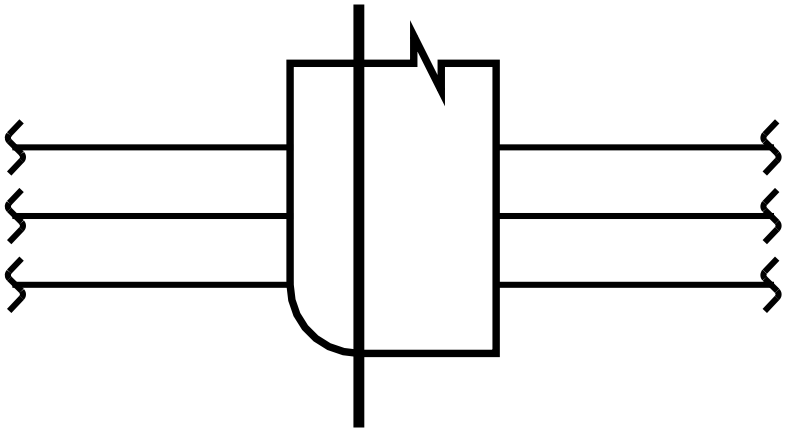
The referenced diagrams contain the ground symbol and a reference to the diagram which depicts the complete ground circuit.



D. Connector Symbols

Connector symbols are shown broken when the same connector is shown elsewhere on that or another diagram.



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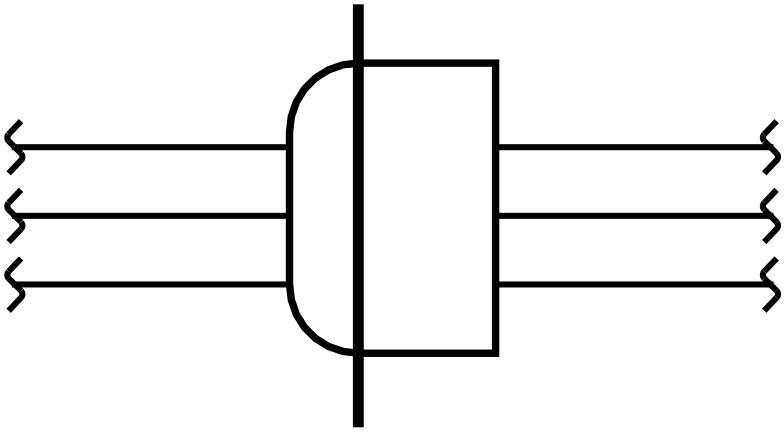
Connector symbols are shown complete when all used contacts are shown on one diagram.

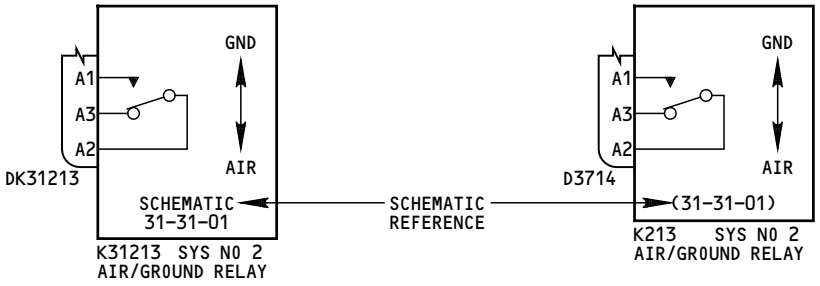


E. Galleys and Lavatories

Wiring Diagrams will show Boeing wiring to the interface with the galley and lavatory units.

F. Schematic References Shown on Wiring Diagrams

An ATA number on Wiring Diagrams shown with the word SCHEMATIC, SCHEM, or in parentheses within modules, is a Schematic reference. See the following example.



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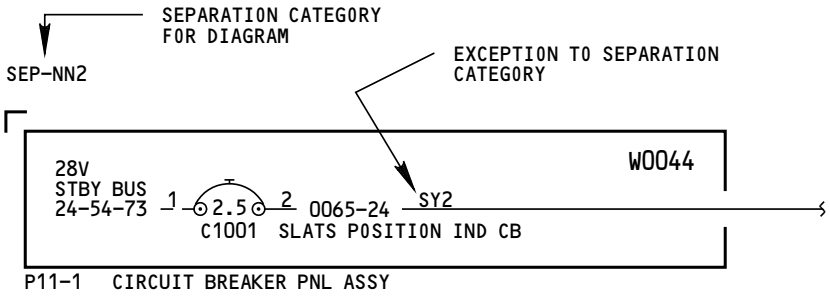
G. Wire Separation Identification

(a) The wire separation category assigned to the majority of wires on a diagram is shown in the upper left hand corner of each diagram, e.g., SEP-NN2. Wires on a diagram not part of that category are individually labeled.

(b) The actual code definitions may be found in the Codes section of the Introduction.

(c) These wire separation codes are intended for production use. Chapter 91-21-13 Master Bundle List includes the wire separation codes. The lack of a wire separation code on a diagram does not indicate there is no wire separation required. Consult the Master Bundle List for the wire separation assigned to the bundle.



INTRODUCTION

1. CHARTS

The Chapter 91 Charts contain airplane station arrangements, wire zones, major wire bundle pathways, panel and equipment shelf locations, circuit breaker panel charts, disconnect bracket charts and Master Bundle information.

2. LISTS

The Chapter 91 Lists are numbered as follows:

91-02-00	- -	Circuit Breaker List
91-04-00	- -	Bracket List
91-21-11	- -	Wire List
91-21-12	- -	Spare Wire List
91-21-13	- -	Master Bundle List
91-21-21	- -	Ground List
91-21-31	- -	Splice List
91-21-41	- -	Terminal Strip List
91-21-51	- -	Hookup List

The following paragraphs in this section define the contents of Chapter 91 Lists. The Wire List is the Primary source for Spare Wire through Hookup Lists.

A. Circuit Breaker List—Chapter 91-02-00

(a) The Circuit Breaker List reflects all the circuit breakers within an airplane and is derived from data contained in the Equipment List. It lists, in alphanumeric order, each Panel/Access Door, the Description and the Diagram of that panel.

(b) For each Panel/Access Door the grid location (Grid No), the circuit breaker number (Ckt Bkr), circuit breaker label (Description), Diagram and Effectivity are listed.

(c) Unused grid locations are not listed.

(d) The Circuit Breaker List is used as supplemental data for all Chapter 91-02-XX Panel Charts containing circuit breakers.

B. Bracket List—Chapter 91-04-00

(a) The Bracket List reflects all the disconnect brackets within an airplane and is derived from data contained in the Equipment List. It lists, in alphanumeric order, each disconnect bracket (BRACKET NO.), title (DESCRIPTION), EFFECTIVITY, and where the information is available: maximum number of positions (MAX POS), and location (STATION/WL/BL).

(b) Each POSITION within a bracket, that is being used, is listed, followed by the mounted receptacle number (RECEPTACLE) and its wire bundle number (BUNDLE), the mating plug (PLUG) and wire bundle number (BUNDLE) and the EFFECTIVITY.

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(c) Positions not containing connectors are not listed but can be determined by viewing the graphical representation of the bracket in the 91-04-XX Disconnect Bracket Charts. In general, brackets with numerically numbered positions (001, 002, 003...) are consecutively numbered and any omitted number is likely present on the bracket but unused. On brackets with alphanumeric grid positions (A01, A02, B04, C07...) are probably approximately rectangular with the alpha part representing one axis of the grid and the numeric part representing the other axis of the grid. In those cases, the positions are generally going to be numbered in a consistent rectangular grid method (A01, A02, ... A05, B01, B02, ... B05, ... F01, F02, ... F05). Any positions in this pattern that are not listed as used are likely on the bracket but unused. Some bracket positions are also numbered with strictly alphabetical values (A, B, C, F, G...). In all of these cases, it is necessary to reference the graphical representation of the bracket to be sure of the existence of a particular unused bracket position.

(d) The Bracket List is used as supplemental data for all 91-04-XX Disconnect Bracket Charts.

C. Wire List—Chapter 91-21-11

The Wire List reflects all the wire bundles within an airplane. It lists, in alphanumeric order, each Bundle Number (Bundle No.), Part Number, Description and the wires within each bundle.

(a) BUNDLE NO. Field (Wire Bundle Number)

Each wire bundle is given an item number beginning with "W". This item number is the first part of the wire number and is derived from the wire bundle drawing number. The four digits XXXX of the item number is the wire bundle number. The first part of the wire number thus becomes WXXXX.

