



# 737-800

## SYSTEM SCHEMATIC MANUAL

### AVIA CAPITAL SERVICES

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## 737-800 SYSTEM SCHEMATIC MANUAL

This manual is applicable to the aircraft on this list:

Model-Series	Operator		Manufacturer			Registration Number
	Identification Code	Effectivity Code	Block Number	Serial Number	Line Number	
737-8LJ	ARO	001	YT101	41195	4590	VP-BRF
737-8LJ	ARO	002	YT102	41196	4665	VP-BRH
737-8LJ	ARO	003	YT103	41197	4710	VP-BRR
737-8LJ	ARO	004	YT104	41198	4753	VP-BZA
737-8LJ	ARO	005	YT105	41199	4897	VP-BZB
737-8LJ	ARO	006	YT106	41200	5063	VP-BON
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737-8LJ	ARO	013	YT109	41207	5377	VQ-BWA
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737-8LJ	ARO	017	YT112	41211	5516	VQ-BWD
737-8LJ	ARO	018	YT113	41213	5652	VQ-BWE
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737-8LJ	STG	007	YT126	41201	5153	VQ-BVV
737-8LJ	STG	008	YT127	41202	5206	VQ-BVU

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737-8LJ	LCV	012	YT129	41206	5318	VQ-BWH
737-8LJ	LCV	014	YT130	41208	5437	VQ-BWI
737-8LJ	STG	019	YT131	41212	5576	VQ-BWJ

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## 737-800 SYSTEM SCHEMATIC MANUAL

AVIA CAPITAL SERVICES  
Revision No. 14

Jun 21/2016

To: All holders of this Boeing Document D280A451

Attached is the current revision to the 737 System Schematic Manual (SSM).

The manual is available either as a printed manual, digital products, or any combination of the two. This revision replaces all digital products. All 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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**TRANSMITTAL LETTER**

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Description of Change

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22-11-75

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**INTRODUCTION****1. APPLICABILITY**

This System Schematic 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**

This System Schematic Manual (SSM) is a collection of diagrams which define the airplane systems. These data are prepared essentially in accordance with 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 BOEING COMPANY HEREBY EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, ARISING BY LAW, COURSE OF DEALING, OR OTHERWISE, AND WITHOUT LIMITATION ALL WARRANTIES AS TO QUALITY, OPERATION, MERCHANTABILITY, FITNESS, FOR ANY INTENDED PURPOSE, AND ALL OTHER CHARACTERISTICS WHATSOEVER, OF CUSTOMER ORIGINATED MATERIAL INCORPORATED INTO THE MANUAL. THE FOREGOING DISCLAIMER SHALL ALSO APPLY TO ANY OTHER PORTION OF THIS MANUAL WHICH MAY BE AFFECTED OR COMPROMISED BY SUCH CUSTOMER ORIGINATED CHANGES."

Every effort has been made to ensure that the information presented on these schematics is complete and correct. However, in the event of conflict between this manual and Boeing Wiring Diagrams or other engineering drawings, the wiring diagrams or drawings shall be the controlling definition.

**A. Purpose of Introduction Section**

This Introduction Section is intended to provide the user with an overview of the SSM, an explanation of symbols used, and assumptions made while developing these schematics. Without an understanding of these symbols and assumptions, the user may not get the full value from the enclosed schematics.

**B. Purpose of System Schematic Manual**

The System Schematic Manual (SSM) was prepared to serve as a source of information to assist in understanding system function and to facilitate fault isolation to the Line Replaceable Unit (LRU) level. It is not intended for use as a substitute for other maintenance documentation (i.e., Fault Isolation Manual, Maintenance Manual, Wiring Diagram Manual). The SSM does not include information for testing. The procedures in the Fault Isolation Manual should be used for any fault isolation requiring testing. The procedures in the Maintenance Manual should be used to support removal and installation of components. The Wiring Diagram Manual (WDM) should be used as a reference to isolate faults in wiring and in-line disconnects.

The data contained in this manual are customized for each airline. Except for those features added by service bulletin or specifically requested by the airline, these data include coverage for only those features that are part of the airplane as delivered by Boeing.

