CHAPTER 1 – AIRPLANE GENERAL

LIST OF ILLUSTRATIONS

1. ABBREVIATIONS

The following abbreviations may be used by flight compartment displays, radio tuning units and flight management system or be found throughout the manual. Some abbreviations may also appear in lower case letters. Abbreviations having very limited usage are explained in the systems chapters where they are used.

A

A/C	Air-Conditioning	ALT	Altitude, Altimeter
A/G	Air/Ground	ALT	Altitude Hold (PFD/FD)
A/ICE	Anti-ice	ALT CAP	Altitude Capture (PFD/FD)
A/P	Autopilot	ALT HOLD	Altitude Hold
A/S	Airspeed	ALTN	Alternate
A/SKID	Anti-skid	ALTS	Selected Altitude Arm/Abort (PFD/FD)
ABS	Absolute	AM	Amplitude Modulation
AC	Advisory Circular	AMB	Ambient
AC	Alternating Current	AMP	Amperes
ACARS	ARINC Communications Addressing and Reporting System	ANNUN	Annunciator
ACCEL	Acceleration, accelerate(d), accelerometers	ANT	Antenna
ACM	Air Cycle Machine	AOA	Angle of Attack
ACMP	Alternating Current Motor Pump/ Electric Hydraulic Pump	AP	Autopilot
ACT	Active	APC	Auxiliary Power Control
ACU	Air Conditioning Unit	APP	Approach
ADC	Air Data Computer	APPROX	Approximately
ADDR	Address	APR	Automatic Performance Reserve
ADF	Automatic Direction Finder	APU	Auxiliary Power Unit
ADF	Automatic Direction Finding	ARINC	Aeronautical Radio Incorporated
ADG	Air Driven Generator	ARP	Air Data Reference Panel
ADI	Attitude Director Indicator	ASYM	Asymmetrical
ADS	Air Data System	ATA	Air Transport Association
AFCS	Automatic Flight Control System	ATC	Air Traffic Control
AFT	Afterward	ATT	Attitude
AGL	Above Ground Level	ATTCS	Automatic Take-off Thrust Control System
AHC	Attitude Heading Computer	ATTD	Attitude
AHRS	Attitude Heading Reference System	ATTND	Attendant
AIL	Aileron	AUTO	Automatic
ALIGN	Aligning, alignment	AUTO BAL	Automatic Balance
ALPHA	alpha	AUTO XFER	Automatic Transfer
AUX	Auxiliary	AVAIL	Available
AV	Avionics	AZ	Azimuth

B

B/AIR	Bleed Air
B/C	Back Course
B/CRS	Back Course
B/LEAK	Bleed Leak
BARO	Barometric
BAT	Battery
BATT	Battery
BDI	Bearing Distance Indicator
BFO	Beat Frequency Oscillator
BITE	Built-In-Test Equipment
BK	Brake
BLD	Bleed
BOOM	Headset microphone
BRG	Bearing
BRKR(s)	Breaker(s)
BRT	Bright
BTL	Bottle
BTMS	Brake Temperature Monitoring System
BTMU	Brake Temperature Monitoring Unit
BYPS	Bypass

C

C	Center, Caution, Cabin
CAA	Civil Aviation Authority (UK)
CAL	Calibrate
CAP	Capture
CAPT	Captain
CAS	Calibrated Air Speed
CAT	Category
CAT	Clear Air Turbulence
CAT I, II, III	Category I, II, III
CB, C/B	Circuit Breaker
CBP	Circuit Breaker Panel
CCW	Counter Clockwise
CDL	Configuration Deviation List
CDP	Compressor Discharge Pressure
CDU	Control Display Unit
CFM	Cubic Feet Per Minute
CG	Center of Gravity
CH	Chapter, Channel
CHAN	Channel
CHGR	Charger
CHR	Chronograph
CHRT	Chart
CK	Check
CKPT	Cockpit
CKT	Circuit
CLB	Climb
CLK	Clock
Cm	Centimeters
CMD	Command
CMPS	Compass
CMPTR	Computer
CO_2	Carbon Dioxide
COM	Communication
COMM	Communication
COMP	Compressor, Comparator
COMPT	Compartment
COND	Condition, Continued
CONFIG	Configuration
CONN	Connection
CONT	Control, Continuous, Contactor, Controller
COOL	Cooling
CORR	Correction
CPAM	Cabin Pressure Acquisition Module
CPLT	Copilot
CRS	Course
CRT	Cathode Ray Tube
CRZ	Cruise
CSD	Constant Speed Drive
CTR	Center
CVR	Cockpit Voice Recorder
CW	Clockwise
CYL	Cylinder

D

DA	Drift Angle	DG	Directional Gyro
DBU	Data Base Unit	DH	Decision Height
DC	Direct Current	DIFF	Differential
DCP	Display Control Panel	DIM	Dimming
DCU	Data Concentrator Unit	DIR	Direct
DECEL	Decelerate(d)	DIS	Distance (to way point), Disconnect
DECR	Decrease	DISC	Disconnect
DEFL	Defuel	DISCH	Discharge
DEG	Degree	DISP	Dispatch, Display
DEPR	Depressurize	DIST	Distance
DEPT	Departure	DME	Distance Measuring Equipment
DEST	Destination	DN	Down
DET	Detector	DOT	Department of Transport (Canada)
DEV	Deviation	DR	Door
DFDAU	Digital Flight Data Acquisition Unit		
DFDR	Digital Flight Data Recorder		

E

EAS	Equivalent Airspeed	EMER(G)	Emergency
ECP	EICAS Control Panel	ENG	Engine
ECS	Environmental Control System	EPC	External Power Contactor
ECU	Electronic Control Unit	EQUIP	Equipment
ED	EICAS Display	ERP	Eye Reference Position Datum
EDP	Engine Driven Pump/Engine Primary Hydraulic Pump	ESS	Essential
EFIS	Electronic Flight Instrument System	ET	Elapsed Time
EGT	Exhaust Gas Temperature	ETA	Estimated Time of Arrival
EICAS	Engine Indication and Crew Alerting System	EVAC	Evacuation
EL	Elevation	EXH	Exhaust
ELEC	Electrical	EXTIN	Extinguish(ed)
ELEV	Elevator, Elevation		
ELT	Emergency Locator Transmitter		

F

F/CTL	Flight Controls
FAA	Federal Aviation Administration (USA)
FAIL	Failure
FCC	Flight Control Computer
FCU	Fuel Control Unit
FD, F/D ...	Flight Director
FDAU	Flight Data Acquisition Unit
FDR	Flight Data Recorder (Digital)
FECU	Flaps Electronic Control Unit
FEED	Feeder
FF, F/F	Fuel Flow
FIRE BTL .	Fire Bottle
FIREX	Fire Extinguisher
FL CH	Flight Level Change
FLD	Field
FLT	Flight
FLT DIR ...	Flight Director
FLUOR ...	Fluorescent
FLX	Flex thrust (Reduced take-off thrust)
FM	Fan Marker
FMS	Flight Management System
FPM	Feet Per Minute
FREQ	Frequency
FT	Feet, Foot
FW	Fire Wall
FWD	Forward

G

G (+/-)	Receiver Gain
G/S	Glide slope
GA	Go-around
GAL	Gallon
GALY	Galley
GCS	Ground Clutter Suppression
GCU	Generator Control Unit
GE	General Electric Aero Engines
GEN	Generator
GLD	Ground Lift Dumper (ing)
GMT	Greenwich Mean Time
GND	Ground
GPM	Gallons Per Minute
GPWS	Ground Proximity Warning System
GR	Gear
GRAV	Gravity
GS	Ground Speed
GUIDE	Guidance
GW	Gross Weight

H

HDG	Heading
HDG HOLD	Heading Hold
HDG SEL .	Heading Select
HEAT	Heater
HF	High Frequency (3 – 30 mHz)
Hg	Mercury
HGS	Head-up Guidance System
HI	High
HLDR	Holder
HOR, HORIZ	Horizontal
HOT	High Oil Temperature
HP	High Pressure
HP_A	Hecto Pascals
HSI	Horizontal Situation Indicator
HSTA	Horizontal Stabilizer Trim Actuator
HSTCU ...	Horizontal Stabilizer Trim Control Unit
HTR	Heater
HUD	Heads-up Display
HYD	Hydraulic
Hz	Hertz

I

I/B	Inboard	INCR	Increase
I/C	Intercom, Inspection Check	IND	Indication, Indicator
IAPS	Integrated Avionics Processor System	INFLT	In Flight
IAS	Indicated Air Speed	INHIB	Inhibit
ICAO	International Civil Aviation Organization	INOP	Inoperative
ICS	Idle Corrected Speed	INPH	Interphone
ID	Identification	INSP	Inspection
IDENT	Identification	INST(S)	Instrument(s)
IDG	Integrated Drive Generator	INST, INSTR	Instrument
IFR	Instrument Flight Rules	INT	Internal, Integral, Intersection
IGN	Ignition	INTEG	Integral
ILS	Instrument Landing System	IRS	Inertial Reference System
IM	ILS Inner Marker	IRU	Inertial Reference Unit
IMC	Instrument Meteorological Conditions	ISA	International Standard Atmosphere
IMP	Imperial	ISO	International Standard Organization
IN	Inch, Inches	ISOL	Isolation, Isolated
IN Hg	Inches of Mercury	ITT	Inter Turbine Temperature
INBD	Inboard		

J

JAA	Joint Airworthiness Authority

K

K, KT, KTS	Knots	KIAS	Knots Indicated Airspeed
kg(s)	Kilogram(s)	kW(s)	KiloWatt(s)
kHz	KiloHertz		

L

L	Left, Landing	LK	Leak
L/T	Landing/Taxi	LN	Left Nose
LAV	Lavatory	LNAV	Lateral Navigation
lb	Pound(s)	LOC	ILS Localizer
LB(s)	Pound(s)	LOGO	Logo Graphic
LCN	Load Classification Number	LOM, MM	Compass Locator at Outer Marker
LCV	Load Control Valve	LOP	Low Oil Pressure
LDA	Localizer-Type Directional Aid	LP	Low Pressure
LDG	Landing	LPM	Liter Per Minute
LDG GR	Landing Gear	LR	Left Rear
LDU	Lamp Driver Unit	LRC	Long Range Cruise
LE	Leading Edge	LSB	Lower Side Band
LG	Landing Gear	LT(s)	Light(s)
LGC	Landing Gear Controller	LW	Left Wing
LGW	Landing Gross Weight	LWD	Left Wing Down
LH	Left Hand	LWR	Lower
LIM	Limit		

M

M	Mach Number	MIC	Microphone
m	Meter	MID AFT	Middle Afterward
MAA	Maximum Authorized IFR Altitude	MID FWD	Middle Forward
MAC	Mean Aerodynamic Chord	MILS	.001 of an inch
MAG	Magnetic	MIN	Minimum
MAINT	Maintenance	MISC	Miscellaneous
MALF	Malfunction	MKR	Marker
MAN	Manual	MLG	Main Landing Gear
MAP	Ground Map (WXR)	MLS	Microwave Landing System
MAX	Maximum	MLW	Maximum Landing Weight
MAZ	MLS Azimuth	MM	ILS Middle Marker
MB	Millibars	MMEL	Master Minimum Equipment List
mbs	Millibars	MMO	Maximum Operating Speed in Mach Number
MCA	Minimum Crossing Altitude	MOCA	Minimum Obstruction Clearance Altitude
MCT	Maximum Continuous Thrust	MOD	Module
MDA	Minimum Descent Altitude	MON	Monitor
MEA	Minimum Enroute IFR Altitude	MPH	Miles Per Hour
MECH	Mechanic	MRA	Minimum Reception Altitude
MED	Medium	MSG	Message
MEL	Minimum Equipment List	MSL	Mean Sea Level
MFD	Multifunction Display	MTG	Miles to Go
MGP	MLS Glideslope	MTOW	Maximum Takeoff Weight
MHz	MegaHertz	MTW	Maximum Taxi Weight
MI	Miles	MZFW	Maximum Zero Fuel Weight

MISC

%	Percent	°C	Degrees Centigrade
&	and	°F	Degrees Fahrenheit

N

N/A	Not applicable	NLG	Nose Landing Gear
N1	Low Pressure Rotor	NM	Nautical Mile(s)
N2	High Pressure Rotor	No.	Number
NAV	Navigation	NOPT	No Procedure Turn Required
ND	Nose Down, Navigation Display	NORM	Normal
NDB (ADF)	Nondirectional Beacon (Automatic Direction Finder)	NOSE	Nose Wheel
NEG	Negative	NR	Nose Right
NEUT	Neutral	NTO	Normal Take-Off
NL	Nose Left	NU	Nose Up

O

OAT	Outside Air Temperature	OVBD	Overboard
OB/OUTBD	Outboard	OVHT, OH	Overheat
OBS	Observer	OVLD	Overload
OEI	One Engine Inoperative	OVSP	Overspeed
OEW	Operating Empty Weight	OVSPD	Overspeed
OH, OVHD	Overhead	OVTEMP	Over Temperature
OK	Okay	OXY, O_2	Oxygen
OM	ILS Outer Marker		

P

P#6	Panel 6	PRESS	Pressure, Pressurization
P/S	Pitot/Static	PRI	Primary
PA	Passenger Address	PRIM	Primary
PASS	Passenger	PROC	Procedure
PBE	Portable Breathing Equipment (Smoke Hood)	PROT	Protection
PCU	Power Control Unit	PROX	Proximity
PF	Pilot Flying	PSEU	Proximity Sensor Electronics Unit
PFD	Primary Flight Display	PSI	Pounds Per Square Inch
PLA	Power Lever Angle	PSIG	Pounds Per Square Inch Gauge
PLT(s)	Pilot(s)	PSS	Proximity Sensor System
PNF	Pilot Not Flying	PSU	Passenger Service Unit
PNLS(s)	Panel(s)	PT2	Engine Inlet Pressure
PO	Outside Air Pressure	PTCT	Protect
POS	Position	PTT	Push To Talk
PPH	Pounds Per Hour	PWR	Power

Q

QAR	Quick Access Recorder	QNH	Altimeter Setting
QEC	Quick Engine Change	QTY	Quantity
QFE	Local Station Pressure		