Wire bundle numbers W9001-W9999 are reserved for customer use.

(b) PART NUMBER and DESCRIPTION Fields

The wire bundle part number is derived from the wire bundle drawing number. A description of the bundle follows the part number.

(c) WIRE No./GA/CO Field (Wire Number/Gauge/Color)

A typical wire number consists of the wire identifier and gauge. A color designator may appear at the end of the wire identifier or gauge number. See Paragraph 3, for wire number details.

The wire numbers are physically printed or stamped on each wire and are also used on the Wiring Diagrams to identify the wires.

Wire numbers 901-999 and 9001-9999 are reserved for customer use.

(d) TY Field (Wire Type)

The Wire Type code is a two-character identifier for the type of wire used. These codes are described in 20-00-13 of the Standard Wiring Practices (Chapter 20).

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(e) Fam Field (Wire Family)

Multi-conductor wires such as twisted or shielded wires are grouped as a family of wires. Each family of wires is given a code which is unique per bundle. Therefore, the family code is used to denote that some wires are physically related to each other either by being twisted together or by sharing the same shield or jacket. Family codes are assigned a code between A-ZZ.

(f) FT-IN Field (Wire Length)

1) The length of the wire is shown in this field.

   Critical lengths and tolerances will be shown on diagrams for applicable wires or bundles.

   Measure the wire length from the connector face or terminal ring centerline to the connector face or terminal ring centerline at the opposite wire end.

2) A wire without a length will appear if it is part of a family of wires. The length for this particular wire is usually specified on the lowest wire number in that family group.

(g) DIAGRAM Field (Diagram Reference)

1) The numbers in this field reflect the diagram on which the wire appears. The diagram references apply to any functional, ARINC Spare, or System Spare wire. These wires will not be shown on the wire diagram and are not spare wires.

   NOTE: The diagram reference "99-99-99" is used for the wire bundle manufacturing process (e.g., Stub wires or wires to maintain pin circuit separation).

2) Spare wires may be found in the Chapter 91 Wire List, Ground List, Terminal Strip List, Splice List and Hookup List with "SPARE" in the DIAGRAM field. These spare wires may be used by the customer for Kit and Service Bulletin incorporations by assigning diagram numbers to those particular wires used.

3) Boeing identifies wires as spare that are no longer functional but may remain in a bundle. These wires will be identified in the Chapter 91 Lists as "SPARE*", and the wires will be deleted from the diagrams. These wires are available for customer use on an individual airplane basis. Boeing may choose to delete or re-use these wires.

(h) EQUIP From and To Field (Equipment Number)

There are two EQUIP fields, one for each end of the wire. Any item designator found in this field, other than splices and grounds, will be defined in the Equipment List.

(i) TERM From and To Field (Terminal Number)

There are two TERM fields, one for each end of the wire. The contact identifiers in these fields are typically alphanumeric characters.

1) An equal sign (=) appearing ahead of the identifier means no identification is to be found on the part and the identifiers used are for hookup and test purposes.

2) "REF" is used to indicate a termination in the vicinity of, but not in, the splice or terminal indicated in the EQUIP field. It may be used with an SP number instead of SPREF in the EQUIP field.

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3) "DED" indicates the shield is dead ended and not terminated by pigtail or jumper wire.

4) "CAP" indicates a wire terminated by an end cap near the equipment shown.

5) Ground terminations are shown as A.., AC Ground; D.., DC Ground; S.., Static or Shield or Special Ground.

6) Color codes represent the pin identification codes of colored pigtails from vendor furnished equipment. See Paragraph 3.B(4) for TERM color codes. The wire number associated with the pigtails are in the form A-A thru Z-9.

7) Pin and socket lower case letter identifiers are indicated by an upper case letter followed by a minus sign (-), (e.g. F- = f).

8) The following are special shield terminations:

- PER-S280W605 Backshell - Zero Inch Termination
- PERB-S280W603 Backshell - Zero Inch Termination
- PERG-S280W601 Multi Insert Ground Block - 3 Inch Maximum
- =CC-Strain Relief - 2 Inch Maximum
- G-Terminal Track Ground - 2 Inch Maximum

(j) Type Field From and To (Terminal Type)

The Terminal Type codes appearing in this field are defined in the CODES section identifying:

1) Codes for Lug (Stud) size (diagram symbol depicted).

2) Codes for Special Terminals.

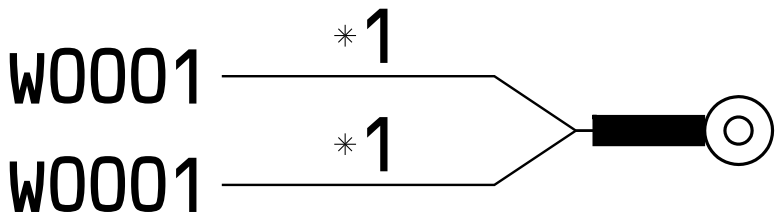
3) Codes for Special Contacts.

(k) SPLICE Field From and To (Splice)

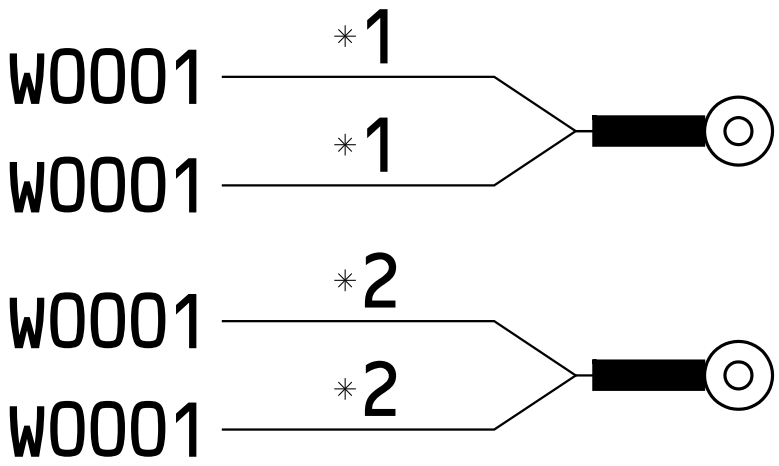
This field shows conditions under which the connection is made:

INTRODUCTION

1) * In the splice field indicates two or more wires terminate in the same attaching device, i.e., lug, pin, or solder terminal (not used on SP or SM splices).



2) * 1, * 2, * 3 designate which wires appear in which single device, i.e., * 1 wires are lugged together; * 2 wires are lugged together in a second lug and * 3 wires are lugged together in the third lug.



3) Ferrule groups or shielded wires with shields tied together with jumpers are identified as a common terminus by a two letter F( ) code. All shields with an "FA" in either SP field are common.

INTRODUCTION

Sometimes a jumper wire number FR-( ) is used to connect the FA shields and a termination such as a pin in a connector or to a ground. Jumper FRAA is required to terminate FA, jumper FRAB is required for FB and so on.

4) Shields terminating in a splice will show "A", "B", and so on, in the SP field. The wire from the splice to another termination will be numbered "JPA", "JPB", and so on.

(I) EFFECTIVITY Field

This is a Boeing or a Customer assigned number to keep track of airplanes. An effectivity is presented as a single airplane or in a range, e.g., PP001-PP099 or 001-999 or AAA-ZZZ, covering several airplanes. The word "ALL" means that the item is applicable for all aircraft listed in the Effective Aircraft section.

D. Spare Wire List—Chapter 91-12-12

(a) The Spare Wire List reflects all spare wires within the airplane. Spare Wires are reported in order by From Matewith Equipment, Position Number on that Equipment, the Wire Bundle Number, then Wire Bundle Separation Code, From Terminating Equipment Number, and Wire Number.

(b) Additional information provided in the Spare Wire List is Wire Bundle Description, Terminal Number on the From Equipment, Terminal Type on the From Equipment, the Wire Gauge, Wire Type, To Equipment Number, Terminal Number on the To Equipment, Terminal Type on the To Equipment, the To Matewith Equipment, the Position on the To Matewith Equipment, and Effectivity.

E. Master Bundle List—Chapter 91-21-13

(a) The Master Bundle List reflects all wire bundles within the airplane. Master Bundle List is reported in Bundle number order with the corresponding Separation Code and Description.