**3. BOEING CHANGE DEFINITIONS**

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

**GENERAL INFORMATION**



**INTRODUCTION****A. Customer Originated Changes (COC)**

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

**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.

Incorporation status change of Service Bulletins can be requested using MyBoeingFleet (MBF). On MBF select "Maintenance Documents", "Document Change Requests", and then "Service Bulletin Incorporation" and fill out the SBI form. This form will be electronically submitted to Boeing for document changes.

**C. 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.

**4. 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.

**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.

**5. BOEING COMMERCIAL PUBLICATION CHANGE REQUEST (PCR)**

Communications concerning this manual should be directed to:

The Boeing Commercial Airplane Group  
Attention: Supervisor, Commercial Publications

**GENERAL INFORMATION**



### INTRODUCTION

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### GENERAL INFORMATION

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**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	Aircraft Communications Addressing and Reporting System
ACE	Actuator Control Electronics
ACCESS	Advanced 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
ARINC	Aeronautical Radio Incorporated
ASA	Autoflight Status Annunciator
ASCP	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

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BTMU	Brake Temperature Monitor Unit	COM/NAV	Communication/Navigation
C	Cold	COR	Corrector
CACTS	Cabin Air Conditioning & Temperature Control System	CP	Control Panel
CADS	Central Air Data System	CPCS	Cabin Pressure Control System
CALIB	Calibrator	CRKG	Cranking
CAP	Capture	CSB	Compressor Stability Bleed
CAP	Contact Authorized Proposal	CSMU	Cabin System Management Unit
CAPC	Cabin Area Control Panel	CT	Control Transformer
CAPT	Captain	CTC	Cabin Temperature Controller
CCA	Central Control Actuator	CTS	Cabin Temperature Selector
CCL	Cargo Control Logic	CTS	Conversational Terminal System
CCM	Cargo Control Module	CVR	Cockpit Voice Recorder
CCU	Cargo Control Unit	CWS	Control Wheel Steering
CDU	Control Display Unit	DAA	Digital/Analog Adapter
CFDS	Centralized Fault Detection System	DADC	Digital Air Data Computer
CFE	Customer Furnished Equipment	DAR	Digital Aids Recorder
CHKPT	Checkpoint	DED	Dead Ended Shield
CHSP	Course Heading Select Panel	DEL	Diagram Equipment List
CIC	Cabin Interphone Controller	DFCS	Digital Flight Control System
CIWS	Central Instrument Warning System	DFDAU	Digital Flight Data Acquisition Unit
CMC	Central Maintenance Computer	DFDR	Digital Flight Data Recorder
CMD	Command	DH	Decision Height
CMM	Component Maintenance Manual	DIU	Digital Interface Unit
CMS	Cabin Management System	DMU	Data Management Unit
COC*	Customer Originated Change	DP	Differential Protection
COF MKR	Coffee Maker	DPA	Digital Pre-Assembly
COLL	Collision	DPCT	Differential Protective Current Transformer

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DPLY	Deploy	EXTD	Extend
DSP	Display Select Panel	F/D	Flight Director
E/E	Electrical/Electronics	F/E	Flight Engineer
EADI	Electronic Attitude Director Indicator	F/F	Fuel Flow
ECS	Environmental Control System	F/O	First Officer
EDIU	Engine Data Interface Unit	FADEC	Full Authority Digital Engine Control
EDP	Engine Driven Pump	FAFC	Full Authority Fuel Control
EEC	Electronic Engine Control (Unit)	FAR	Federal Aviation Regulations
EFIS	Electronic Flight Instrument System	FBW	Fly-by-Wire
EHSI	Electronic Horizontal Situation Indicator	FCC	Flight Control Computer
EICAS	Engine Indicating and Crew Alerting System	FCU	Flap Control Unit
EIU	EFIS/EICAS Interface Unit	FDAU	Flight Data Acquisition Unit
ELCCR*	Electrical Liaison Change Commitment Record	FLMTR	Flowmeter
ELCU	Electrical Load Control Unit	FMC	Flight Management Computer
ELMS	Electrical Load Management System	FMCS	Flight Management Computer System
EMC	Electromagnetic Compatibility	FMU	Fuel Metering Unit
EMP	Electric Motor Pump (See also ACMP)	FMV	Fuel Metering Valve
ENTMT	Entertainment	FOC	Fuel/Oil Cooler
ENWY	Entryway	FQIS	Fuel Quantity Indication System
EPR	Engine Pressure Ratio	FQPU	Fuel Quantity Processor Unit
EPRL	Engine Pressure Ratio Limit	FSEU	Flap/Slat Electronics Unit
ESCC	Electrical Supply and Control Center	GCB	Generator Circuit Breaker
ESNTL	Essential	GCR	Generator Control Relay
ESS	Essential	GCU	Generator Control Unit
ETC	Electronic Temperature Control	GPWS	Ground Proximity Warning System
ETOPS	Extended Twin (Engine) Operations	GS	Glide Slope
EXCHR	Exchanger	GSB	Ground Service Bus