R

R	Right	RNAV	Area Navigation
RA	Radio Altitude	ROT	Rotation
RAI	Registro Aeronautico Italiano (Italy)	RPM	Revolutions Per Minute
RAT	Ram Air Turine	RT, R/T	Receiver-Transmitter
RCCB	Remote Controlled Circuit Breaker	RTE	Route
RCDR	Recorder	RTE DATA	Route Data
RCVR	Receiver	RTO	Rejected Takeoff
RDR	Radar	RTU	Radio Tuning Unit
REC	Receiver, Recorder	RUD	Rudder
RECOG	Recognition	RVR	Runway Visual Range
REF(s)	Reference(s)	RVSR	Reverser
REFL	Refuel	RW	Right Wing
REV	Reverse	RWD	Right Wing Down
RH	Right Hand	RWY	Runway
RMI	Radio Magnetic Indicator		

S

S	Status
SAT	Static Air Temperature
SCAV	Scavenge
SDF	Simplified Directional Facility
SEC	Second, Secondary
SECS	Spoiler Electronic Control System
SECU	Spoiler Electronic Control Unit
SEL	Select, Selector
SELCAL	Selective Call
SENS	Sensitivity, Sensor
SERV, SVCE	Service
SMKG	Smoking
SOV	Shutoff Valve
SP, SPD	Speed
SPC	Stall Protection Computer
SPKR	Speaker
SPLR(s)	Spoiler(s)
SQL	Squelch
SSB	Single Side Band
STA	Station
STAB	Stabilizer
STAT	Status
STBY	Standby
STEER	Steering
SUPPL	Supply
SW(s)	Switches
SYN	Synchronize
SYNC	Synchronous
SYS, SYST	System

T

T/C	Top of Climb
T/D	Top of Descent
T/R	Thrust Reverser
TACAN	UHF Tactical Air Navigation Aid
TAS	True Airspeed
TAT	Total Air Temperature
TCAS	Traffic Alert and Collision Avoidance System
TE	Trailing Edge
TEMP	Temperature
TGT	Target
TO, T/O	Takeoff
TOGA	Take-off / Go-around
TOL	Tolerance
TRB, TURB	Turbulence
TRK	Track
TRM	Trim
TRU	Transformer Rectifier Unit
TT2	Engine Inlet Temperature

U

UNSCHD	Unscheduled
USB	Upper Side Band
USG	United States Gallons
UTIL	Utility

V

V	Volt
V_A	Design Maneuvering Speed
V_B	Design Speed for Maximum Gust Intensity
V_C	Design Cruising Speed
V_D	Design Diving Speed
V_{DF}/M_{DF}	Demonstrated flight diving speed.
V_{EF}	Engine Failure Speed
V_F	Design Flap Speed
V_{FC}/M_{FC}	Maximum Speed for Stability Characteristics
V_{FE}	Maximum Flap Extended Speed
V_{LE}	Maximum Landing Gear Extended Speed
V_{LO}	Maximum Landing Gear Operating Speed
V_{LOF}	Lift-off Speed
V_{MC}	Minimum Control Speed with the Critical Engine Inoperative
V_{MO}/M_{MO}	Maximum Operating Limit Speed
V_{MU}	Minimum Unstick Speed
V_R	Rotation Speed
V_S	Stalling Speed or the Minimum Steady Flight Speed at which the Airplane is Controllable
V_{S0}	Stalling Speed or the Minimum Steady Flight Speed in the Landing Configuration
V_{S1}	Stalling Speed or the Minimum Steady Flight Speed Obtained in a Specific Configuration
V_1	Takeoff Decision Speed (formerly Denoted as Critical Engine Failure Speed)
V_2	Takeoff Safety Speed
$V_{2\ MIN}$	Minimum Takeoff Safety Speed
V/S	Vertical Speed
VERT	Vertical
VFR	Visual Flight Rules
VG	Vertical Gyro
VHF	Very High Frequency (30 – 300 mHz)
VIB	Vibration
VMC	Visual Meteorological Conditions
VNAV	Vertical Navigation
VOL	Volume
VOLT	Voltage
VOR	VHF Omnidirectional Range Station
VORTAC ..	VOR and TACAN Co-located
VSI	Vertical Speed Indicator

W

W	Warning
W/C	Wind Component
W/S	Wind Shear
W/W	Wheel Well
WARN	Warning
WF	Runway Length Limited Weight
WGT	Weight
WHLS	Wheels
WIND	Window
WOW	Weight-On-Wheel
WPT(s) ...	Waypoint(s)
WRN	Warning
WS	Second Segment Limited Weight
WSHLD ...	Windshield
WX	Weather
WXR	Weather Radar

X

X . . . . . Cross Transfer
XFER, XFR Transfer
XFLOW . . . Cross Flow
XMIT . . . . . Transmit
XPNDR . . . Transponder
XTK . . . . . Cross Track
XWC . . . . . Cross Wind Component

Y

YD, Y/D . . . Yaw Damper

Z

ZFW . . . . . Zero Fuel Weight

ATMOSPHERE TABLE						
ALTITUDE		PRESSURE			TEMPERATURE	
Feet	Meters	Hg	Mb	PSIA	˚F	˚C
0	0	29.92	1013.2	14.70	59	15
1000	328.08	28.86	977.2	14.17	55.4	13
2000	656.16	27.82	942.1	13.66	51.8	11
3000	984.24	26.82	908.1	13.17	48.3	9.1
4000	1312.32	25.84	875.1	12.69	44.8	7.1
5000	1640.40	24.90	843.0	12.23	41.2	5.1
6000	1972.48	23.98	812.0	11.78	37.6	3.1
7000	2296.56	23.09	781.9	11.34	34.0	1.1
8000	2624.64	22.23	752.6	10.92	30.5	–.9
9000	2952.72	21.39	724.3	10.51	26.9	–2.8
10,000	3280.80	20.58	696.8	10.11	23.3	–4.8
15,000	4921.20	16.89	571.8	8.29	5.5	–14.7
20,000	6561.60	13.75	465.6	6.75	–12.3	–24.6
25,000	8202.0	11.10	376.0	5.45	–30.1	–34.5
30,000	9842.4	8.90	300.9	4.36	–47.9	–44.4
35,000	11,482.8	7.04	238.4	3.46	–65.7	–54.3
40,000	13,152.0	5.54	187.5	2.72	–69.7	–56.5

NOTE

The above table is presented for guidance purposes only. For more information, refer to the ICAO Standard Atmosphere Tables.

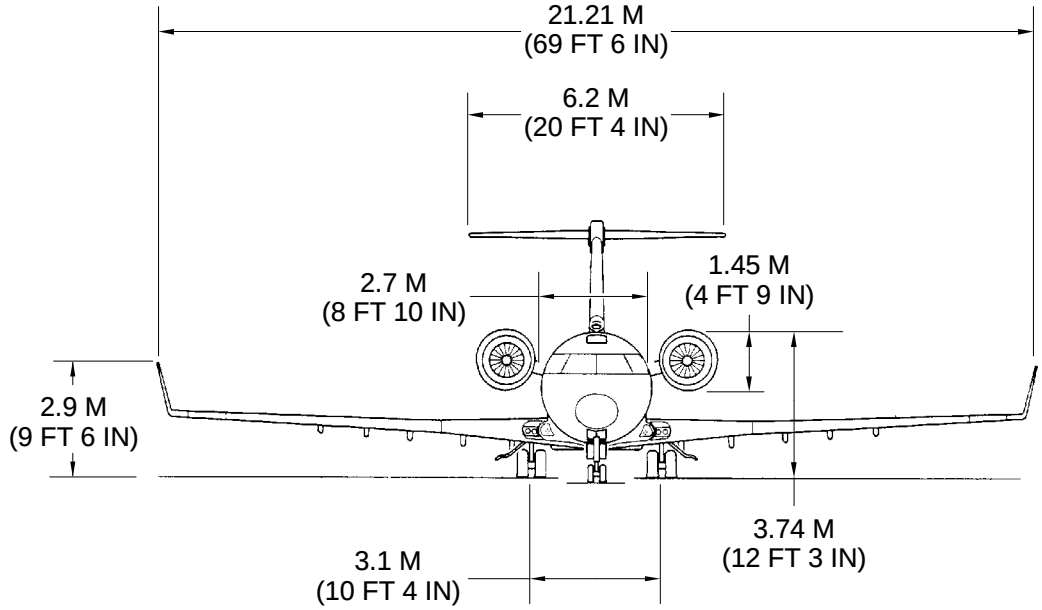
Atmosphere Table
Figure 01–10–1

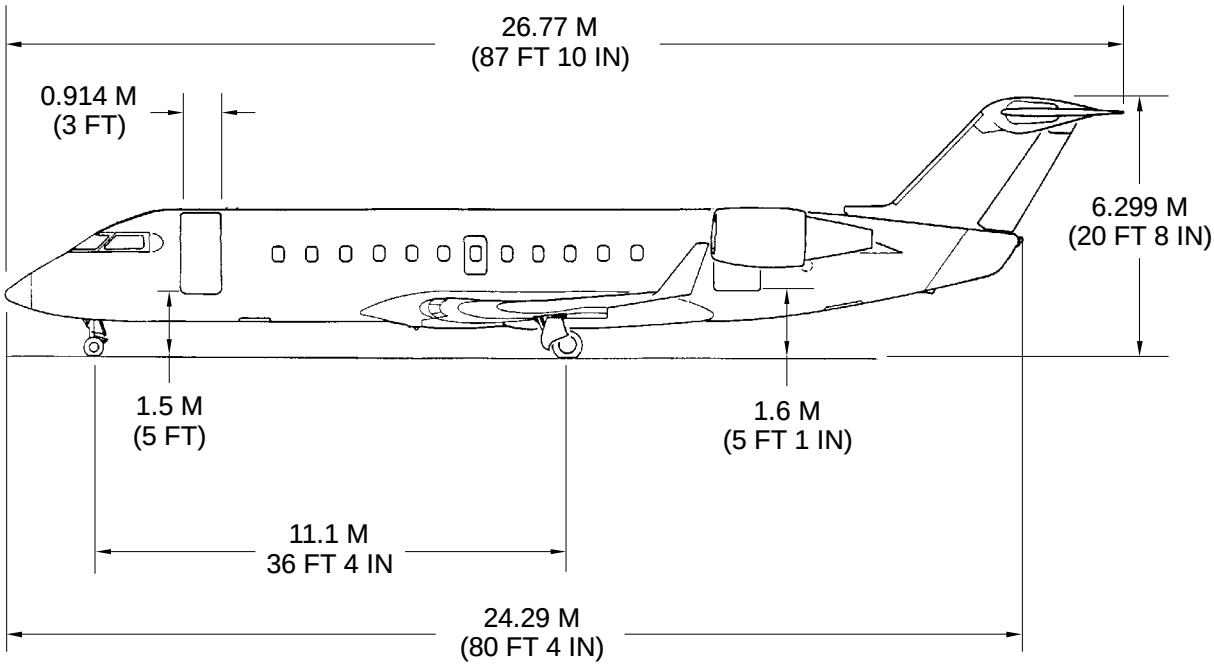
2. CONVERSION FACTORS

Multiply	By	To Obtain	Multiply	By	To Obtain
Centimeters	0.3937	in	Km/hr	0.54 0.6214	knots mph
Centimeters^2	0.155	in^2	Knots	1.151 1.852	mph km/hr
Centimeters^3	0.061	in^3	kPa	0.145	psi
Ft	0.3048	meters	Liters	0.2642 0.22	USG Imperial gal
Ft^2	0.0929	meters^2	Meters	3.281	ft
Ft^3	0.0283	meters^3	Meters^2	10.76	ft^2
Gal, Imperial	1.201 4.546	USG liters	Meters^3	35.3115	ft^3
Gal, US	3.785 0.8327	liters Imperial gal	Miles	5280 1.609 0.869	ft km nautical miles
In	2.54	cm	Mph	1.609 0.869	km/hr knots
In^2	6.452	cm^2	Nautical Miles	1.151 1.852	miles m
In^3	16.387	cm^3	Pounds (lb)	0.45	kilograms
Kilograms	2.205	lb	PSI	6.895	kPa
Kilometers	0.6214 0.54	miles nautical miles			