(b) The Equipment field contains the Equipment Item Number of the ends of that Wire Bundle. The Matewith field contains the Equipment Item Number where the end equipment mates with. The LOCATION may contain position, Panel numbers or Station/Water/Buttock line information. The MW Connector field contains the Equipment number of the mating connector. The MW Bundle field contains the Bundle number.

F. Ground List—Chapter 91-21-21

(a) The Ground List reflects two types of airframe grounds used within an airplane. Ground Blocks (GB) are used only in pressurized areas, while Ground Studs (GD) are used in both pressurized and non-pressurized areas. Grounds on shelves and panels (GDM, GDX, GDY, GDZ, GBX, GBY, and GBZ) are not listed as they are unique within a specific shelf or panel.

(b) The list gives ground numbers in alphanumeric order, type of ground (AC, DC or ST), effectivity, location (STATION/WL/BL), terminal type (TYPE) and the diagram it is shown on. Additionally, each wire terminating at a ground is listed.

(c) The detail rows below the Ground number contain Termination number, Termination type, Wire bundle number, Wire number within that bundle, wire gauge and color of that wire, diagram reference and effectivity.

INTRODUCTION

G. Splice List—Chapter 91-21-31

(a) The Splice List reflects all splices (SP) unique within an airplane. Splices (SP) are used when connecting wires from other wire bundles and vendor wires within the same wire bundle. Smooths (SM) are not listed as they are unique only to a wire bundle.

(b) Splice List reflects all splices within an airplane. The Splice List is reported in alphanumeric order, with the Location (Station/WL/BL).

(c) The detail rows below the Splice number contain Wire bundle number, Wire number within that bundle, wire gauge, color of that wire, type of wire and the diagram reference, and effectivity.

H. Terminal Strip List—Chapter 91-21-41

(a) The Terminal Strip List reflects all the terminal strips within an airplane. The Terminal Strip List is reported in alphanumeric order with their part number and location (STATION/WL/BL).

(b) The detail rows below the Terminal Strip number contain the terminal block fixture identifier, each terminal on a strip, the terminal type, the wire bundle number, the wire number, the gauge and color, the diagram depicting each wire and the effectivity for each wire.

(c) The fixture (FIX) field reflects the type of terminal block installed on a terminal strip. The various types of terminal blocks are shown in the Symbols section.

(d) The term G reflects the wire terminating at the integrated grounding module part of the terminal track.

I. Hookup List—Chapter 91-21-51

(a) The Hookup List reflects all wire terminating devises except grounds, splices, terminal strips and single-phase circuit breakers within an airplane. The Hookup List reports the Equipment in alphanumeric order with their location (STATION/WL/BL) and Description.

Single-phase (one circuit) circuit breakers are not listed for two primary reasons:

1) Each unit is shown complete on the affected diagram. Hookup List data would be redundant.

2) The benefits to be derived from listing the units would not justify the increased size of the manual.

(b) The detail rows below the Equipment contain the terminals on these devises and the terminal type. The wire bundles, their wire numbers gauge and color terminating at each terminal is listed along with the diagram on which the terminal is depicted and its effectivity.

INTRODUCTION

3. EXPLANATION OF WIRE NUMBERING AND COLOR CODES FOR THE CHAPTER 91 LISTS (91-21-11 THRU 91-21-51).

A. Wire Numbering

Wire serial numbers are wire bundle unique and are generally chosen from the following categories:

NOTE: Wire numbers reserved for Airline use are 901-999 and 9001-9999, based on the existing wire number patterns in a given Wire bundle. For example: Wire numbers with three numerics will use 901-999 and Wire numbers with four numerics will use 9001-9999.

CATEGORY	WIRE NUMBER
Single (Unshielded)	0001-0999
Single Shielded Wire	1001-1999
Single Wire Shield Pigtail	1001Z-1999Z
Twisted Pair Unshielded	2001B-2499B 2001R-2499R
Twisted Pair Shielded	2501B-2999B 2501R-2999R
Twisted Pair Shield Pigtail	2501Z-2999Z
Twisted Triplet Unshielded	3001B-3499B 3001R-3499R 3001Y-3499Y
Twisted Triplet Shielded	3501B-3999B 3501R-3999R 3501Y-3999Y
Twisted Triplet Shield Pigtail	3501Z-3999Z
Twisted Quads Unshielded	4001B-4249B 4001G-4249G 4001R-4249R 4001Y-4249Y
Twisted Quads Shielded	4251B-4499B 4251G-4499G 4251R-4499R 4251Y-4499Y
Twisted Quads Shield Pigtail	4251Z-4499Z
Special Wires (High Temp Thermocouple, etc.)	4501-4999 4501AA-4999YY
Overflow of Above (does not apply to shields)	5501-8999
Coaxial Cable	001CX-999CX
Shield	001C0-999C0
Twinax Cable	001X1-999X1 001X2-999X2
Shield	001C0-999C0
Triaxial Cable	001TX-999TX
Inner Shield	001TI-999TI

INTRODUCTION

CATEGORY	WIRE NUMBER
continued...	
Outer Shield	001T0-999T0
Vendor Furnished Wires	A-A thru Z-Z 1-1 thru 8-99
Shield Pigtail Wires Ferrule Group to a Termination (Pin, Ground, etc.)	FRAA-FRZZ (AA-ZZ is the Ferrule Splice code)
Polarizing Pin or Rod in Relay Sockets	PA01-PY99
Braid Over Bundle	YAAA-YZZZ
Separation Sleeving Protective Sleeving	S001-S999 P001-P999

B. Wire Color Codes

Wires may be identified by color instead of wire numbers.

WIRE COLOR	WIRE NUMBER
Black	OBLK
Blue	OBLU
Green	OGRN
Red	ORED
Violet	OVIO
White	OWHT
White/Black	OWBK
White/Brown	OWBN
White/Brown/Red	OWNR
White/Green	OWGR
White/Orange	OWOR
White/Pink	OWPK
White/Purple	OWPU
White/Purple/Red	OWPR
White/Red/Blue	OWRB
White/Red/Green	O
White/Violet	OWVI
White/Yellow	OWYL
White/Yellow/Red	OWYR

(a) Vendor furnished pigtails use an identifying feature of the wire (color, no., etc.) A red pigtail wire will be considered as connecting to terminal "Red" on the pigtailed equipment side, then to a splice, pin, etc., on the other side.

Items with pigtails where unique identification is not provided should be numbered uniquely. The identification should not exceed three digits and should be numbered consecutively 1,2, 3, etc.

INTRODUCTION

Vendor furnished pigtail color codes used in the "TERM" field are:

COLOR	CODE
Black	BLK
Black/Blue	BKB
Black/Brown	BKN
Black/Green	BKG
Black/Gray	BKA
Black/Orange	BKO
Black/Red	BKR
Black/Violet	BKV
Black/White	BKW
Black/Yellow	BKY
Black/White/Orange	BWO
Black/White/Red	BWR
Blue	BLU
Blue/Black	BBK
Blue/Brown	BBN
Blue/Green	BLG
Blue/Green/Black	BGK
Blue/Orange	BOR
Blue/Purple	BPR
Blue/Red	BRD
Blue/White	BWH
Blue/White/Orange	UWO
Blue/Yellow	BLY
Brown	BRN
Brown/Blue	BRB
Brown/Gray	BGR
Brown/Green	BRG
Brown/Orange	BRO
Brown/Red	BRR
Brown/Violet	BRV
Brown/Yellow	BRY
Gray	GRA
Green	GRN
Green/Black	GBK
Green/Purple	GPR
Green/Red	GRD
Green/White	GWH

INTRODUCTION

COLOR	CODE
continued...	
Green/Yellow	GYL
Green/Black/Orange	GBO
Green/Black/White	GBW
Orange	ORG
Orange/Black	OBK
Orange/Brown	OBN
Orange/Green	OGR
Orange/Purple	OPR
Orange/Red	ORD
Orange/Yellow	OYL
Orange/Black/Green	OBG
Orange/Black/White	OBW
Pink	PNK
Purple	PUR
Red	RED
Red/Black	RBK
Red/Black/Green	RBG
Red/Black/White	RBW
Red/Brown	RBR
Red/Green	RGR
Red/Orange	ROR
Red/Purple	RPR
Red/White	RWH
Red/Yellow	RYL
Red/Yellow/Green	RYG
Uninsulated Wire	UNI
Violet	VIO
White	WHT
White/Black	WBK
White/Blue	WBU
White/Blue/Yellow	WBY
White/Brown	WBN
White/Gray	WGY
White/Green	WGR
White/Orange	WOR
White/Orange/Black	WOB
White/Purple	WPU

INTRODUCTION

COLOR	CODE
continued...	
White/Red	WRD
White/Red/Blue	WRB
White/Yellow	WYL
White/Black/Brown	WBB
White/Black/Orange	WBO
White/Black/Red	WBR
White/Pink	WPK
White/Red/Green	WRG
Yellow	YEL
Yellow/Black	YBK
Yellow/Green	YGR
Yellow/Orange	YOR
Yellow/Purple	YPR

Pigtail identifications that are Boeing assigned will be preceded by an equal sign (=).