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GSPR	Gasper	LO	Lock Out
H	Hot	LP	Lightning Protector
HLCU	High Lift Control Unit	LPT	Low Pressure Turbine
HMU	Hydromechanical Unit	LRRA	Low Range Radio Altimeter
HND	Hand	LRU	Line Replaceable Unit
HPC	High Pressure Compressor (N2 Rotor)	LSDA	Low Speed Digital To Analog
HPSOV	High Pressure Shutoff Valve	M	Mach
HPT	High Pressure Turbine	M MUX	Main Multiplexer
HYDIM	Hydraulic Interface Module	MAI	Multiplexer Action Item
HYQUIM	Hydraulic Quantity Interface Module	MAWEA	Modularized Avionics and Warning Electronics Assembly
HZ	Hertz (Cycles Per Second)	MC*	Master Change
IBIT	Initiated Built In Test	MCDP	Maintenance Control and Display Panel
IBVSU	Instrument Bus Voltage Sense Unit	MCDU	Multipurpose Control and Display Unit
IDG	Integrated Drive Generator	MCP	Mode Control Panel
IDS	Integrated Display System	MD&T	Master Dim and Test
ILES	Inboard Leading Edge Station	MGSCU	Main Gear Steering Control Unit
INS	Inertial Navigation System	MHRS	Magnetic Heading Reference System
INTC	Interconnect	MHZ	Megahertz
IOEU	Inboard Overhead Electronics Unit	MIDU	Multipurpose Interactive Display Unit
IPC	Illustrated Parts Catalog	MKR BCN	Marker Beacon
IPL	Illustrated Parts List	MLS	Microwave Landing System
IRS	Inertial Reference System	MNFST	Manifest
JPR	Jumper	MOSFET	Metallic Oxide Semiconductor Field Effect Transistor
KHZ	Kilohertz	MR*	Modification Revision
KVA	Kilovolt Ampere	MTCHG	Matching
LGHTNG	Lightning	MTG	Muting
LMP	Lamp	NBR	Number

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ND	Navigation Display	POR	Point of Regulation
NGT	Night	PRCLR	Precooler
OAP	Output Audio Processor	PROT	Protection
OFCR	Officer	PRR*	Production Revision Record
OFL	Outflow	PRSOV	Pressure Regulating Shut-Off Valve
OMS	Onboard Maintenance System	PSA	Power Supply Assembly
OOEU	Outboard Overhead Electronics Unit	PSEU	Proximity Switch Electronics Unit
OPAS	Overhead Panel ARINC 629 System	PSU	Passenger Service Unit
OPBC	Overhead Panel Bus Controller	PTT	Press To Talk/Push To Talk
OVDR	Overdoor	PVD	Paravirtual Display
OVFL	Overfill	PYL	Pylon
OVHT	Overheat	QAM	Quadrature Amplitude Modulation Unit
OVWG	Overwing	QAR	Quick Access Recorder
PA	Passenger Address	QDT	Quadrantal
PA/CI	Passenger Address/Cabin Interphone	RAT	Ram Air Turbine
PCH	Patch	RDMI	Radio Distance Magnetic Indicator
PCT	Percent	RDP	Roller Drive Power
PDU	Power Drive Unit	RDU	Remote Display Unit
PES	Passenger Entertainment System	REP	Repellent
PFC	Primary Flight Computer	RFLNG	Refueling
PFD	Primary Flight Display	RGLTN	Regulation
PFIDS	Passenger Flight Information Display System	RMCP	Radio Management Control Panel
PIS	Passenger Information Sign	RR*	Rapid Revision
PKG	Parking	RST	Reset
PMA	Permanent Magnet Alternator	RSV	Reserve
PMG	Permanent Magnet Generator	RTC	Rudder Trim Control
PMS	Performance Management System	RVSG	Reversing