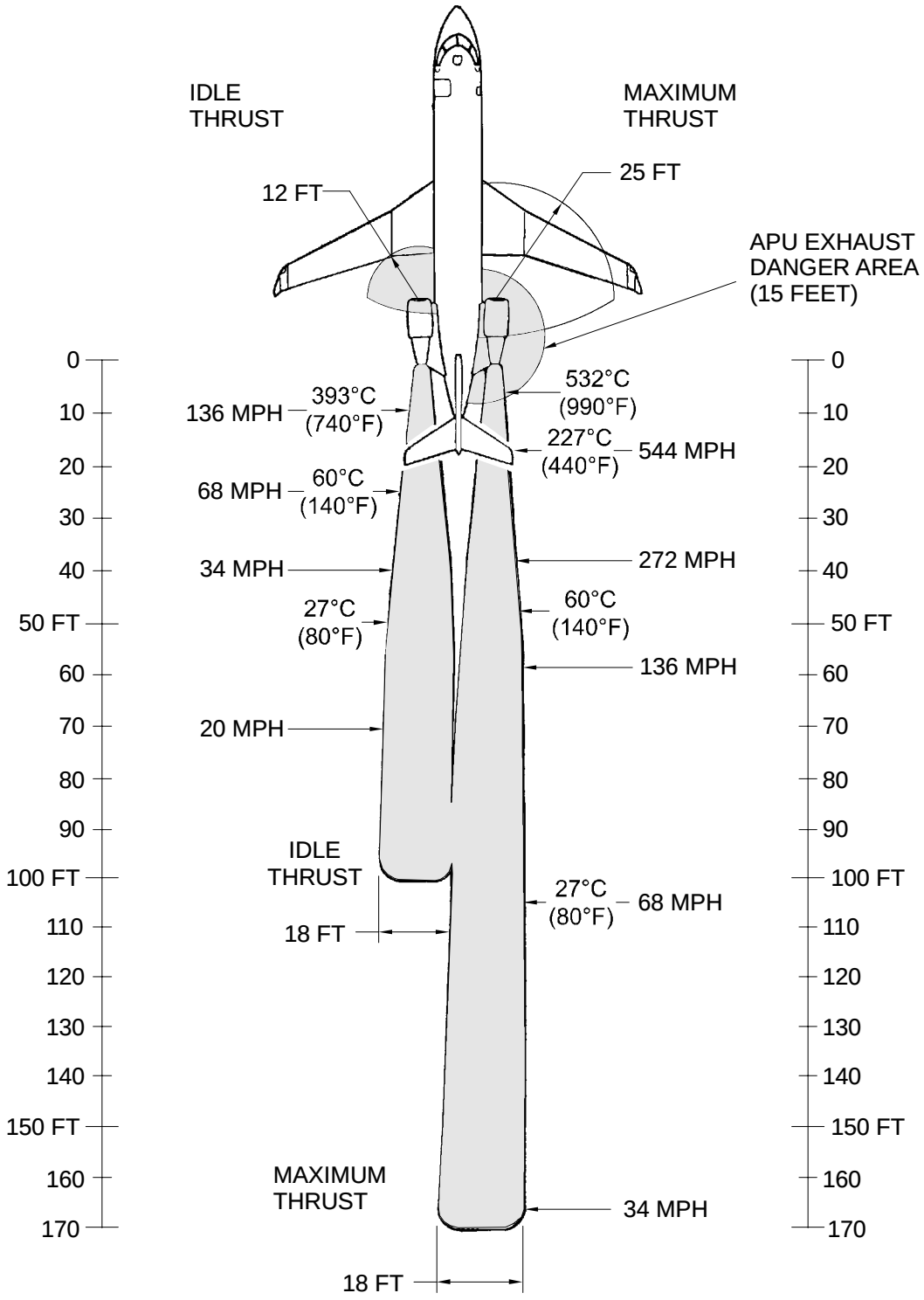
3. TEMPERATURE CONVERSION TABLE

°C ↓	°F ↔	°C ↑	°F	°C ↓	°F ↔	°C ↑	°F	°C ↓	°F ↔	°C ↑	°F	°C ↓	°F ↔	°C ↑	°F	°C ↓	°F ↔	°C ↑	°F
-73.3	-100	-148.0		-45.6	-50	-58.0		-17.8	0	32.0		10.0	50	122.0		37.8	100	212.0		65.6	150	302.0	
-72.8	-99	-146.2		-45.0	-49	-56.2		-17.2	1	33.8		10.6	51	123.8		38.3	101	213.8		66.1	151	303.8	
-72.2	-98	-144.4		-44.4	-48	-54.4		-16.7	2	35.6		11.1	52	125.6		38.9	102	215.6		66.7	152	305.6	
-71.7	-97	-142.6		-43.9	-47	-52.6		-16.1	3	37.4		11.7	53	127.4		39.4	103	217.4		67.2	153	307.4	
-71.1	-96	-140.8		-43.3	-46	-50.8		-15.6	4	39.2		12.2	54	129.2		40.0	104	219.2		67.8	154	309.2	
-70.6	-95	-139.0		-42.8	-45	-49.0		-15.0	5	41.0		12.8	55	131.0		40.6	105	221.0		68.3	155	311.0	
-70.0	-94	-137.2		-42.2	-44	-47.2		-14.4	6	42.8		13.3	56	132.8		41.1	106	222.8		68.9	156	312.8	
-69.4	-93	-135.4		-41.7	-43	-45.4		-13.9	7	44.6		13.9	57	134.6		41.7	107	224.6		69.4	157	314.6	
-68.9	-92	-133.6		-41.1	-42	-43.6		-13.3	8	46.4		14.4	58	136.4		42.2	108	226.4		70.0	158	316.4	
-68.3	-91	-131.8		-40.6	-41	-41.8		-12.8	9	48.2		15.0	59	138.2		42.8	109	228.2		70.6	159	318.2	
-67.8	-90	-130.0		-40.0	-40	-40.0		-12.2	10	50.0		15.6	60	140.0		43.3	110	230.0		71.1	160	320.0	
-67.2	-89	-128.2		-39.4	-39	-38.2		-11.7	11	51.8		16.1	61	141.8		43.9	111	231.8		71.7	161	321.8	
-66.7	-88	-126.4		-38.9	-38	-36.4		-11.1	12	53.6		16.7	62	143.6		44.4	112	233.6		72.2	162	323.6	
-66.1	-87	-124.6		-38.3	-38	-34.6		-10.6	13	55.4		17.2	63	145.4		45.0	113	235.4		72.8	163	325.4	
-65.6	-86	-122.8		-37.8	-36	-32.8		-10.0	14	57.2		17.8	64	147.2		45.6	114	237.2		73.3	164	327.2	
-65.0	-85	-121.0		-37.2	-35	-31.0		-9.4	15	59.0		18.3	65	149.0		46.1	115	239.0		73.9	165	329.0	
-64.4	-84	-119.2		-36.7	-34	-29.0		-8.9	16	60.8		18.9	66	150.8		46.7	116	240.8		74.4	166	330.8	
-63.9	-83	-117.4		-36.1	-33	-27.4		-8.3	17	62.6		19.4	67	152.6		47.2	117	242.6		75.0	167	332.6	
-63.3	-82	-115.6		-35.6	-32	-25.6		-7.8	18	64.4		20.0	68	154.4		47.8	118	244.4		75.6	168	334.4	
-62.8	-81	-113.8		-35.0	-31	-23.8		-7.2	19	66.2		20.6	69	156.2		48.3	119	246.2		76.1	169	336.2	
-62.2	-80	-112.0		-34.4	-30	-22.0		-6.7	20	68.0		21.1	70	158.0		48.9	120	248.0		76.1	170	338.0	
-61.7	-79	-110.2		-33.9	-29	-20.2		-6.1	21	69.8		21.7	71	159.8		49.4	121	249.8		77.2	171	339.8	
-61.1	-78	-108.4		-33.3	-28	-18.4		-5.6	22	71.6		22.2	72	161.6		50.0	122	251.6		77.8	172	341.6	
-60.6	-77	-106.6		-32.8	-27	-16.6		-5.0	23	73.4		22.8	73	163.4		50.6	123	253.4		78.3	173	343.4	
-60.0	-76	-104.8		-32.2	-26	-14.8		-4.4	24	75.2		23.3	74	165.2		51.1	124	255.2		78.9	174	345.2	
-59.4	-75	-103.0		-31.7	-25	-13.0		-3.9	25	77.0		23.9	75	167.0		51.7	125	257.0		79.4	175	347.0	
-58.9	-74	-101.2		-31.1	-24	-11.2		-3.3	26	78.8		24.4	76	168.8		52.2	126	258.8		80.0	176	348.8	
-58.3	-73	-99.4		-30.6	-23	-9.4		-2.8	27	80.6		25.0	77	170.6		52.8	127	260.6		80.6	177	350.6	
-57.8	-72	-97.6		-30.0	-22	-7.6		-2.2	28	82.4		25.6	78	172.4		53.3	128	262.4		81.1	178	352.4	
-57.2	-71	-95.8		-29.4	-21	-5.8		-1.7	29	84.2		26.1	79	174.2		53.9	129	264.2		81.7	179	354.2	
-56.7	-70	-90.0		-28.9	-20	-4.0		-1.1	30	86.0		26.7	80	176.0		54.4	130	266.0		82.2	180	356.0	
-56.1	-69	-92.2		-28.3	-19	-2.2		-0.6	31	87.8		27.2	81	177.8		55.0	131	267.8		82.8	181	357.8	
-55.6	-68	-90.4		-27.8	-18	-0.4		0.0	32	89.6		27.8	82	179.6		55.6	132	269.6		83.3	182	359.6	
-55.0	-67	-88.6		-27.2	-17	1.4		0.6	33	91.4		28.3	83	181.4		56.1	133	271.4		83.9	183	361.4	
-54.4	-66	-86.8		-26.7	-16	3.2		1.1	34	93.2		28.9	84	183.2		56.7	134	273.2		84.4	184	363.2	
-53.9	-65	-85.0		-26.1	-15	5.0		1.7	35	95.0		29.4	85	185.0		57.2	135	275.0		85.0	185	365.0	
-53.3	-64	-83.2		-25.6	-14	6.8		2.2	36	96.8		30.0	86	186.8		57.8	136	276.8		85.6	186	366.8	
-52.8	-63	-81.4		-25.0	-13	8.6		2.8	37	98.6		30.6	87	188.6		58.3	137	278.6		86.1	187	368.6	
-52.2	-62	-79.6		-24.4	-12	10.4		3.3	38	100.4		31.1	88	190.4		58.9	138	280.4		86.7	188	370.4	
-51.7	-61	-77.8		-23.9	-11	12.2		3.9	39	102.2		31.7	89	192.2		59.4	139	282.2		87.2	189	372.2	
-51.1	-60	-76.0		-23.3	-10	14.0		4.4	40	104.0		32.2	90	194.0		60.0	140	284.0		87.8	190	374.0	
-50.6	-59	-74.2		-22.8	-9	15.8		5.0	41	105.8		32.8	91	195.8		60.6	141	285.8		88.3	191	375.8	
-50.0	-58	-72.4		-22.2	-8	17.6		5.6	42	107.6		33.3	92	197.6		61.1	142	287.6		88.9	192	377.6	
-49.4	-57	-70.6		-21.7	-7	19.4		6.1	43	109.4		33.9	93	199.4		61.7	143	289.4		89.4	193	379.4	
-48.9	-56	-68.8		-21.1	-6	21.2		6.7	44	111.2		34.4	94	201.2		62.2	144	291.2		90.0	194	381.2	
-48.3	-55	-67.0		-20.6	-5	23.0		7.2	45	113.0		35.0	95	203.0		72.8	145	293.0		90.6	195	383.0	
-47.8	-54	-65.2		-20.0	-4	24.8		7.8	46	114.8		35.6	96	204.8		63.3	146	294.8		91.1	196	384.8	
-47.2	-53	-63.4		-19.4	-3	26.6		8.3	47	116.6		36.1	97	206.6		63.9	147	296.6		91.7	197	386.6	
-46.7	-52	-61.6		-18.9	-2	28.4		8.9	48	118.4		36.7	98	208.4		64.4	148	298.4		92.2	198	388.4	
-46.1	-51	-59.8		-18.3	-1	30.2		9.4	49	120.2		37.2	99	210.2		65.0	149	300.2		92.8	199	390.2	