INTRODUCTION

1. WIRE TYPE CODE

This information is covered in Chapter 20, Standard Wiring Practices, Section 20-00-13.

2. VENDOR CODE

For Vendor Code translation, refer to:

H4-1: Federal Supply Code for Manufacturers-Name to Code
H4-2: Federal Supply Code for Manufacturers-Code to Name
H4-3: Nato Supply Code for Manufacturers-Name to Code/Code to Name

Published by:

Defense Supply Agency
Defense Logistics Services Center
Federal Center Building
Battle Creek, Michigan 49016

VENDOR CODE	SPECIAL VENDOR CODE ASSIGNMENT
V96906	Parts having Military Part Numbers
VAAL	American Airlines Inc. Tulsa, Oklahoma
VAB	Coastal Mfg. Co. Santa Monica, California
VAC	Safety Industries Inc. Glen Ellyn, Illinois
VAD	Glarban Corp. Gordonville, N.Y.
VAE	Ucinite Co., The Los Angeles, California
VAF	Air France 1 Square Max Hymans 75, Paris 15, France
VAI	Industrial Products Co. Gardena, California
VAJ	Bozak Sales Co. Salisbury, Connecticut
VAO	Teddington Controls Ltd. Tydfil, South Wales
VARINC	Arinc
VARMED	Airmed Ltd. Edinburgh Way Harlow, Essex, England
VAZ	Murphy Radio Ltd. Welwyn Garden City Hertfordshire, England

INTRODUCTION

VENDOR CODE	SPECIAL VENDOR CODE ASSIGNMENT
continued...	
VBB	United Data Control Inc. Pasadena, California
VBC	Holmberg and Co. Ohlaur Strausse 5-11 Berlin, S036
VBD	John E. Lindberg Co. Berkely, California
VBF	The Firewall Co. Subsidiary of Aro Corpl Los Angeles, California
VBFE	Buyer Furnished Equipment
VBG	Societe Francaise D'Equipments (SFENA) Siege Social 25A 20 Rue Du Point Nevilly, Seine, France
VBH	Ackerman, Albert, Firma Akerman Albert, Gummersback/Rhld., Germany
VBJ	Smiths Aviation Division Cricklewood, London, England
VBJ	Standard Telephones and Cables Ltd. Connaught House, 63 Aldwich West Central 2, London, England
VBM	Associated Industries Seattle, Washington
VBO	H.K. Wilson Co. Bellevue, Washington
VBP	Brook Part Laboratories, Inc. Cleveland, Ohio
VBR	Amplivox Ltd., Industrial Div. Beresford, Av. Wembley, Middlesex, England
VBRZVA	Bronzavia-S.A. 207 Blvd. Saint-Denis 92 Courbevoie, France
VCELRD	Cosser Electronics Limited Radar Division The Pinnalces, Elizabeth Way Harlow, Essex, England
VDELTA	Delta Air Lines, Incorporated Harsfield-Atlanta International Airport Atlanta, Georgia 30320
VEIA	Electronic Industries Association

INTRODUCTION

VENDOR CODE	SPECIAL VENDOR CODE ASSIGNMENT
continued...	
VELNO	Elno 18 Rue Du Val Notre Dame 95 Argenteuil, France
VEPS	Electric Power Storage, Ltd. P.O. Box 5 Clifton Junction Swenton, Manchester England, M272LR
VFO241	Filotex 140 Rue Eugene-Delacroix 97210 Draveil France
VGRVNR	Graviner Inc. 1121 Bristol Rd Mountainside, N.J. 07092
VIMP	Inflight Motion Pictures, Inc. 23-06 31st Ave. Long Island City, New York 11106
VJAEGR	Jaeger 2 Rue Baudin Levallois-Perret 92 France

3. TERMINAL INFORMATION

The following index of "Term Type Codes" lists the code, a description of the code and, as applicable, the terminal stud size and/or part number. The code index is arranged in the following order:

- Single alphabetical letter
- Two character code with leading alphabetical letters
- Numbers
- Symbols

See Standard Wiring Practices (Chapter 20) for maintenance or repair information.

A. Single alphabetical letter

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
A	General Purpose Lug, Standard/Narrow, #2 Stud	BACT12AC43
B	General Purpose Lug, Standard, #4 Stud	BACT12AR( ) or 2-323914-2 (24 Gage)
C	General Purpose Lug, #6 Stud	BACT12AR( ) or BACT12AC( )
D	General Purpose Lug, #8 Stud	BACT12AR( ) or BACT12AC( )
E	General Purpose Lug, #10 Stud	BACT12AR( ) or BACT12AC( )
F	General Purpose Lug, 1/4 Stud	BACT12AR( ) or BACT12AC( )

INTRODUCTION

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
G	General Purpose Lug, 5/16 Stud	BACT12AR( ) or BACT12AC( )
H	General Purpose Lug, 3/8 Stud	BACT12AR( ) or BACT12AC( )
I	General Purpose Lug, Narrow #6 Stud	BACT12AR( )
J	High Temperature Lug, #2 Stud	BACT12M( )
K	High Temperature Lug, #4 Stud	BACT12M ( )
L	High Temperature Lug, #6 Stud	BACT12M ( )
M	High Temperature Lug, #8 Stud	BACT12M ( )
N	High Temperature Lug, #10 Stud	BACT12M ( )
O	General Purpose Lug, 1/2 Stud	BACT12AC( )
P	High Temperature Lug, 1/4 Stud	BACT12M ( )
Q	High Temperature Lug, 5/16 Stud	BACT12M ( )
R	High Temperature Lug, 3/8 Stud	BACT12M ( )
S	Splice, In-line;Install See Chapter 20	
V	Splice, Shielded;Install See Chapter 20	
W	Install Moisture Seal Splice (Closed End) See Chapter 20	
Y	End Cap & Stow After Test	
Z	Faston, 1/4 Stud	2-520184-4

B. Two character code with leading alphabetical letters

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
AB	White;Faston, 1/4 Stud	42640-2 & 1-480416-0
AC	Blue;Faston 1/4 Stud	42640-2 & 1-480416-3
AD	Red;Faston, 1/4 Stud	42640-2 & 1-480416-4
AG	Thermocouple Lug (Chromel) #6 Stud	AN5548-1
AH	Thermocouple Lug (Alumel) #6 Stud	AN5548-2
AW	General Purpose Lug, Thick Tounge, #10 Stud	150247
AY	60 Degree Lug, 3/8 Stud	324103
AZ	Miscellaneous Lug	YAES18-L85
BC	Splice, End Cap	328308
BD	High Temperature Splice (Parallel)	2-34318-1
BH	Terminal Block Contact	M39029/1-()-()
BJ	Terminal Block Contact for BACM153**	M39029/11-145
BK	Contact (Manufacturer)	60-1541-1