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RVT	Rotational Variable Transformer	TAI	Thermal Anti-Ice
SAARU	Standby Attitude/Air Data Reference Unit	TAT	Total Air Temperature
SAT	Static Air Temperature	TBV	Turbine Bypass Valve
SATCOM	Satellite Communications	TCA	Turbine Cooling Air
SB*	Service Bulletin	TCAS	Traffic Alert and Collision Avoidance System
SCF	System Cardfile	TCC	Turbine Case Cooling
SCM	Spoiler Control Module	TDL	Time Delay Logic
SCU	Seat Control Unit	TDO	Time Delay on Operate
SDI	Source Destination Identifier	TDX	Torque Differential Transmitter
SEB	Seat Electronics Box	TERM BLK	Terminal Block
SEB/ST	Seat Electronics Box With Self Test	TGT	Turbine Gas Temperature
SEI	Standby Engine Instruments	THSHD, THRSH	Threshold
SEU	Seat Electronics Unit	TL	Tilt
SHVR	Shaver	TLA	Thrust Lever Angle
SL*	Service Letter	TMC	Thrust Management Computer
SN	Sign	TMS	Thrust Management System
SO	Shut-off	TO	Turn-off
SO	Standard Option	TPIS	Tire Pressure Indication System
SPL	Splice List	TPMU	Tire Pressure Monitor Unit
SRM	Stabilizer Trim/Rudder Ratio Module	TR	Torque Receiver
SUP-NUM	Supernumerary	TR	Transformer Rectifier
SVU	Seat Video Unit	TRA	Thrust Resolver Angle
SWDL	Software Data Loader	TRC	Thermatic Rotor Control
SWL	Sidewall	TRU	Transformer Rectifier Unit
SWPM	Standard Wiring Practices Manual	TS	Terminal Strip
T/M	Torque Motor	TTG	Time To Go
T/R	Thrust Reverser	TURB	Turbulence

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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.

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## INTRODUCTION

### 1. LEVELS OF SCHEMATICS

Three levels of schematics may be drawn to represent the system functions:

Level 1	<b>BLOCK DIAGRAM:</b> Provides a broad overview of the system, or part of a system, showing major functions and components, functional groupings and pertinent interfaces.
Level 2	<b>SIMPLIFIED SCHEMATIC:</b> Provides a simplified view of the functions, components and interfaces. Broader in scope, showing more detail than level 1 schematics. Functions are shown without regard to their location in the aircraft or to pin-to-pin circuits.
Level 3	<b>SCHEMATIC:</b> Shows the system in sufficient depth for fault isolation to the LRU level. Provides a detailed view of the functions, components, pin-to-pin connectivity and interfaces. Provides a link between the function and the physical implementation. Provides the location reference for the components in the airplane.

### 2. CONTENT OF SCHEMATICS

The schematics show each system in a functionally integrated presentation that:

- Identifies and locates all LRU's and shows their functional internal circuitry in a simplified manner.
- Identifies connections between LRU's with cross reference to all interfacing system schematics.
- Provides signal flow for primary functions which require airplane wiring or observable indications.

The preferred schematic layout is power on the left and load on the right; signal source on the left, and signal destination/indication on the right. After satisfying proper left to right flow, the equipment is shown in relation to its position in the airplane, when possible. Left is forward, right is aft, top is right, bottom is left.

Unless otherwise noted, all schematics are shown with the airplane on the ground, after a normal flight, and with the post-flight checklist completed (power off). Instruments, indicators and monitors may reflect other conditions where clarity of presentation is improved.

Schematics may contain information relating to the nominal actuating pressure, temperature, or quantity values of certain devices, as well as dimensional relationships and operational notes. Such information is provided for reference only as an aid in systems understanding and is not intended for use to do rigging, calibration, adjustment, or functional testing. Refer to the Maintenance Manuals for this data.