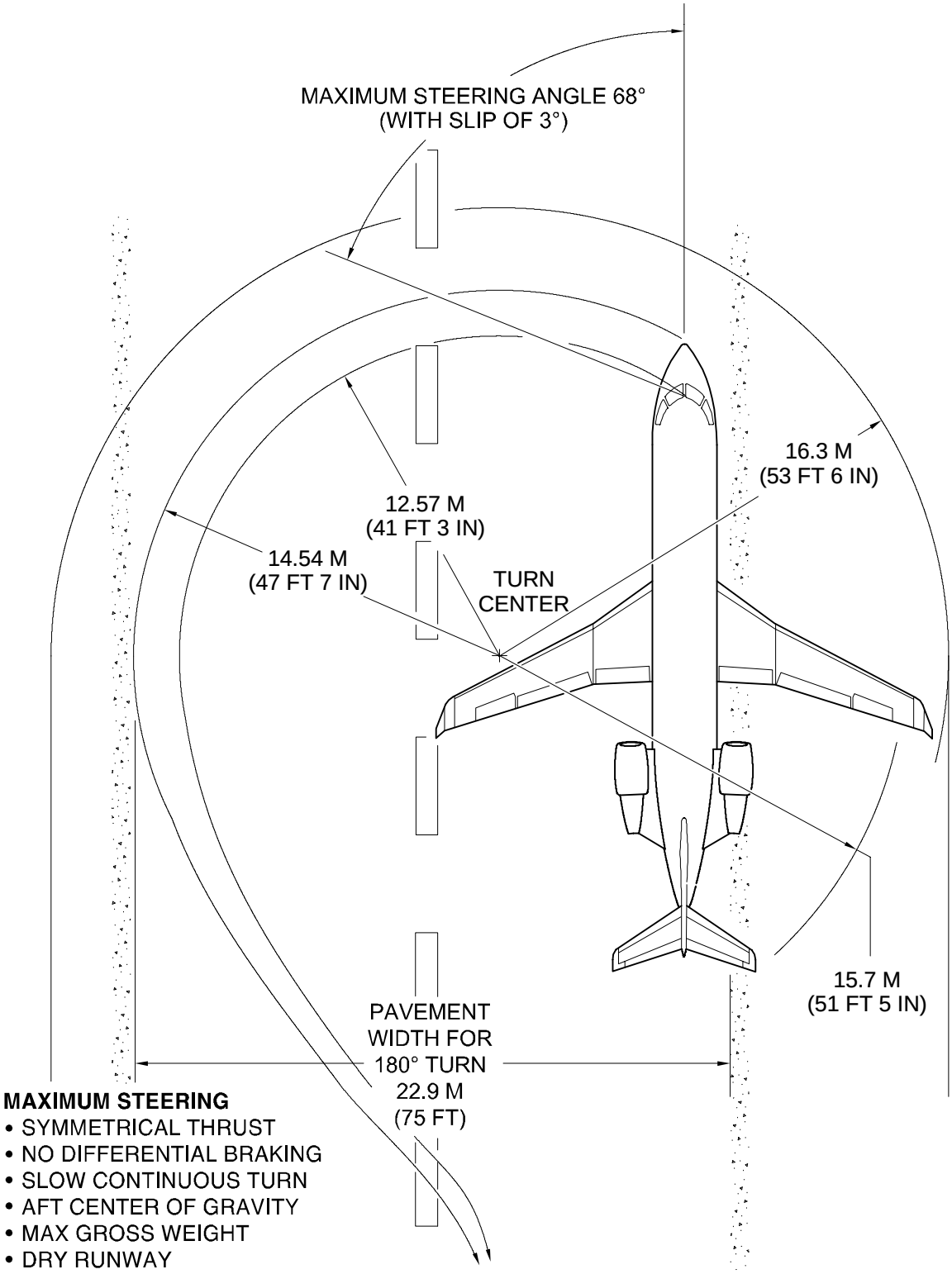




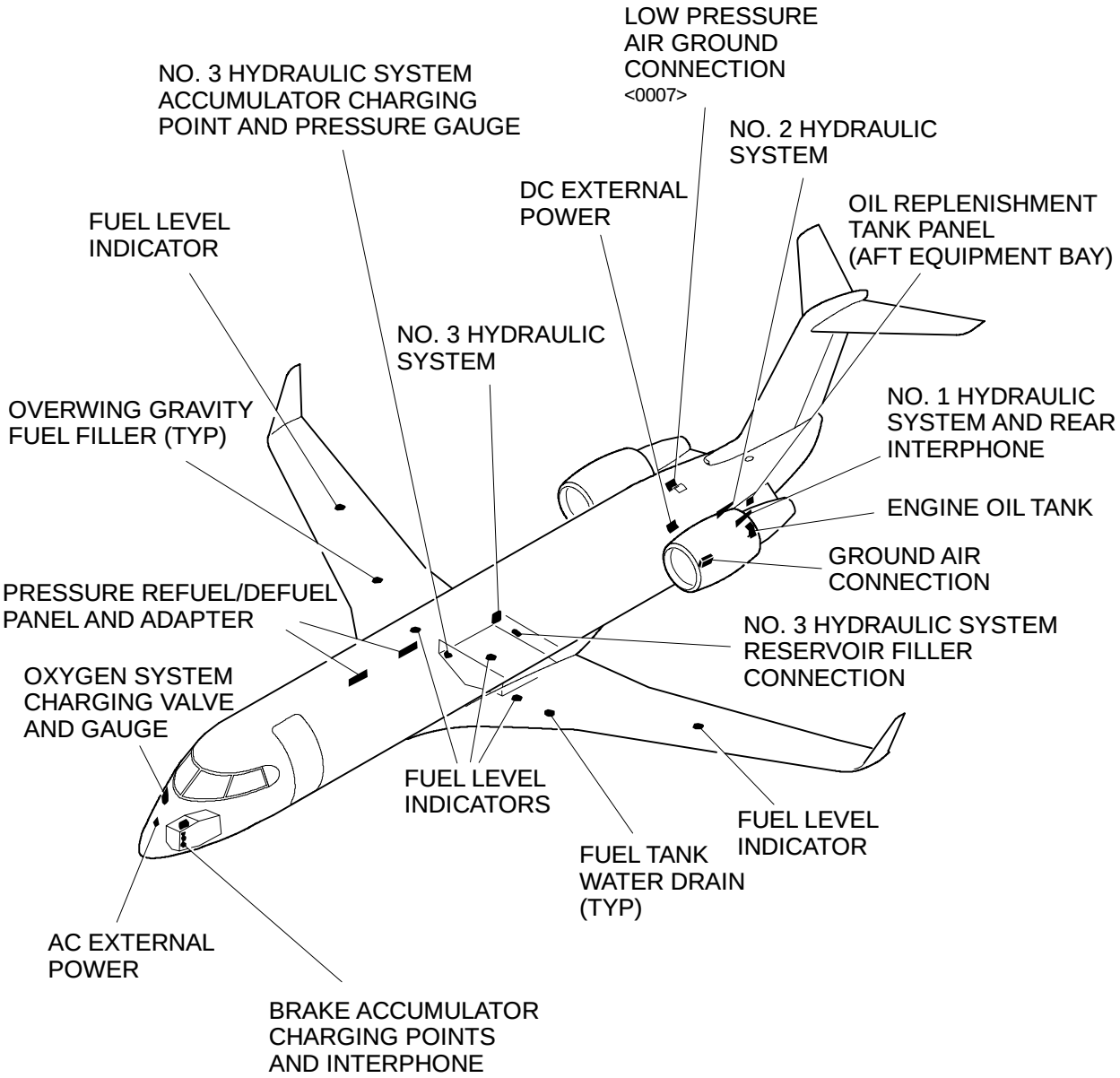
External Airplane Dimensions
Figure 01–20–1



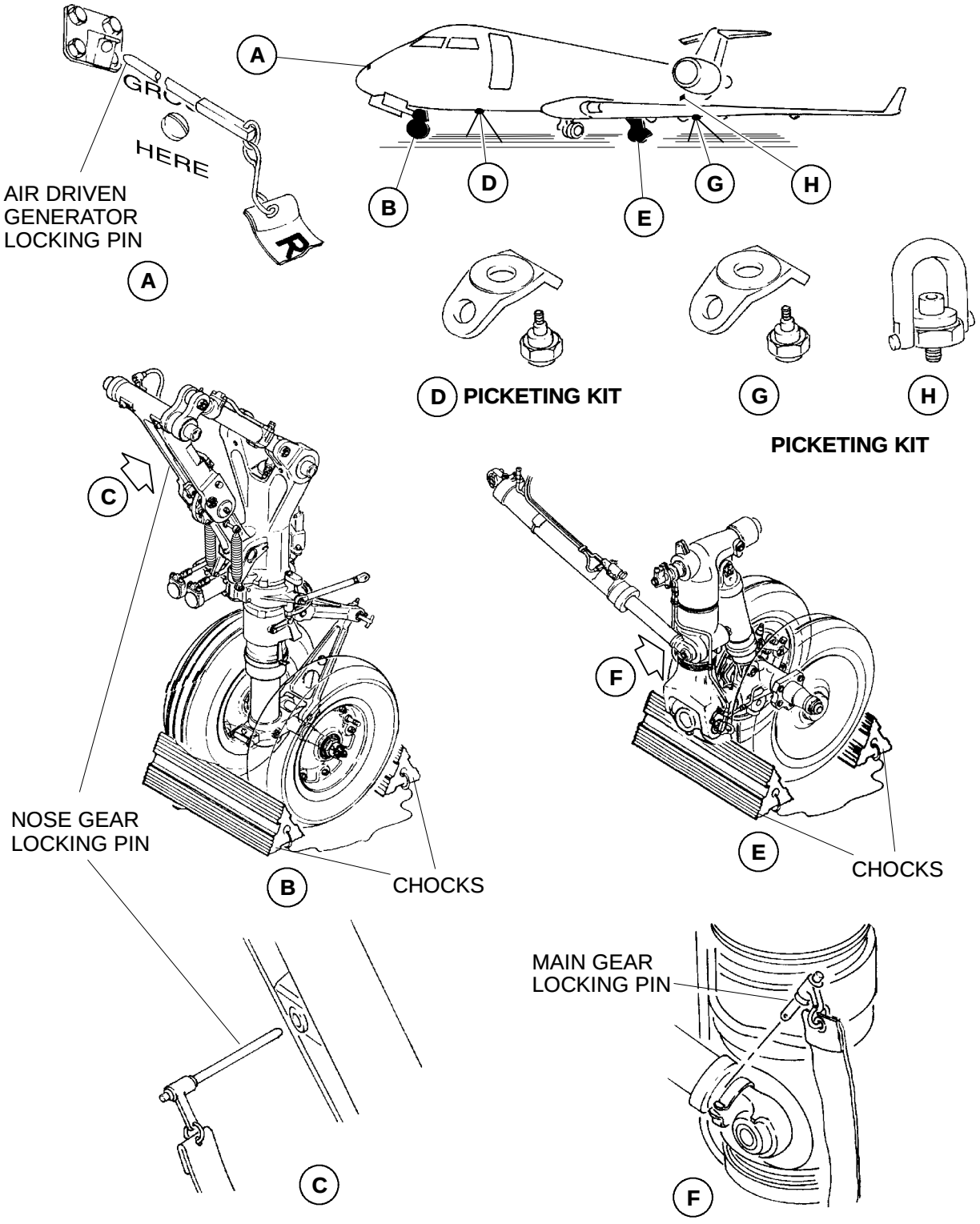
Engine Hazard Areas
Figure 01–20–2



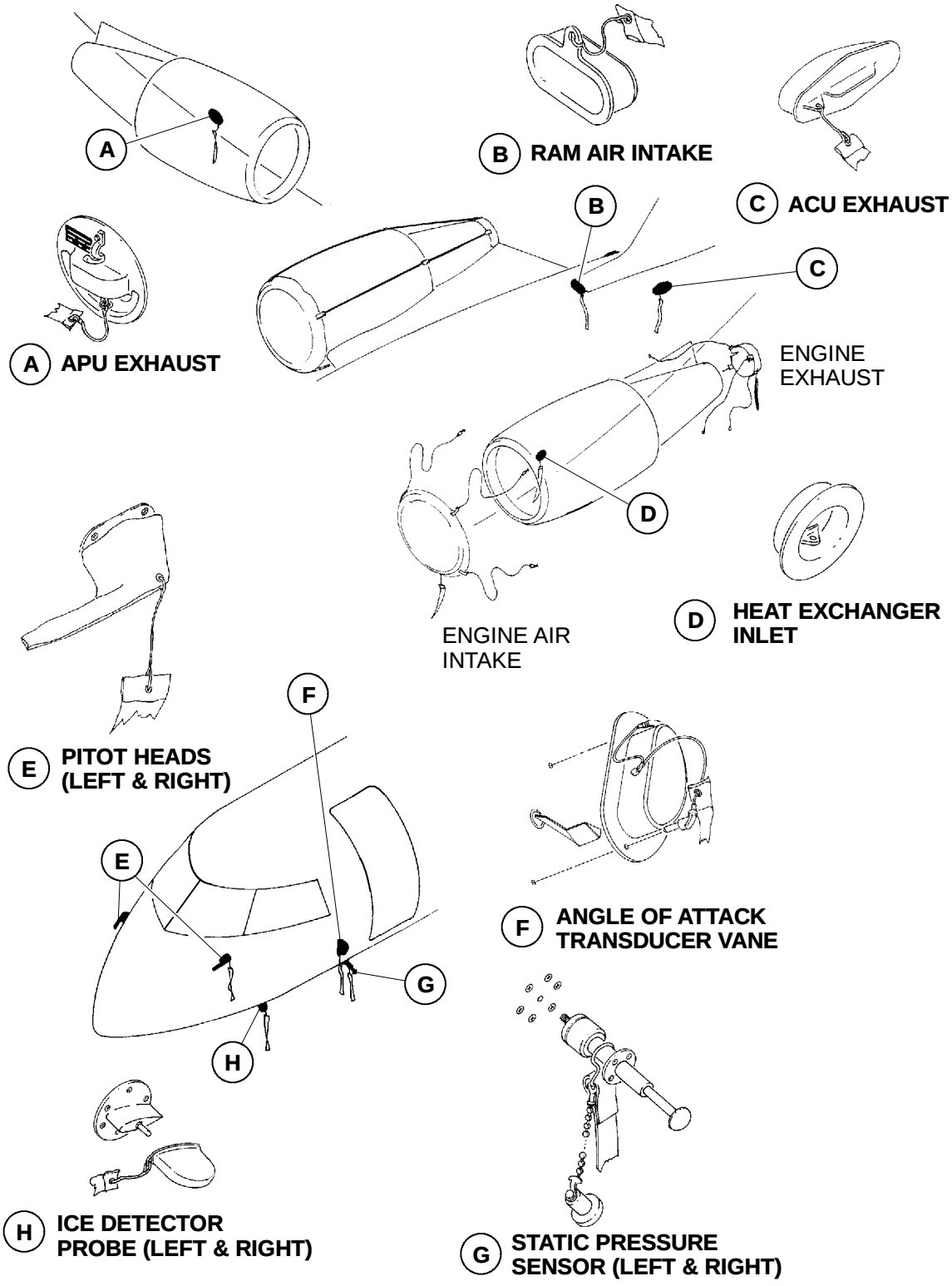
Taxiing and Turning Radii
Figure 01–20–3



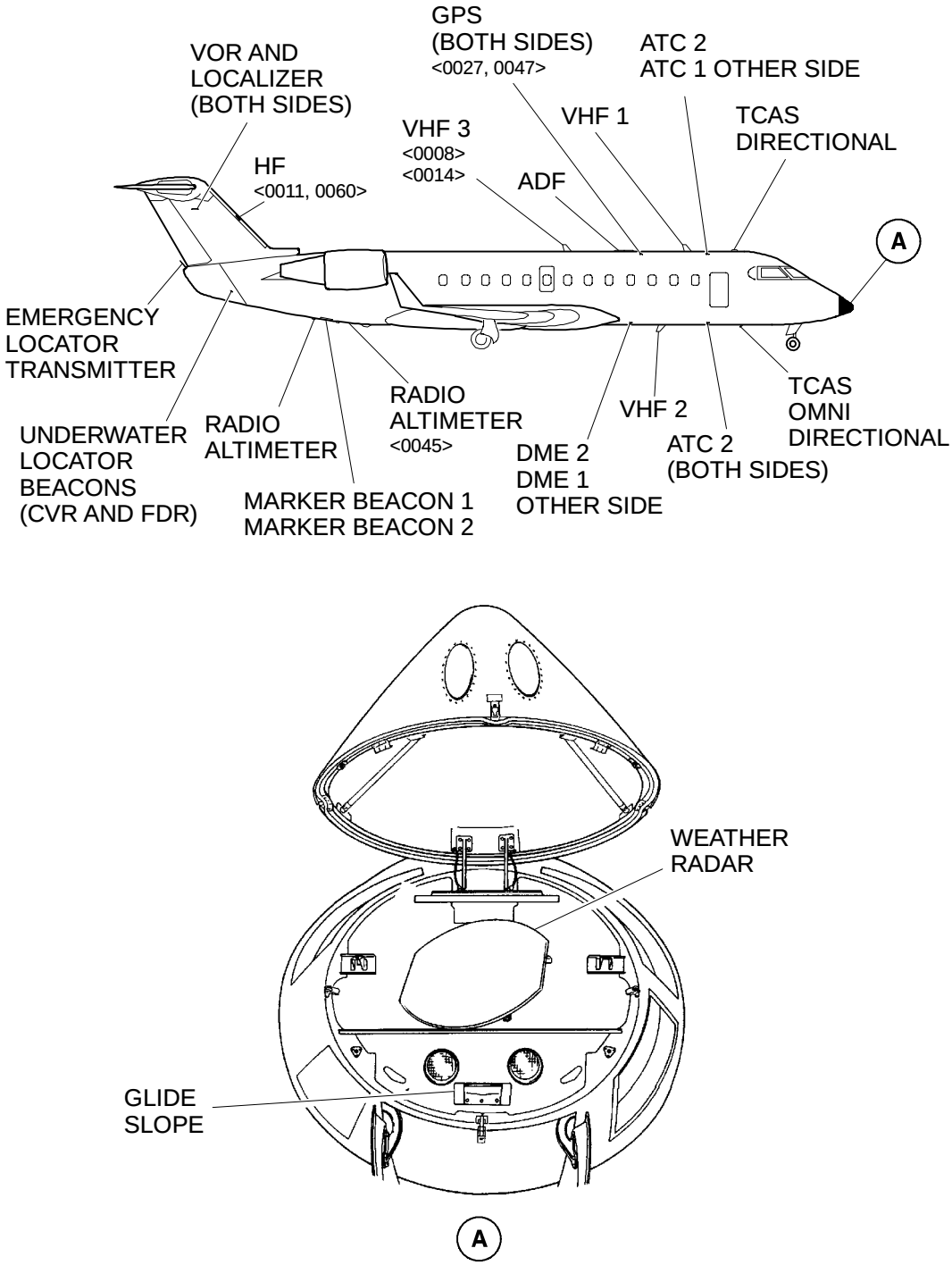
Airplane Servicing Points <MST>
Figure 01–20–4