INTRODUCTION

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
BM	Copalum Lug, 1/4 Stud	277150-1
BN	Faston, .062 Stud	60900-1
BP	Parallel Splice, Install see Chapter 20	NAS1387-3
BS	Copalum Lug, Narrow, #10 Stud	277147-5
BT	Copalum Lug, 3/8 Stud	277147-2
BU	Copalum Lug, 1/4 Stud	277152-1 or 1-52521-2
BV	Faston, .110 Stud	3–520370–2 OR 640927–1
BX	Terminal, Faston	55319-1
BY	White;Faston, 1/4 Stud	61873-1 & 1-480416-0
CA	Coax Contact	48-1226-02
CK	Flag Lug, 1/4 Stud	YBM25-L1
CS	Stow with Protective Sleeving, See Chapter 20	
CT	Install, Prepare End, See Chapter 20, and Stow	M39029/1-102
CX	Faston, .205 Stud	640909-1
D2		YAV14H1 NO.8 STUD
DG	Terminal Block Contact	M39029/22-191
DN	Coax Contact	BACC47EU4
E*	Flag Lug, #10 Stud	BACT12G-81
E/	Copalum Lug, Narrow, #10 Stud	277154-1
E2	General Purpose Lug, #10 Stud	324111
E3		YAV14H NO.10 STUD
E6	Coax Contact	48-1227-02
E8	Copalum Lug, #10 Stud	277147-1
FA	Ferrule for Fiber Optics	454819-162
FB	Ferrule for Fiber Optics	454900-162
FD	Ferrule for Fiber Optics	454819-145
F4	Copalum Lug, 1/4 Stud	277149-2
F6	Copalum Lug, Narrow, 1/4 Stud	277148-7 or 277154-2
GD	Copalum Splice (08-10 AL/CU, 08-08 AL/AL)	277156-1
GJ	Copalum Splice (*2-*1 AL/CU, *2-*2 AL/AL)	277161-1
GS	Special Contact	1841-1-5620
GU	Copalum Splice (04-08 AL/CU,)	277164-1
GW	Nickle Lug, #10 Stud	321894, 322338 or 323750
GX	Install Copalum In-Line Splice	

INTRODUCTION

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
GY	Nickle Lug, 1/4 Stud	322320, 322341 or 323751
G3	Nicle Lug, #8 Stud	321893, 322337 or 323749
G5	General Purpose Lug, 5/16" Stud	324112
G7	Nickle Lug, #6 Stud	321892 or322332
HA	Flag Lug, 3/8 Stud	BACT12G-24
HC	Thermocouple Contact (Socket, Chromel)	MS39029/86-512
HD	Spectial Contact (Pin)	030-8400-500
HE	Special Contact	318-1616-253
HF	Thermocouple Contact (Socket,Alumel)	MS39029/86-511
HG	Crimp Sleeve	BACA14AB-164
HH	Coax Contact	349-0005-000
HL	Special Contact (Socket)	031-8014-800
H*	Copalum Lug, Long, 3/8 Stud	277152-4
H1	Copalum Lug, Long, 3/8 Stud	277151-2
H2	Copalum Lug, 3/8 Stud	277150-3
H3	Copalum Lug, 3/8 Stud	277153-1
H4	Copalum Lug, 3/8 Stud	277149-4
H6	Copalum Lug, 3/8 Stud	277148-4
H7	Flag Lug, 3/8 Stud	BACT12G-44
H8	Flag Lug, 3/8 Stud	BACT12G-102
IA	Dual Stud-hole, 3/8 Stud	YAV4C-2L38-NK
IX	Dual Stud-hole, Copalum H/T, 1/4 Stud	55836-1
JB	Install & Stow, See Chapter 20	BACC47CN1A (PIN)
J1	Coax Contact	BACC47EU3
KA	General Purpose Lug, Short Tounge, #8 Stud	BACT12AL-15 OR 331456
LD	Miscellaneous Lug, Hook Tounge, #8 Stud	32456
LF	Miscellaneous Lug, Hook Tounge, #8 Stud	320381
LR	90 Degree Lug, #10 Stud	BACT12E( )
LV	45 Degree Lug, 3/8 Stud	277069-1
LW	Removable Splice	BACT12A( )
RW	Moisture seal Splice, Closed-end	D436-60
TA	Thermocouple Contact (Socket, Alumel)	031-1041-009

INTRODUCTION

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
TC	Thermocouple Contact	ZZL-4020-10R (PIN, ALUMEL) OR ZZL-4120-10R (SKT, ALUMEL)
TD	Thermocouple Contact	ZZL-4020-10P (PIN,CHROMEL) OR ZZL-4120-10P (SKT, CHROMEL)
TE	Thermocouple Contact (Socket, Const)	ZZL-4112-10N
TF	Thermocouple Contact (Pin, Const.)	ZZL-4012-10N
TG	Thermocouple Contact (Socket,Chromel)	ZZL-4112-10P
TH	Thermocouple Contact (Socket, Alumel)	ZZL-4112-10R
TJ	Thermocouple Contact (Pin, Chromel)	ZZL-4012-10P
TK	Thermocouple Contact (Pin, Alumel)	ZZL-4012-10R
TL	Thermocouple Contact (Pin, Alumel)	030-1879-009
TM	Thermocouple Contact (Pin, Chromel)	030-1879-010
TU	Thermocouple Contact (Socket, Alumel)	031-1113-009
TV	Thermocouple Contact (Socket,Chromel)	031-1041-010
TW	Thermocouple Contact (Socket,Chromel)	031-1113-010
VA	Coax Contact	48-1227-54
VB	Coax Contact	48-1226-54
VC	Special Contact	66143-2LP
VG	Removable Splice (Blue) with BACC47CN2 Socket	48-7190 OR AIS16P
VJ	Special Contact	BACC47CP1T
VL	Moisture Proof Shielded Splice	
VM	Install Contact, Prepare End and Stow, See Chapter 20	BACC47EF1
VN	Shielded Contact	10-60479-44
VP	Install Contact and Stow, See Chapter 20	
VR	Removable Splice (Red) with BACC47CN2 Pin	48-7190-1 OR AIS16P-1
VS	Removable Splice (Red) With BACC47CP2T Socket	48-7191-1 or AIS16R-1
VT	Removable Splice (Blue) with 48-100-5021P Oversize Pin	48-7190 OR AIS16P
VU	Removable Splice (Blue) with 248-136-1614S-02 Oversize Socket	48-7191 OR AIS16R

INTRODUCTION

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
VV	Removable Splice (Red) with 48-10-5021-P Oversize Pin	48-7191 OR AIS16P-1
VW	Removable Splice (Red) with 248-136-1614S-02 Oversize Socket	48-7191-1 OR AIS16R-1
VX	Removable Splice	TSE-20-01 & 1841-1-5620 (PIN)
VY	Removable Splice (Blue) with BACC47CP2T Socket	48-7191 OR AIS16R
V1	High Temperature Splice (Moisture Seal and Shielded), Install See Chapter 20	D-150-0251
WI	Splice, Closed-end; Install See Chapter 20	
XQ	Miscellaneous Lug, Split Spade Toungue, #6 Stud	52420
XR	Amp, Spring Spade, #6 Stud	52409
ZA	Removable Splice (Red) and BACC47CN2(Pin). Stow with Plastic Cap, See Chapter 20	48-7190-1
ZB	Removable Splice (Red) and BACC47CO2T (Socket). Stow with Plastic Cap, See Chapter 20	48-7191-1
Z1	Faston, .110 Stud	2-520081-2
Z2	Faston, .058 Stud	60789-2

C. Numbers

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
1	Terminal Block Contact, blue/blue/blue stripe	S280W555-916
2	Terminal Block Contact	BACC47DE( )
4	90 degree lug, 1/4 stud	BACT12E( )
5	90 degree lug, 3/8 stud	BACT12E( )
8	Install Hi-temp splice (Moisture seal) see chapter 20	
9	Install Moisture seal splice, see chapter 20	
10	Oversize Contact #12	48-100-5020P-02 or P204540 (pin), 248-136-1210S-02 or P204541 (socket)
14	Oversize Contact #16	48-100-5021P-02 (pin), 248-136-1614S-02 or P208575-S (socket)

INTRODUCTION

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
16	Oversize Contact #20	48-100-5007P-02 or 48-100-5012P-02 (pin), 248-136-2016S-02 or 318-2016-035 (socket)
18	Oversize Contact #20	P209553 (pin), 248-136-2018S-02 or P209541 (socket)
1A	Terminal Block Contact, Red/Red/Red	S280W555-920
1C	Terminal Block Contact	M39029/1-103
1D	Terminal Block Contact, Red/White/Red	S280W555-918
1M	Socket	M39029/57–358
1N	Socket	M39029/57–359
20	Oversize Contact #22 (socket)	100-2020S
22	Oversize Contact #22M (socket)	MS27491-22D
4A	Thermocouple Contact (Pin, Alumel)	5000-070-116
4B	Thermocouple Contact (Socket, Alumel)	M39029/10-521
4C	Thermocouple Contact (Pin, Chromel)	5000-070-216
4D	Thermocouple Contact (Socket, Chromel)	M39029/10-522
4G	Thermocouple Contact (Pin, Alumel)	ZZL-4016-10R
4H	Thermocouple Contact (Socket, Alumel)	ZZL-4116-10R
4K	Thermocouple Contact (Pin, Chromel)	ZZL-4016-10P
4L	Thermocouple Contact (Socket, Chromel)	ZZL-4116-10P
4U	Thermocouple Contact Lug (Chromel) #8 stud	1-321897-0
4V	Thermocouple Contact Lug (Alumel) #10 stud	1-321898-0
5E	Coax Contact	BACC47EN1
5M	Coax Contact, D-sub	CQMEM-200()
5N	Coax Socket, D-sub	CQMEF-200
5P	Coax Contact, Right Angle	CMX010-P502
5Q	Coax Contact, Right Angle	CMX010-S502
62	Thermocouple Contact (Pin, Alumel)	030-1975-009
63	Thermocouple Contact (Pin, Chromel)	030-1975-010
69	Customer Installed Contact	
7O	Flag Lug, 1/4 stud	BACT12G-82
7T	Thermocouple Contact (Pin, Alumel)	030-1878-007
7U	Thermocouple Contact (Pin, Alumel)	030-1878-006