#### A. Schematic Organization/Numbering System

ATA Specification 2200 assigns chapters to each major system (e.g., Hydraulics) of functional group of systems (e.g., Navigation). Each chapter is assigned a two-digit number (e.g., Hydraulics is Chapter 29 and Navigation is Chapter 34).

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Additionally, ATA Specification 2200 divides each chapter into sections. The section number is the third and fourth digits in the ATA number. Boeing assigns each subsystem the fourth digit in the ATA number. These same four-digit ATA numbers are used throughout the System Schematic Manual, Wiring Diagram Manual, Fault Isolation Manual, Maintenance Manuals, and Maintenance Training documents. The schematic numbers in the SSM are assigned following this four-digit ATA number assignment and with a two-digit suffix to make each schematic of that subsystem unique using a six-digit number. The schematics are further defined in the following manner: Schematic number (six-digit ATA number), Page number, and as required SCHEM number and/or Sheet number.

Complex subsystems may require more than one schematic sheet. In general, the subsystem shows the related functions on one schematic. Multiple schematics may also be used to show the function of the subsystem. "SCHEM" numbers may also be assigned to schematics depicting subfunctions of primary function.

Additionally, each schematic may require multiple sheets. Odd-numbered sheets are printed on the left side of the binding and even-numbered sheets on the right. This allows the schematic to be read across the binding edge.

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.

The airplane effectivity code, Customer or Boeing assigned, of each schematic is noted in a box in the lower left corner of the schematic. All sheets of a multiple-sheet schematic must have the same effectivity.

### **B. Equipment Numbers**

Equipment numbers (reference designators) are assigned to each airplane component with wiring attached, all Line Replaceable Units (LRU), panels and racks. Not all components with equipment numbers are LRU's and not all LRU's are assigned an equipment number. The equipment number uniquely identifies a component. However, if a component is part of an assembly, the equipment number will be the same for each use of the assembly in the airplane.

### **C. Equipment Description**

The Equipment Description used in the SSM and WDM consists of the component name, followed by a location modifier (e.g., VHF Radio-Left).

### **D. Depiction of Equipment on Schematics**

The schematic identifies which equipment is a Line Replaceable Unit (LRU) by the width of the box representing the equipment. Equipment that is not an LRU is identified with a solid thin line. The LRU is identified with the solid wide line if it is shown in the home ATA system. It is identified by a wide cross-hatched line if the circuit functions are duplicated in another interfacing ATA system. Provisional equipment not installed on an airplane at the time of delivery is identified by dash equipment boxes; however, the wiring has been installed to allow installation of the equipment at a later date.

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The schematic which shows the primary function of the LRU is the home for that LRU. If the LRU is not shown in its entirety on its home schematic, a continuation break (Z-break) is used to indicate that the LRU is shown incomplete. In this case, a reference to the "home schematic" is placed in the top center of the LRU box. LRU's with multiple primary functions shown in multiple systems are identified with Z-breaks. References are not included on the home schematic.

In the SSM, the following definition of a LRU has been used:

A Line Replaceable Unit is a unit which can be readily changed on an aircraft during Line Maintenance operations. Line Maintenance includes a routine check, inspection and malfunction correction performed en route and at base stations during transit, turnaround, or night stop.

Most LRU's do not contain line replaceable components. These "closed" LRU's generally do not show internal equipment item numbers, connectors and pin numbers. "Open" LRU's contain line replaceable components and components that are easily accessible. These line replaceable subcomponents are also depicted as LRU equipment items.

In selected instances, multiple equipment may share the same graphic box. Each equipment number, description and location are listed under the box. All connections go to identical interfaces on each box, except that the connector numbers will be unique for each box.

### E. Circuits and References

The lines between the equipment boxes on schematics show all pin-to-pin connections between the LRU's and do not show individual wire segments or indicate the complete wiring hookup. When possible, the complete circuit is shown on the home schematic. When the circuit can not be shown complete on the home schematic, a reference is made to indicate where the user will find the other portion(s). For all incomplete circuits, a branched wire off a common point is shown with an ATA reference to the schematic showing the other portions of the circuit. The referenced schematic will repeat at least one pin of the circuit and have a reference back to the home schematic to complete the circuit. Schematic references in wires/lines indicate the circuit may not be shown complete, but is shown on another system schematic and is duplicated on this schematic.