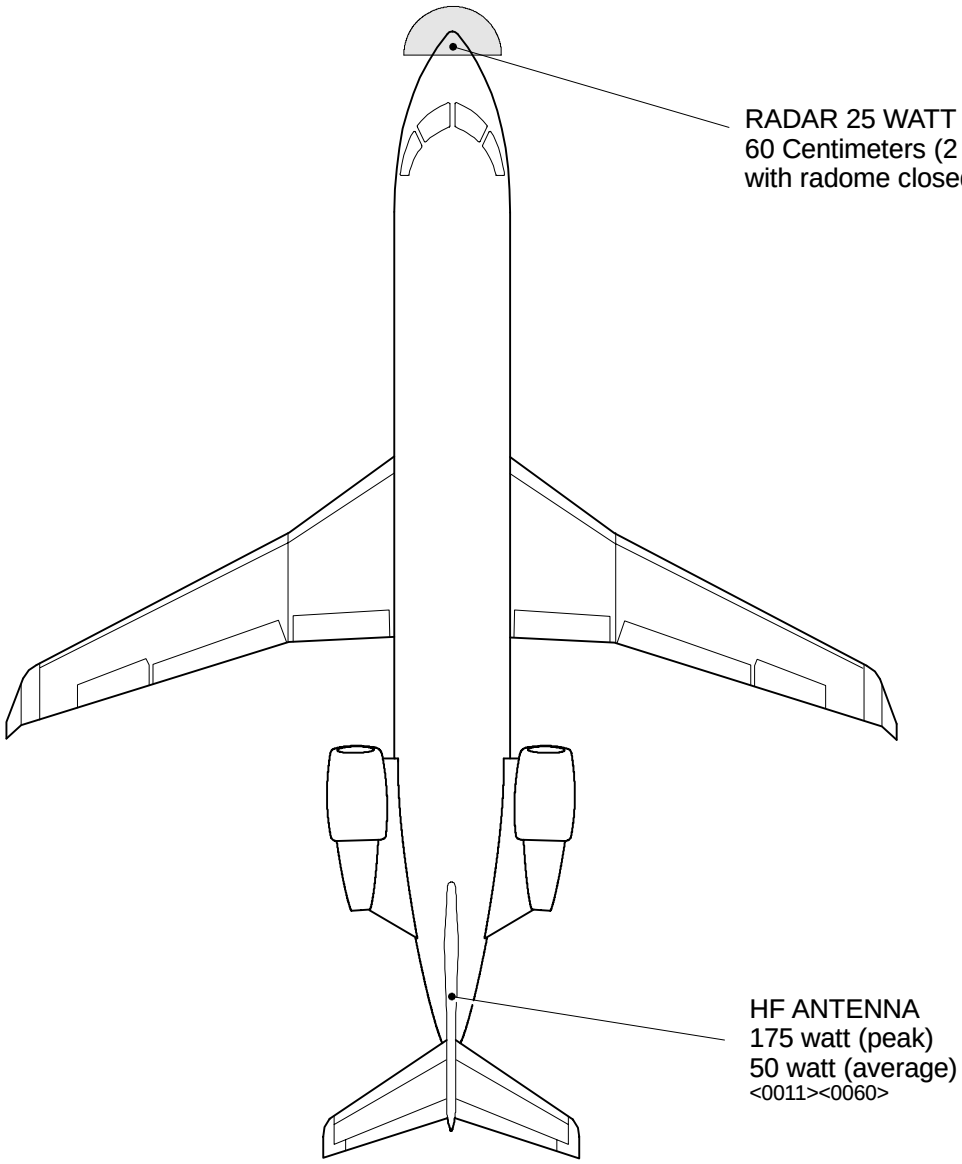
Airplane Parking and Mooring
Figure 01–20–5



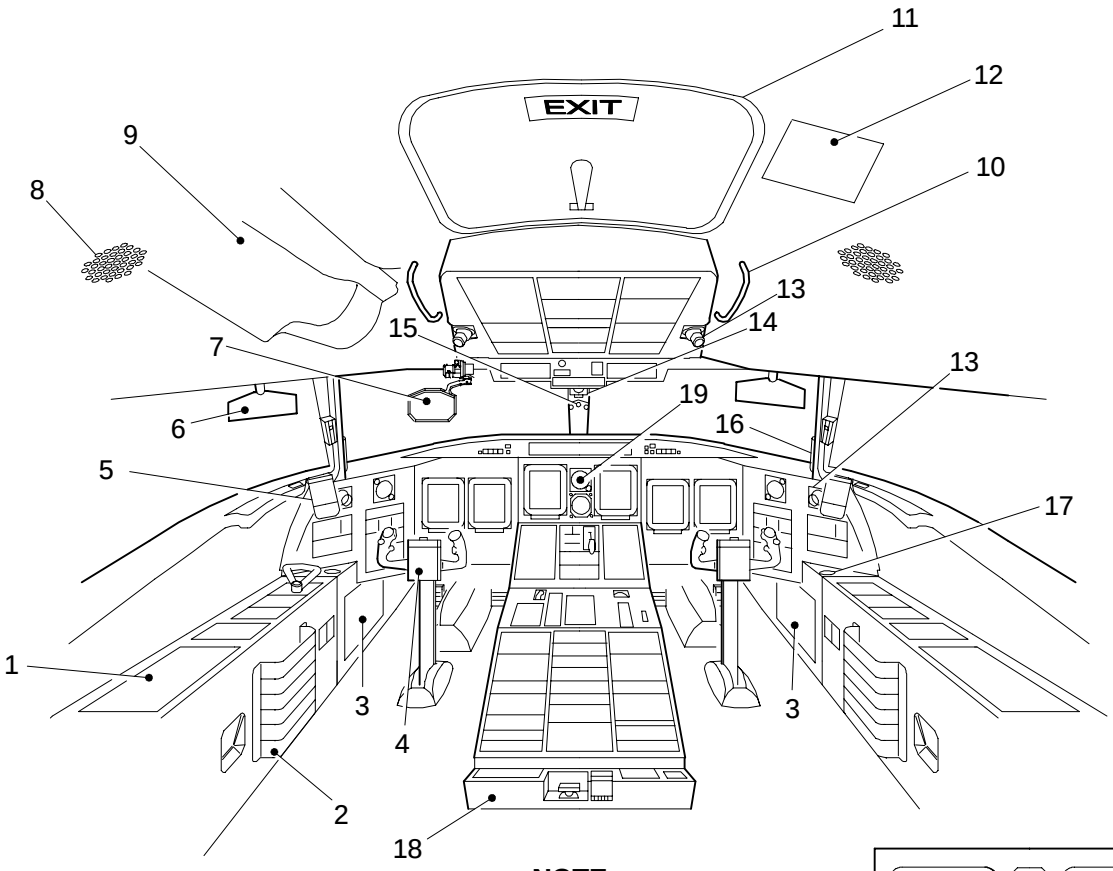
Covers and Plugs
Figure 01-20-6



Airplane Antenna Locations <MST>
Figure 01–20–7

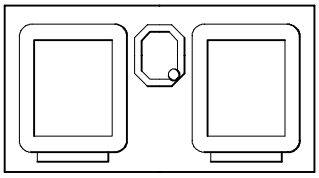


Hazard Areas – Radar and HF <MST>
Figure 01–20–8



NOTE

TWO INSTRUMENTS ARE TYPICAL.
ONE UNIT ONLY FOR OPTION <0083>
WHICH IS TOP UNIT.



<0083>

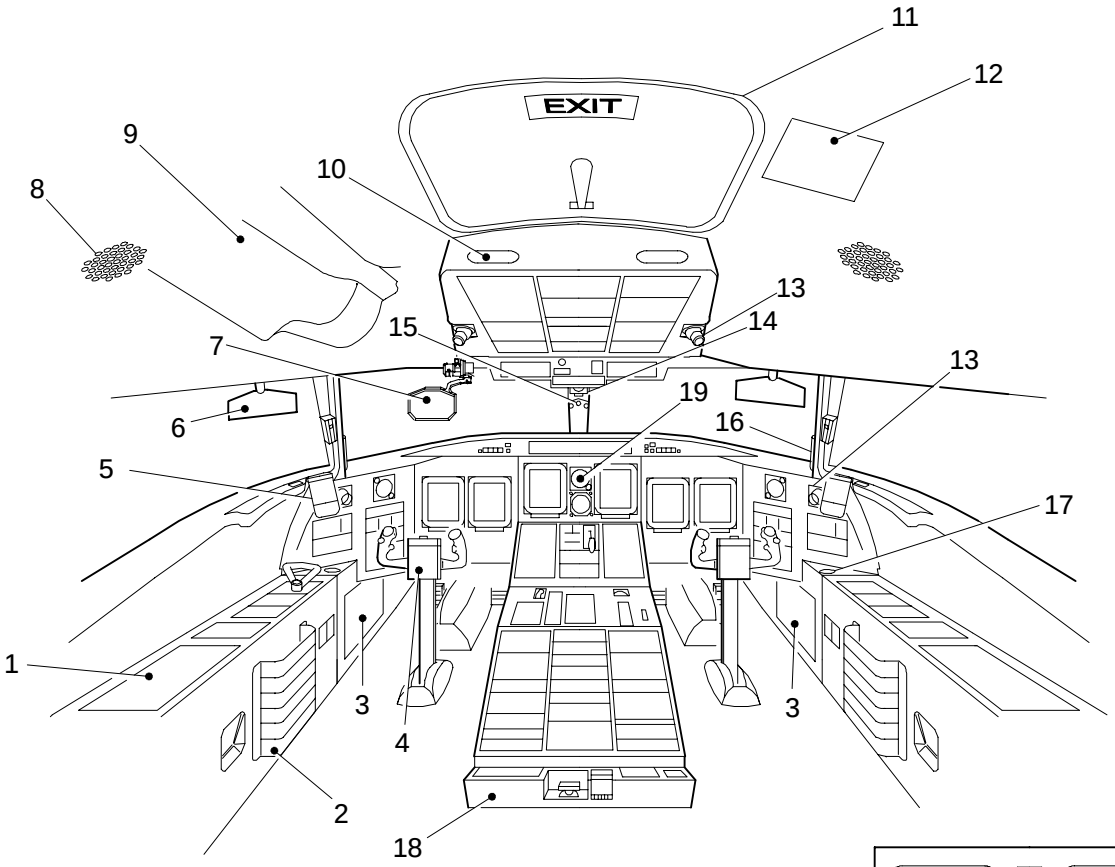
LEGEND

1. Flight bag storage unit.
2. Storage pocket.
3. Circuit breaker panel (see next page).
4. Check list holder.
5. Chart holder (adjacent to pencil holder and map light). (17)
6. Sun visor.
7. HGS combiner <0026>. (12)
8. Overhead speaker. (5)
9. HGS overhead unit <0026>. (12)
10. Hand hold.
11. Crew escape hatch. (1) (9)
12. Escape rope. (9)
13. Gaspers. (8)
14. Compass calibration card. (12)
15. Eye reference position datum. (1)
16. Pencil holder.
17. Cup holder.
18. Airplane operating manual storage unit.
19. Integrated STD instrument <0083>

(◯) Indicates Chapter in which information on item may be found.

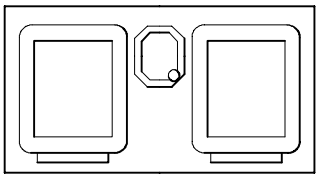
Effectivity:
Airplanes 7002 to 7451.

Flight Compartment General Arrangement Airplanes 7002 to 7451, <MST>
Figure 01–30–1



NOTE

TWO INSTRUMENTS ARE TYPICAL.
ONE UNIT ONLY FOR OPTION <0083>
WHICH IS TOP UNIT.