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
continued...		
98	Oversize Contact #22	66169-2

D. Symbols

TERM TYPE CODE	DESCRIPTION OF THE CODE	PART NUMBER
#	Install & Stow, see chapter 20	BACC47DE
$	Solder Connection: all size lugs	
*	indicated location	
%	Install & Stow, see chapter 20	M39029/11-145
%A	Install & Stow, see chapter 20	M39029/1-101
*	Install & Stow, see chapter 20 (#6 stud)	BACT12AR ( ) or BACT12AC( )
+	Install & Stow, see chapter 20 (#8 stud)	BACT12AR( ) or BACT12AC( )
-	Install & Stow, see chapter 20 (#4 stud)	BACT12AR( )
=	Install & Stow, see chapter 20 (#10 stud)	BACT12AR( ) or BACT12AC( )

4. WIRE SEPARATION CATEGORY CODES

The Wire Separation Category is a three character code. Each character position is defined as follows:

- Power Separation
- Redundancy Separation
- EMC Separation

Power Separation Values	Redundancy Separation Values	EMC Separation Values
N–Neutral Circuits	N–No redundancy required	1–Source of Interference Circuits & Equipment
L–Left Power Circuits-Left Engine	A–1st, left or system	2–Passive Circuits & Equipment
R–Right Power Circuits-Right Engine	B–2nd (or Right) Redundant System Circuit	3–Sensitive (Susceptible) Circuits & Equipment
C–Center Power Circuits	C–3rd (or Center) Redundant System Circuit	
A–APU Control and Electric Power Circuits	D–4th Redundant System Circuit	
H–Hydraulic Motor Driven Generator		
S–Standby Power Circuits. Circuits powered by Battery, Hot Battery, and AC Standby Bus		

INTRODUCTION

1. METHODS USED TO FIND INFORMATION

A. How To Locate A Diagram From A Wire Found In The Airplane

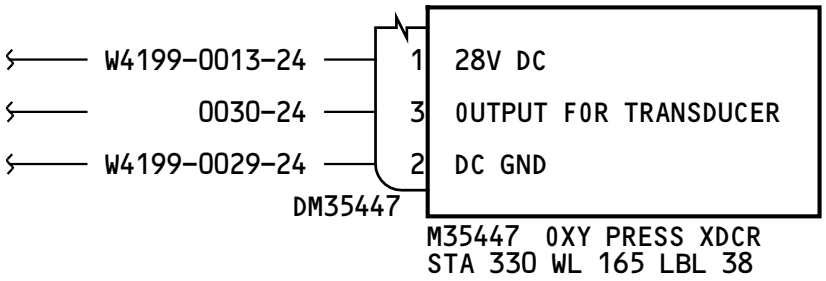
(a) As an example, take wire number W4199-0013-24.

(b) Knowing the wire bundle number W4199, refer to the Wire List in Chapter 91

(c) Using Self Indexing wire list shown, locate wire bundle W4199.

(d) Locate wire number 0013-24 and on the same line under the "Diagram" heading locate the diagram number 35-11-11.

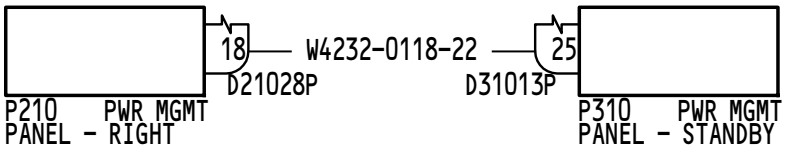
(e) Refer to Chapter 35 and locate the information needed on diagram 35-11-11.



B. How To Locate, In The Airplane, A Wire Found On A Wiring Diagram

(a) Wire number W4232-0118-22 appears on Wiring Diagram 28-21-11.

(b) Both ends of the wire are identified, disconnect D21028P at P210 panel and disconnect D31013P at P310 panel.



(c) Another method is to locate the bundle and wire number in the Wire List. The title of the bundle usually provides Station or Area for Airframe Bundles.

INTRODUCTION

C. How To Locate Spare Wires Within A Wire Bundle

(a) As an example, use wire bundle W487.

(b) Knowing the wire bundle, refer to the Wire List in Chapter 91.

(c) Using Self Indexing Wire List shown, locate wire bundle W487. In the "DIAGRAM' column you will find the wires that are spare wires are labeled "SPARE".

(d) On the same line as the wire number, both end terminations will be indicated for all spare wires. (Check applicable airplane effectivity under the effectivity column.) Ground, Terminal Strip, Splice, and Hook-Up Lists will also show spare wires.

(e) Spare wires are not shown on the wiring diagrams, only Airline Reserved Wires are shown, which are reserved for customer modifications.

(f) Wires that become spare through an engineering change are identified by "SPARE" and are not part of the Customer spares equipment. Their use should be on an individual airplane basis.

D. How To Locate Unused Pins In A Connector

(a) As an example use connector number DM31202A.

(b) Knowing the connector number, refer to the Hook-Up List located Chapter 91

(c) Using Self Indexing Hook-UP List shown, locate connector DM31202A.

(d) Pin numbers 4-9 in the example are unused pins.

E. How To Determine The Number Of Pins In A Connector

(a) To determine the number of pins in connector D01339J refer to the Equipment List.

(b) Using Self Indexing Equipment List shown, locate connector D01339J.

(c) To the right of D01339J the Part Number BACC45FN18-8P is shown. The number preceding "P" is 8 indicating there are a total of 8 pins in the connector.

(d) For example, the graphic in the preceding section 1.D, connector DM31202A has 12 pins 6 used and 6 unused. For Non BACC45 type connectors, the number of pins in a connector can be determined by referring to:

Vendor Catalog

The number of pins in a BACC45 and a Non BACC45 type connector can also be determined by referring to the Hook-Up List.

F. Electrical Wiring Assembly and Installation Process How To Identify Lower Case Lettered Pins

Lower case lettered pins in disconnects are identified as A-.

INTRODUCTION

G. How To Locate And Identify All Terminating Wires To A Terminal Strip

For a terminal module, the designator that represents all of the contact cavities in specific bus is the contact cavity with the lowest alphanumeric value. For example, if the bus indicator of the terminal module groups contact cavities A, B, and C, the item designator A is used to identify all three contact cavities.

(a) As an example use Terminal Strip TB4301, and wires W5103-0002-*1 and W8100-0023-*1.

(b) Knowing the terminal strip number TB4301, refer to Terminal Strip List in Chapter 91.

(c) Using Self Indexing Terminal Strip List shown, locate terminal TB4301 at STA, WL, BL.

(d) Locate the Wires terminating at Pins 2 as W5103-0002-*1 and W8100-0023-*1 and they are shown to be on diagram 24-21-11.

(e) Refer to the Equipment List for complete information regarding TB4301.

H. How To Find The Remaining Wires Passing Through A Connector That Are Not Shown On The Particular Diagram Being Used.

(a) As an example use connector DM31202A.

(b) Note the connector equipment number and find that equipment number in the Hook-Up Charts as shown.

(c) All wires in the connector are listed. The diagram for each wire is also shown.

I. How To Determine Splice Numbers Of Splices Found On The Airplane.

(a) Determine the wire number of any wire terminating at the splice in question. As an example use wire number W0022-A-A.

(b) Knowing the wire number, refer to the Wire List in Chapter 91-21-11.