To improve clarity, some wires are grouped into a single wire with a brace at each end. The pins on each end correlate one for one at each end of the wire.

Circuits that cross the binding edge to an adjacent schematic sheet are drawn to line up at the edge of the schematic and are lettered. Mechanical lines that cross the binding edge are numbered.

To improve clarity, connections between points on a schematic which are remote from each other, may be shown with circles around them (bubbles). Bubbles may also be used to connect points from one schematic to another. Combining bubbles connects the circuit. The letters in the bubbles are unique for that schematic and all referenced schematics. Tubing and mechanical lines that are referenced using bubbles are numbered.

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### F. Connectors

The connector equipment number is shown for connectors mating to each LRU. This equipment number is placed just above the pin numbers and usually begins with the letter "D". If multiple connectors mate with the equipment, a letter suffix is added to correlate the connector to the LRU receptacle (e.g., A = J1, B = J2). If this correlation is not followed, the receptacle number is added in parentheses next to the connector number. ARINC 600 connector equipment item numbers are shown on schematics without a suffix letter. In the WDM Equipment List an ARINC 600 connector equipment item number is shown without a suffix letter followed by the same equipment item number with suffix letters. The first suffix letter indicates the section of the connector, e.g. A, B, C. The second letter indicates the kind of contact(s) in that section. See the WDM Equipment List for a description of contacts.

Where the connector numbers differ on each half of a disconnect, both numbers are shown separated by a / (slash).

Pin and socket lower case letter identifiers are indicated by an upper case letter followed by a minus sign (-), (e.g. F- = f). If there is no terminal number marked on the part, the pin number is assigned by Boeing and is prefaced with an = (equal), (e.g., =P for power, =G for ground). Coaxial contacts are identified with the contact number followed by a T (for Tip) or TR (for Tip Ring).

Where the access to the connector pin is very limited and the LRU is easily replaceable (i.e., a Line Replaceable circuit card in a card cabinet), the connector number and the pin numbers for the card interface are not shown.

In-line disconnects and pin numbers are shown on system schematics only if required for fault isolation (i.e., component pigtails are removed at the disconnect).

### G. Locations

The location of each Equipment Item is shown through the use of illustrations and/or in parentheses following the Equipment Description. This location may be a panel or rack number, a general word location based on airplane zone or door location, or three-point coordinates based on one of the airplane reference planes. Word locations or three-point coordinates may not be shown when an illustration is used to show location.

### H. Data Buses

A parallel line data bus symbol, with an arrow to indicate the direction of the data flow, represents the data bus connection between the LRU's. To depict connectivity, the pin numbers on each bus termination are listed in the same order (i.e., the top pin shown on an LRU physically connects to the top pin shown on every other connected LRU). The pin(s) are arranged in a logical order (i.e., the signal "high" is on top, the ARINC 429 "A" connections are on top, or the most significant to the least significant bit). Note that this logical order may sometimes result in pin numbers being out of numerical sequence. To improve clarity, data buses that are internal to the equipment are shown as single lines with an arrow.

### I. Airplane Illustrations

General airplane dimensions and locations are included in the 00 section of the SSM. These are intended to provide a general overview of the airplane along with location information for common equipment. Examples of the items found in this section are:

- Flight deck panel locations, including illustrations of the front of the panels.
- Equipment rack locations, including the location of the equipment on the rack.

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- Circuit breaker panel locations, including the location of the circuit breakers.

### J. Purpose of Illustrations on Schematics

Illustrations are included on many schematics to assist the user in locating and recognizing the component in the airplane. These illustrations are to be used in conjunction with the introductory illustrations. They are not intended to provide sufficient detail to allow component removal or installation information; these details are included in the Boeing Airplane Maintenance Manuals.

### K. Wire Diagram Reference Box

To assist the user in cross referencing to the appropriate wire diagram(s), a wire diagram reference box is placed in the upper-right corner on each schematic that depicts wiring connectivity. This box contains a listing of all of the wire diagrams that depict the circuits shown on that schematic. Circuits duplicated on this schematic are not listed in the reference box; they are listed on the home schematic for the circuit.

## 3. SYMBOLS

Symbols are used wherever possible to convey system function. The most commonly used symbols are shown on the Symbol pages in the General Chapter, 00-00-00.