<0083>

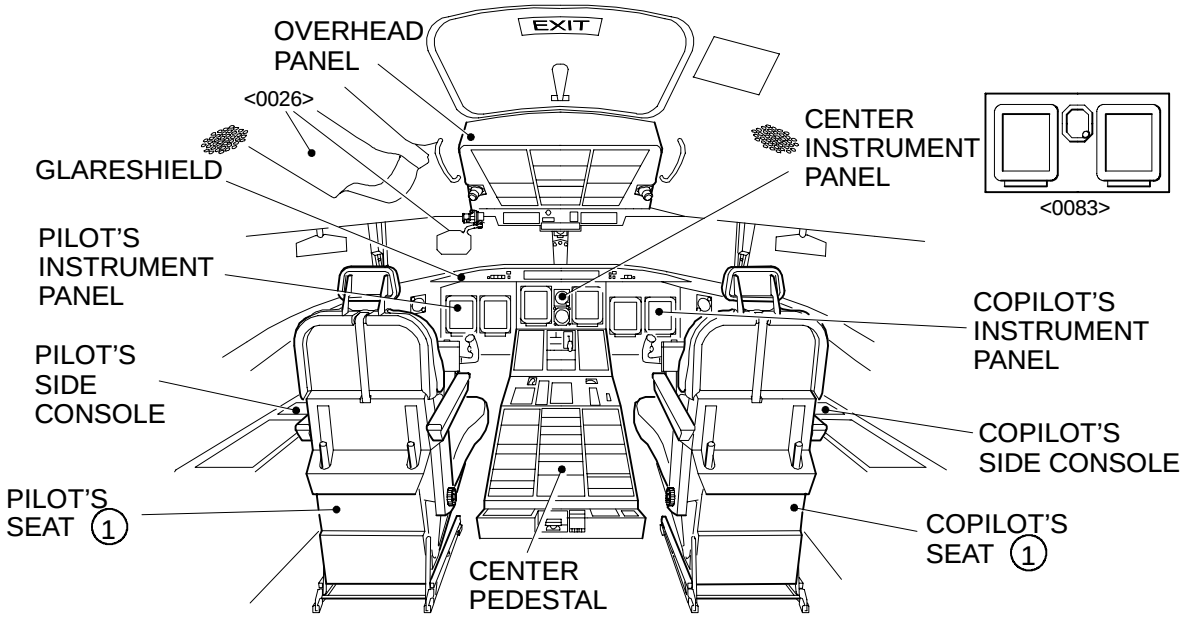
LEGEND

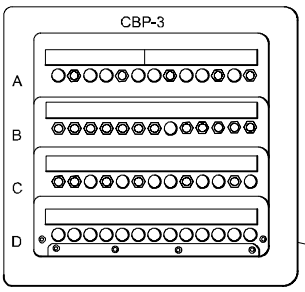
1. Flight bag storage unit.
2. Storage pocket.
3. Circuit breaker panel (see next page).
4. Check list holder.
5. Chart holder (adjacent to pencil holder and map light).(17)
6. Sun visor.
7. HGS combiner <0026>.(11)
8. Overhead speaker.(5)
9. HGS overhead unit <0026>.(11)
10. Hand hold.
11. Crew escape hatch.(1)(9)
12. Escape rope.(9)
13. Gaspers.(8)
14. Compass calibration card.(12)
15. Eye reference position datum.(1)
16. Pencil holder.
17. Cup holder.
18. Airplane operating manual storage unit.
19. Integrated STD instrument <0083>

◯ Indicates Chapter in which information on item may be found.

Effectivity:
Airplanes 7452 and subsequent.

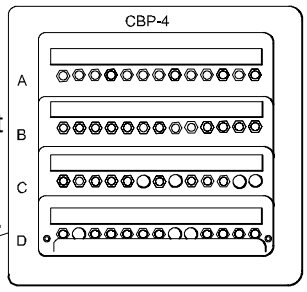
Flight Compartment General Arrangement Airplanes 7452 and Subsequent, <MST>
Figure 01–30–1





AC essential bus circuit breaker panel CBP–3 (Pilot's side console, forward foot–well area).

DC essential bus circuit breaker panel CBP–4 (Copilot's side console, forward foot–well area).

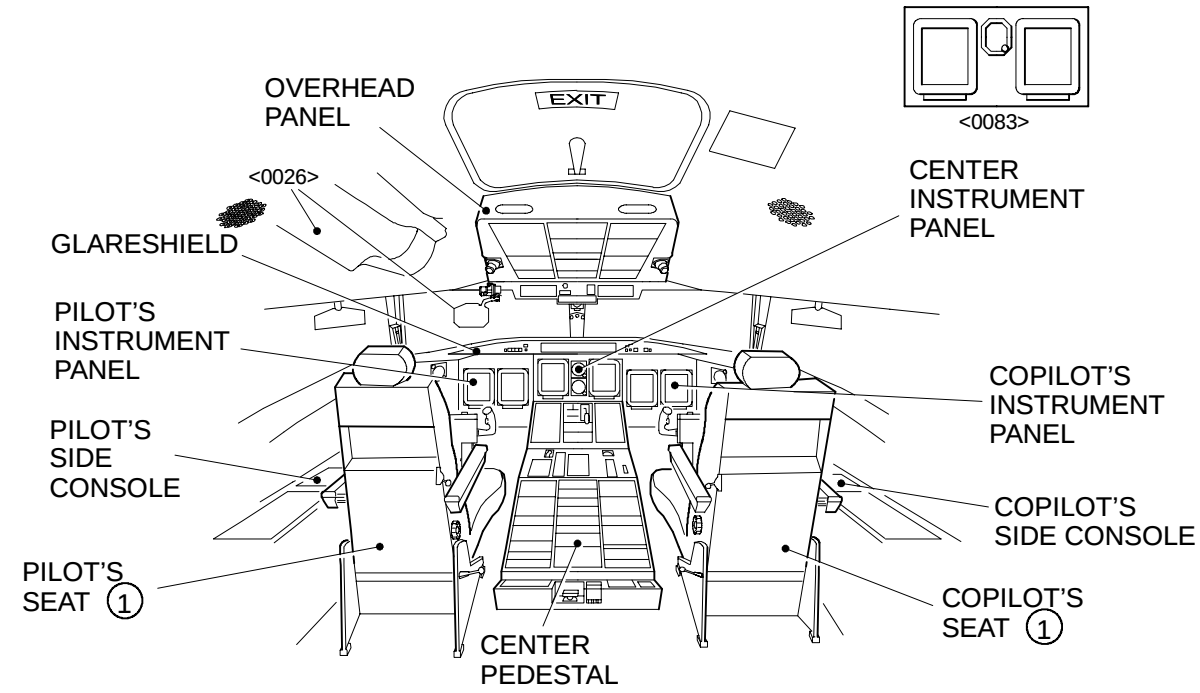


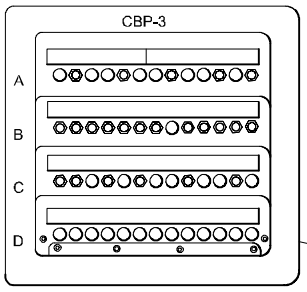
CIRCUIT BREAKER PANELS (7)

(○) Indicates Chapter in which information on item may be found.

Effectivity:
Airplanes 7002 to 7451.

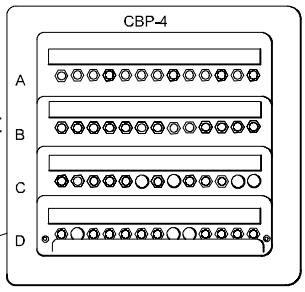
Flight Compartment (Forward View) Airplanes 7002 to 7451, <MST>
Figure 01–30–2





AC essential bus circuit breaker panel CBP-3 (Pilot's side console, forward foot-well area).

DC essential bus circuit breaker panel CBP-4 (Copilot's side console, forward foot-well area).

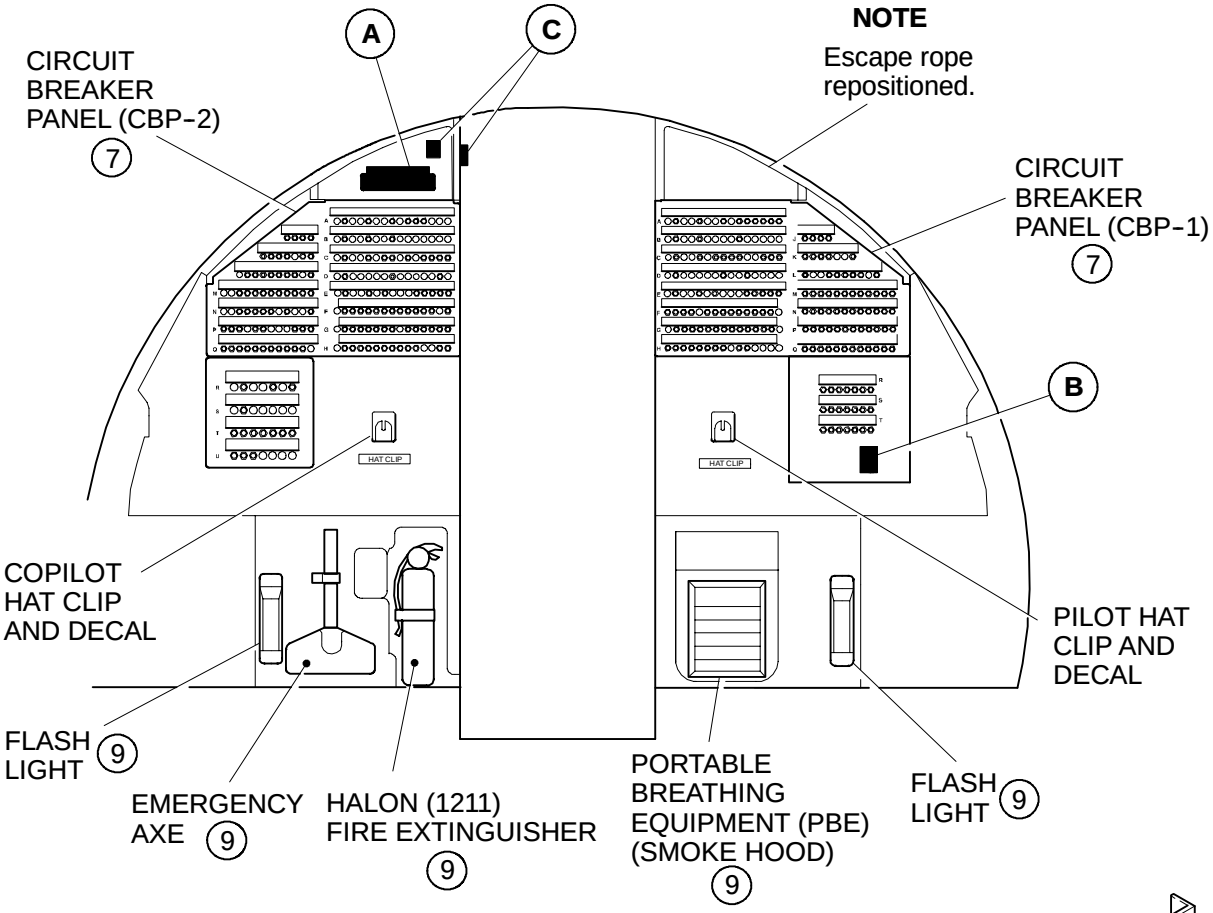


CIRCUIT BREAKER PANELS (7)

(○) Indicates Chapter in which information on item may be found.

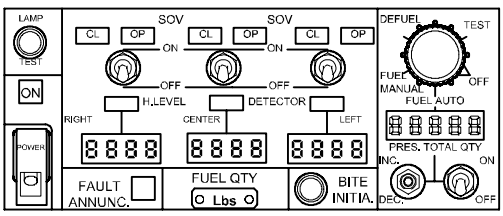
Effectivity:
Airplanes 7452 and subsequent.

Flight Compartment (Forward View) Airplanes 7452 and Subsequent, <MST>
Figure 01–30–2



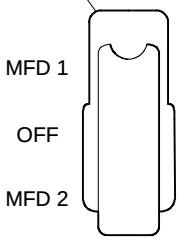
LIFE VEST (2): BENEATH PILOT AND COPILOT SEATS

MULTI–FUNCTION DISPLAY MAINTENANCE MODE SWITCH 2

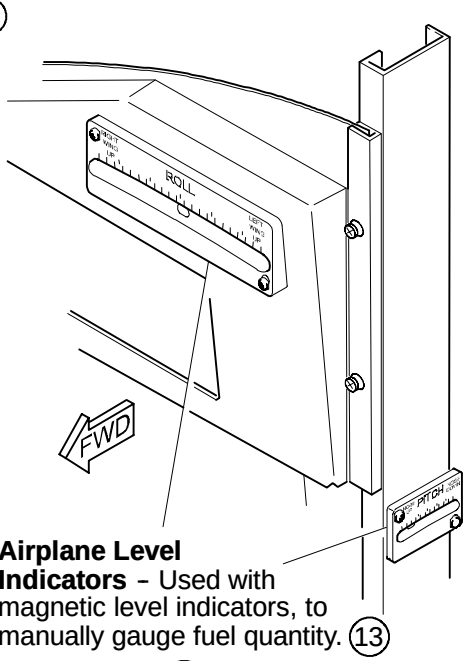


FUEL QUANTITY PRESELECT PANEL <0017> 13

A



B

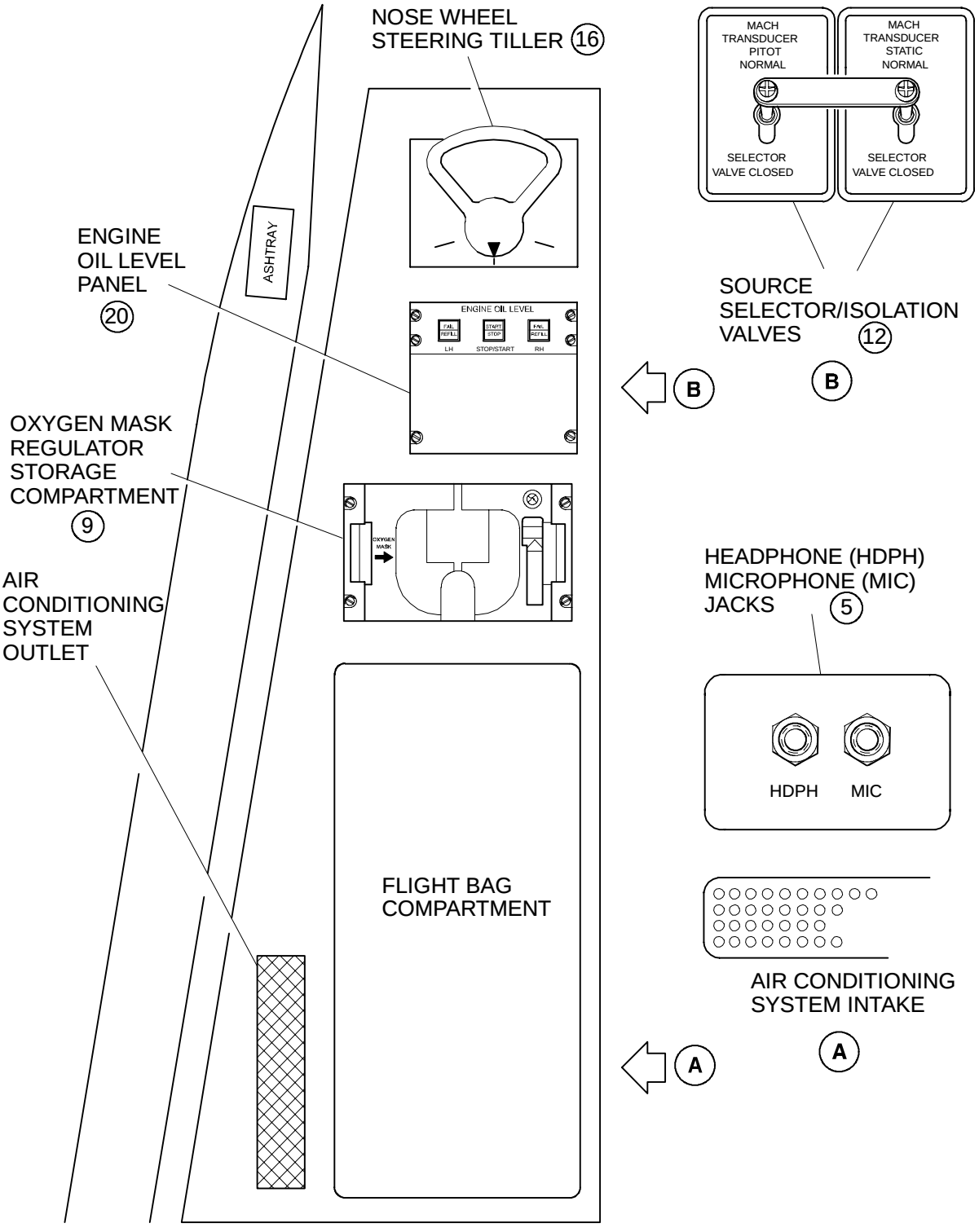


Airplane Level Indicators – Used with magnetic level indicators, to manually gauge fuel quantity. 13