(c) Using the Self Indexing Wire List shown below, locate wire number W0022-A-A. Under the "EQUIP" column note the splice number SP00211.

(d) The wiring diagram the splice is depicted on is listed under the "DIAGRAM" column. Refer to the Charts & Lists Section for more information.

J. How To Locate A Splice On The Airplane Which Is Shown On A Wiring Diagram

(a) There are several types of splices shown on wiring diagrams.

"SP" and "SPZ" splices connect wire from different wire bundles.
"SM" and "SMZ" splices connect wires of the same wire bundle.
"SPZ" and "SPZ" reflect customer assigned splice numbers.

(b) "SP" and "SPZ" splice location information is derived from the Splice List in Chapter 91. For example, use "SP25005" and locate it in the self indexing Splice List shown.

1) Read the station – "STA", water line – "WL", and buttock line – "LBL" or "RBL".

2) SP25005 is located at STA 1450, WL 300 and RBL 030. If more than one splice is at that location compare the airplane wire numbers to those listed in the Splice List to assure the correct splice has been found.

(c) "SM" and "SMZ" splice location information is determined by noting the wire number of a wire terminating at the splice in question.

1) Knowing the wire number W1071-2027R-22 locate it in the self indexing wire list shown.

2) The end points of W1071-2027R-22 are listed under the "EQUIP" column as SM00006 and DS31105. The length of the wire is given under "FT/IN" column.

3) Locate DS31105 in the Equipment List shown. Note the location of the equipment under "STATION-WL-BL" column. In this example the equipment is located in the P007 panel.

4) If the location of the P007 panel is not known refer to the Equipment List. Locate P007 in the Equipment List example shown.

5) Knowing P007 is at STA 0174, WL 250, LBL 000 go to the aircraft and locate it.

6) Locate DS31105 inside the P007 panel. Refer to the wire list example below and note the wire length between SM00006 and DS31105 is 2 ft. The wire length given in the wire list is the finished wire length when feet and inches are listed. If only feet are listed then the finished length can be +/- 18 inches.

7) Locate wire W1071-2027R-22 at DS31105 and trace it 2 ft +/- 6 inches and locate SM00006. Verify the wire leading away from splice is W1071-2027R-22.

K. How To Determine Part Numbers For Equipment Depicted On A Wiring Diagram

Electrical and electronic equipment shown on wiring diagrams are assigned alphanumeric designators. These designators are used as cross reference symbols to the Equipment List where the part numbers and part descriptions are shown. Splices, grounds, wire bundles and vendor controlled equipment numbers are not included in the Equipment List.

(a) Part Numbers For Special Contacts Used On Connectors

Special contacts for connectors are identified by a code in the Term Type (TT) column of the wire list. These codes and contact part number for each are listed in the Codes section.

(b) Part Numbers For Standard Contacts Used On Connectors

Standard contacts for connectors are not assigned term type codes. Part numbers are determined by locating the connector equipment number (i.e. D02516) in the Equipment List and its part number (i.e. BACS16W1). The connector part number and assembly are located in the Chapter 20 Standard Wiring Practices Manual, D6-54446. The contact number can then be determined by reviewing the connector assembly section.

(c) Part Numbers For Terminals

Part numbers for terminals depicted on wiring diagrams can be found in Chapter 20 Standard Wiring Practices Manual, D6-54446. The part numbers are based on the gage and type of wire.

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(d) Part Numbers For Contacts Used On Terminal Blocks

The terminal block module part number must be determined by locating it in the Equipment List. Once this is known, refer to the Cross Reference Index in Chapter 20 to locate the contact part number and installation information.

L. How To Determine The Location Of Equipment Listed In The Equipment List

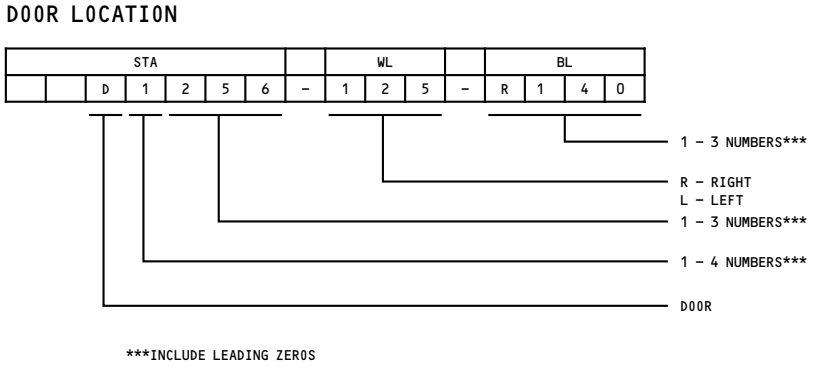
Each equipment location is defined by the following three dimensional coordinate system: Station Line, Water Line and Buttock Line.

The airplane is divided into six different areas, each with its unique set of coordinates: (1) Body, (2) Wing, (3) Wing Tip, (4) Stabilizer, (5) Fin and (6) Nacelle.

The coordinate interrelations are defined in Chapter 91.

(a) The format of characters as indicated below represent the possible alpha-numeric combinations which define the different area coordinates.

1) Door Location



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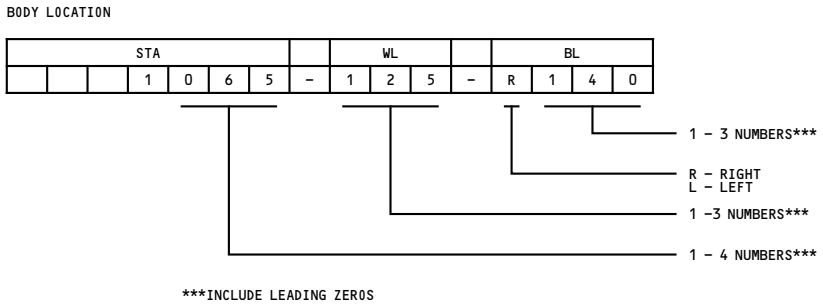
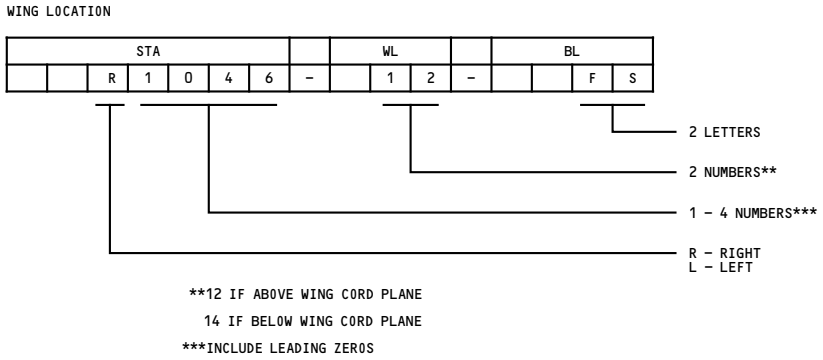
2) Body Location



3) Wing Location



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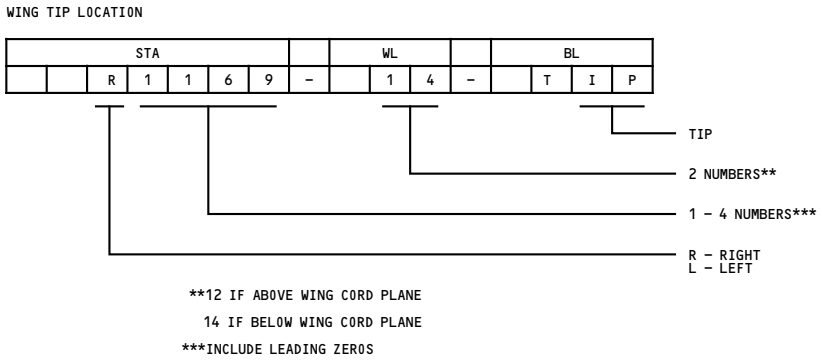
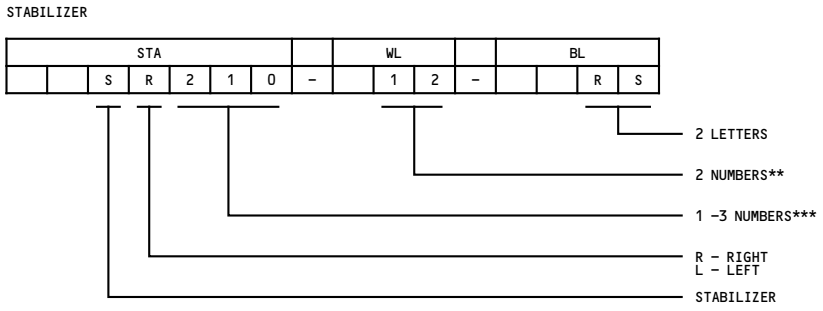
4) Wing Tip Location