C

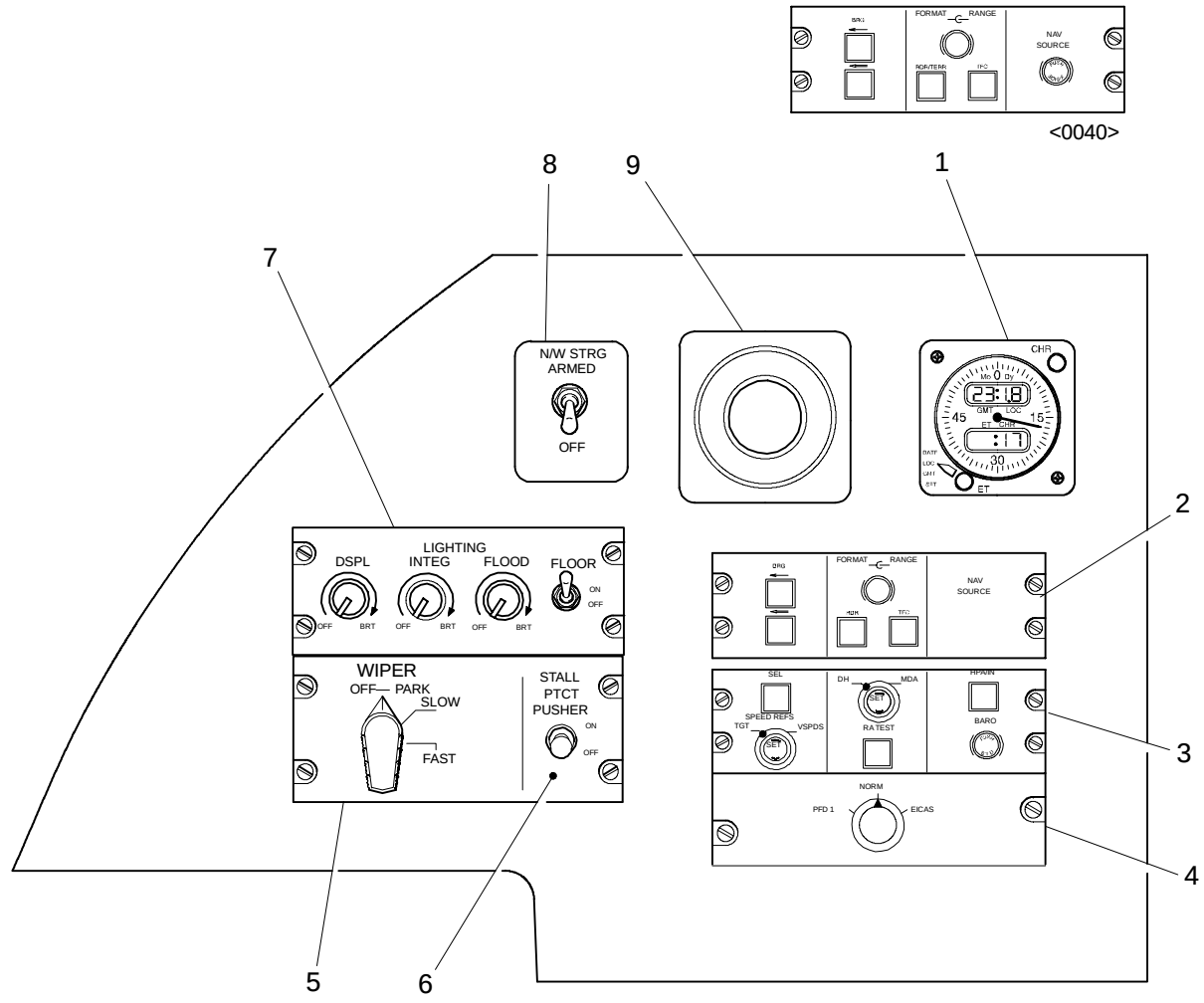
◯ Indicates Chapter in which information on item may be found.

Flight Compartment (AFT View) <MST>
Figure 01–30–3



◯ Indicates Chapter in which information on item may be found.

Pilot's Side Console
Figure 01–30–4



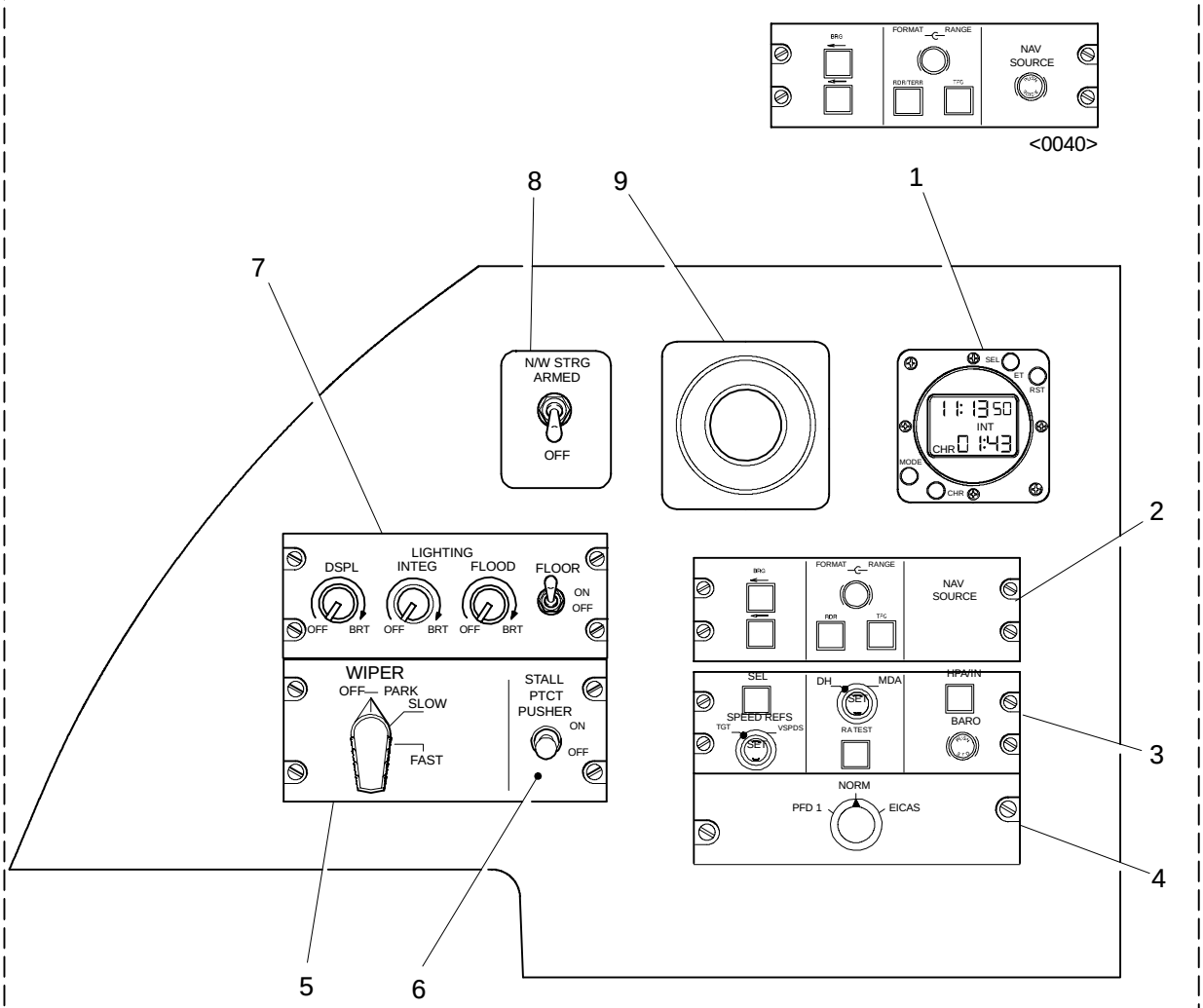
LEGEND

1. Clock. (12)
2. Display control panel. (12) (18)
3. Air data reference panel. (12) (18)
4. Display reversionary panel. (2)
5. Windshield wiper control panel. (15)
6. Stall protection panel. (11)
7. Lighting panel. (17)
8. Nose wheel steering subpanel. (16)
9. Air conditioning system gasper. (8)

(◯) Indicates Chapter in which information on item may be found.

Effectivity:
Airplanes 7002 to 7672.

Pilot's Side Panel Airplanes 7002 to 7672,<MST>
Figure 01–30–5



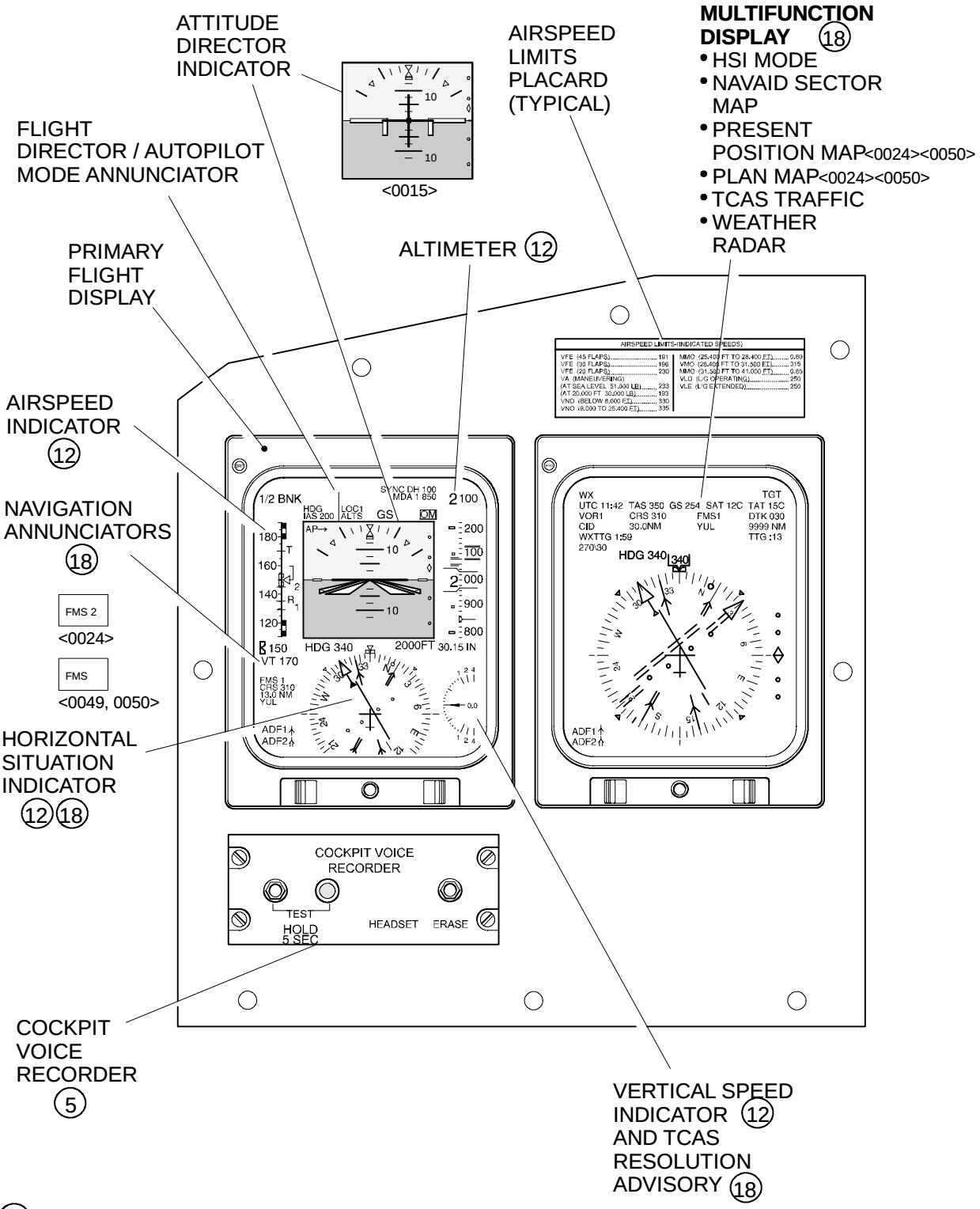
LEGEND

1. Clock. (12)
2. Display control panel. (12) (18)
3. Air data reference panel. (12) (18)
4. Display reversionary panel. (2)
5. Windshield wiper control panel. (15)
6. Stall protection panel. (11)
7. Lighting panel. (17)
8. Nose wheel steering subpanel. (16)
9. Air conditioning system gasper. (8)

(◯) Indicates Chapter in which information on item may be found.

Effectivity:
Airplanes 7673 and subsequent.

Pilot's Side Panel Airplanes 7673 and Subsequent, <MST>
Figure 01–30–5



◯ Indicates Chapter in which information on item may be found.