**12 IF ABOVE WING CORD PLANE
14 IF BELOW WING CORD PLANE
***INCLUDE LEADING ZEROS

5) Stabilizer Location

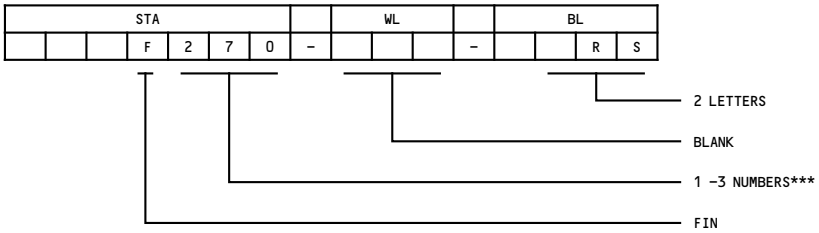


** 12 IF ABOVE WING CORD PLANE
14 IF BELOW WING CORD PLANE
***INCLUDE LEADING ZEROS

INTRODUCTION

6) Fin Location

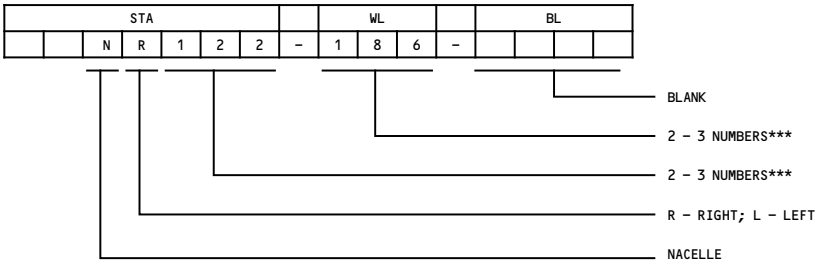
FIN LOCATION



***INCLUDE LEADING ZEROS

7) Nacelle Location

NACELLE LOCATION**



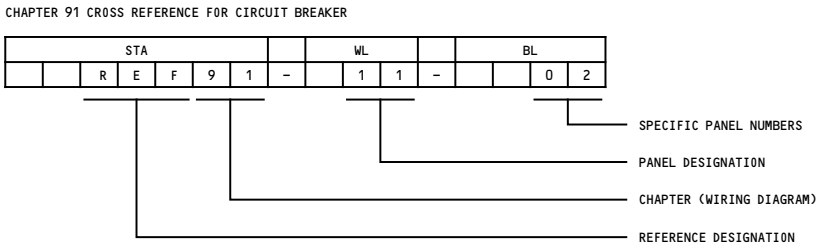
**NACELLE LOCATIONS INCLUDE BOTH ENGINE AND STRUT LOCATIONS

***INCLUDE LEADING ZEROS

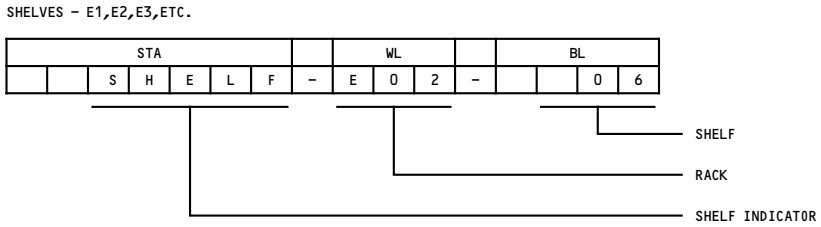
INTRODUCTION

(b) In addition to the aforementioned location definitions, the following special location definitions are necessary:

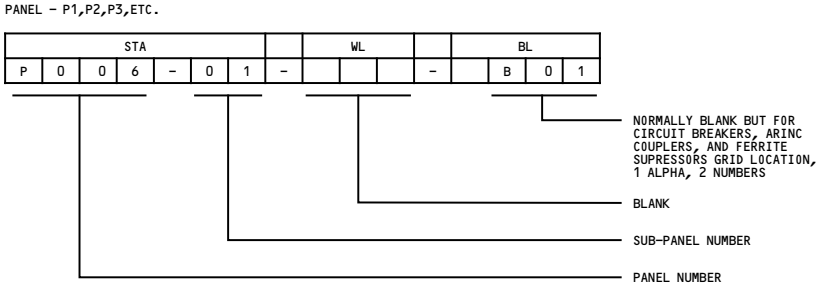
1) Chapter 91 Cross Reference For Circuit Breaker



2) Shelves -E1, E2, E3, etc.



3) Panels -P1, P2, P3, etc.



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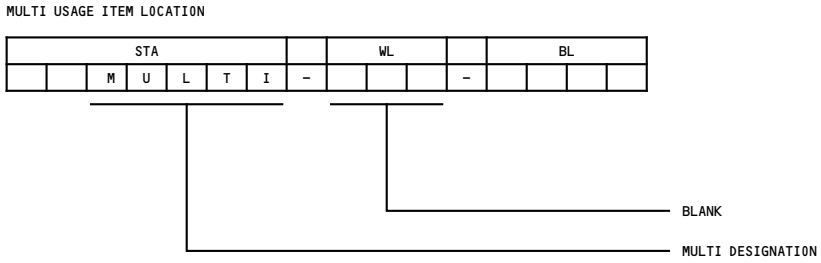
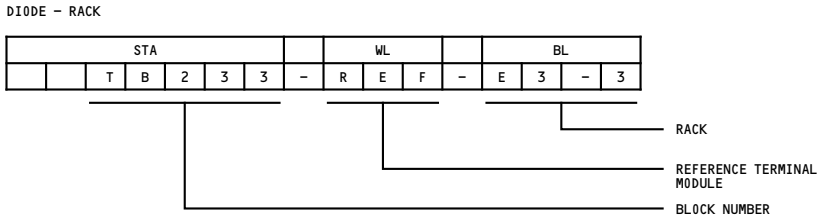
4) Multiple Location For Identical Units

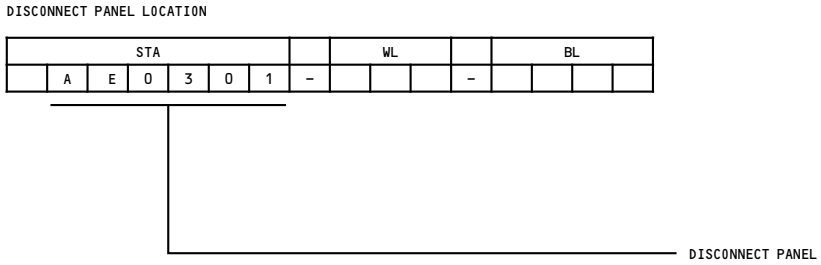
Nomenclature Of Item Denotes Location Usage



5) Diode-Rack



6) Disconnect Panel Location



INTRODUCTION

7) The following areas and their codes give forward and aft positioning on wings, stabilizers, and fins.

IDENTIFIED AREA	CODE
Leading Edge	LE
Front Spar	FS
Mid Spar	MS
Rear Spar	RS
Trailing Edge	TE
Extended Trailing Edge	ET
Plus	P
Minus	M

P or M define position, above or below respectively, of the wing or stabilizer chord plane.

2. METHODS USED TO ORDER A WIRE BUNDLE

A. How to Determine Wire Bundle (Harness) Information for Ordering a Wire Bundle

The Wire Bundle part numbers have been added to the Wire List for use when ordering a Wire Bundle form Boeing.

(a) Find the Wire Bundle (ie. W0041) of interest in the Wire List.

Find the Part Number of the Wire Bundle, the second entry of the header row of each Wire Bundle.

(b) Verify the Wire Bundle is applicable to the airplane of interest (Effectivity)

(c) Provide Boeing the Wire Bundle Part Number and the airplane's Boeing Variable Number when ordering.

INTRODUCTION

Chapter 20 consists of standard practices used to remove, repair and/or install wiring and equipment associated with wiring and its termination.

(This information is covered in D6-54446, the CHAPTER 20 STANDARD WIRING PRACTICES MANUAL.)