Pilot's Instrument Panel <MST>
Figure 01–30–6

LEFT ENGINE MASTER | RIGHT ENGINE MASTER

THIS A/C HAS MIXED -3A1/-3B1 ENGINES
THE RIGHT ENGINE IS THE MASTER ENGINE
-3A1 POWER SETTINGS APPLY SEE AFM SUPPLEMENT 10

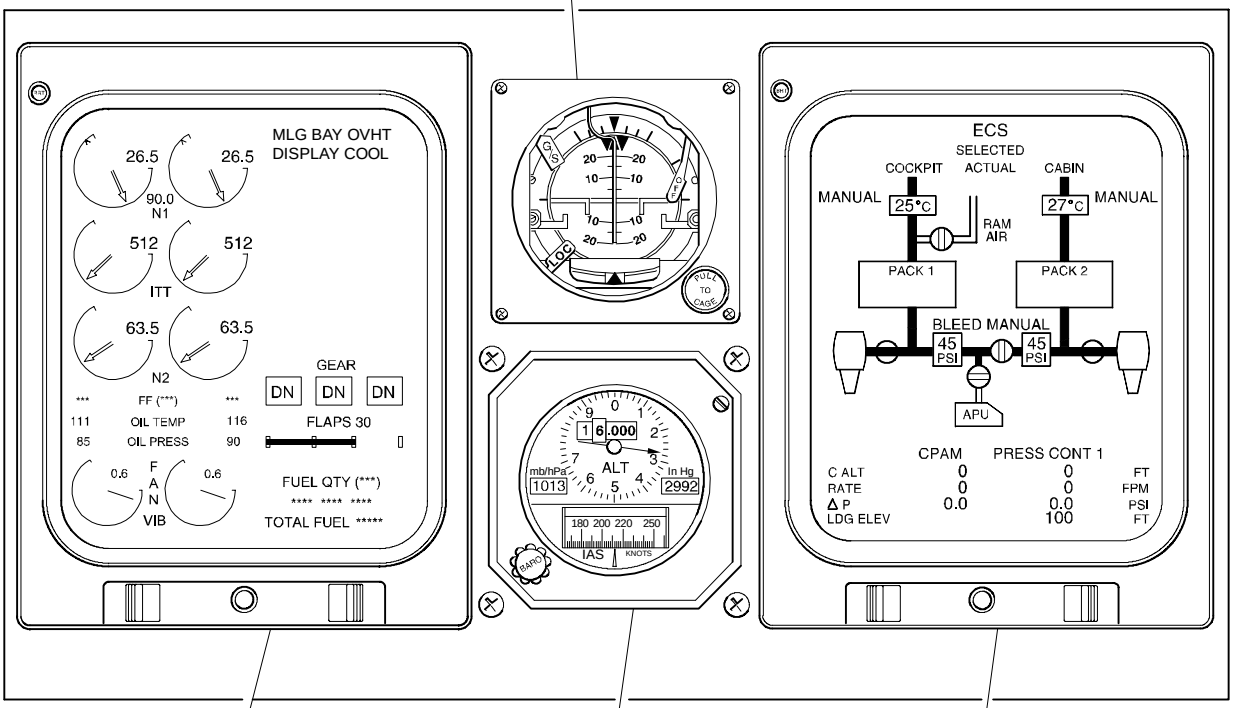
NOTE
Placards apply only to aircraft with engines mixed 3A1/3B1

Standby Airspeed / Altitude / Attitude Indicator (12)

<0083>

<0015>

Standby Attitude Indicator (12)



Standby Altimeter/Indicated Airspeed Indicator (12)

Engine Indication and Crew Alerting System (EICAS) Primary Display
- Engine Instruments (20)
- Caution and Warning Annunciator (2)
- Fuel Flow and Quantity (13)
- Flap Position Indicator (11)
- Landing Gear Indicator (16)
- Pressurization Indicator (Manual Mode) (8)

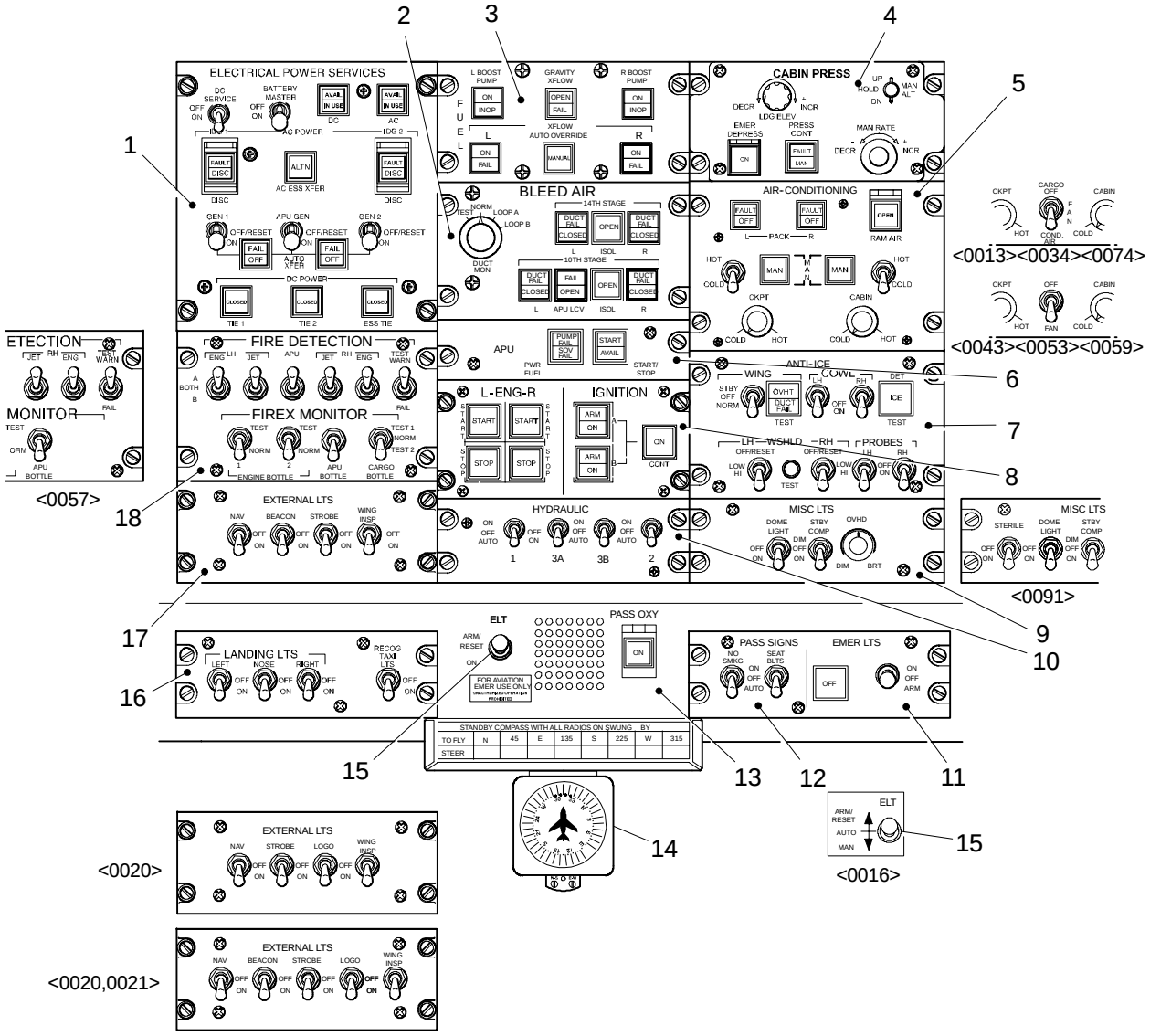
<0039>

<0006>

EICAS Secondary Display
- Airplane Status Information (Messages, surface position, APU instruments) (2)
- Environmental Control System (8)
- Electrical System (7)
- Fuel System (13)
- Flight Controls (11)
- Anti-Ice (15)
- Doors (6)
- Menu (Flight No., N1 Bugs, Fuel reset) (2)

◯ Indicates Chapter in which information on item may be found.

Center Instrument Panel <MST>
Figure 01–30–7

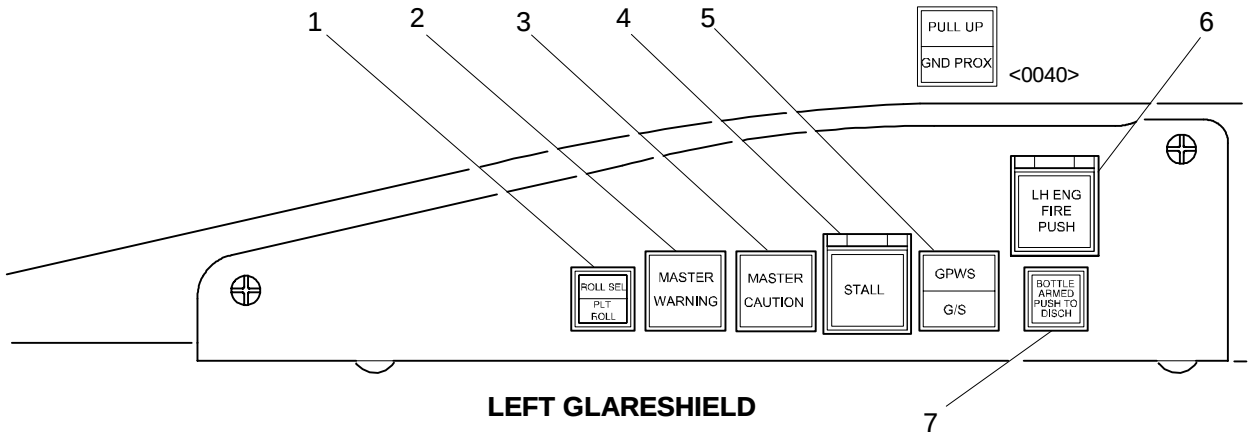


LEGEND

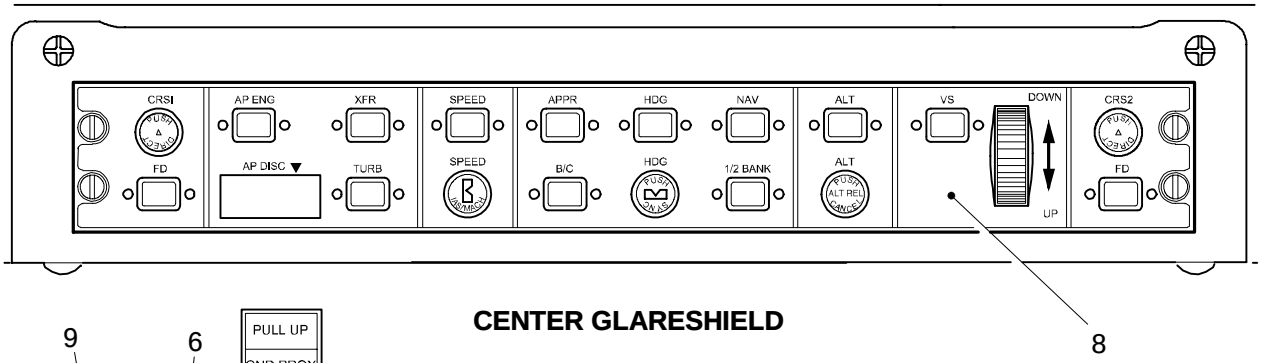
1. Electrical Power Panel (7)
2. Bleed Air Panel (19)
3. Fuel Panel (13)
4. Cabin Pressurization Panel (8)
5. Air–Conditioning Panel (8)
6. APU Panel (4)
7. Anti–Ice Panel (15)
8. Engine/Ignition Panel (20)
9. Miscellaneous Lights Panel (17)
10. Hydraulic Panel (14)
11. Emergency Lights Panel (17)
12. Passenger Signs Panel (1)
13. Passenger Oxygen Panel (9)
14. Standby Compass (12)
15. Emergency Locator Transmitter (9)
16. Landing/Taxi Lights Panel (17)
17. External Lights Panel (17)
18. Fire Detection Panel (10)

(○) Indicates Chapter in which information on item may be found.

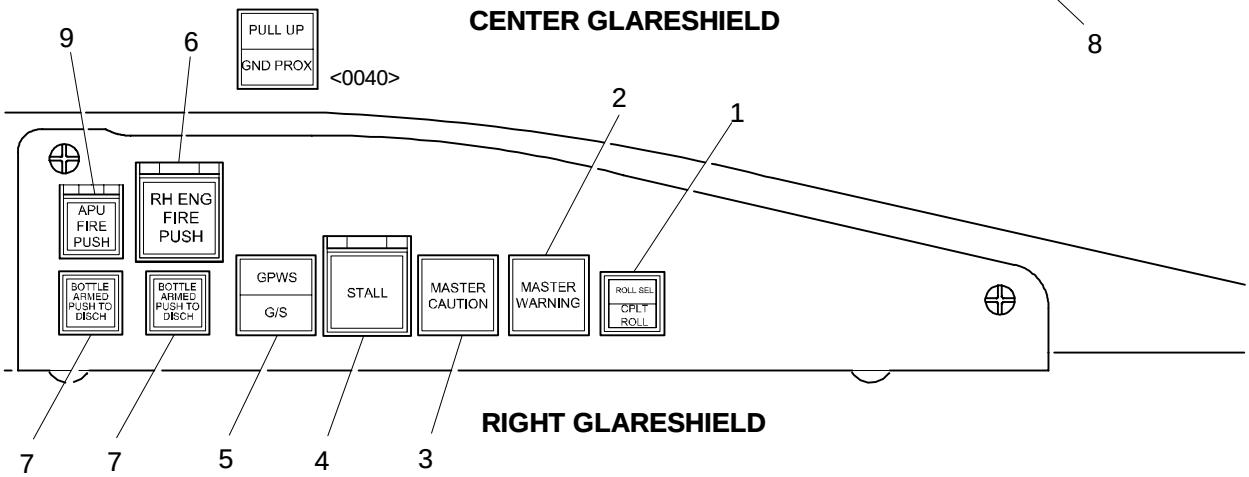
Overhead Panel <MST>
Figure 01–30–8



LEFT GLARESHIELD



CENTER GLARESHIELD



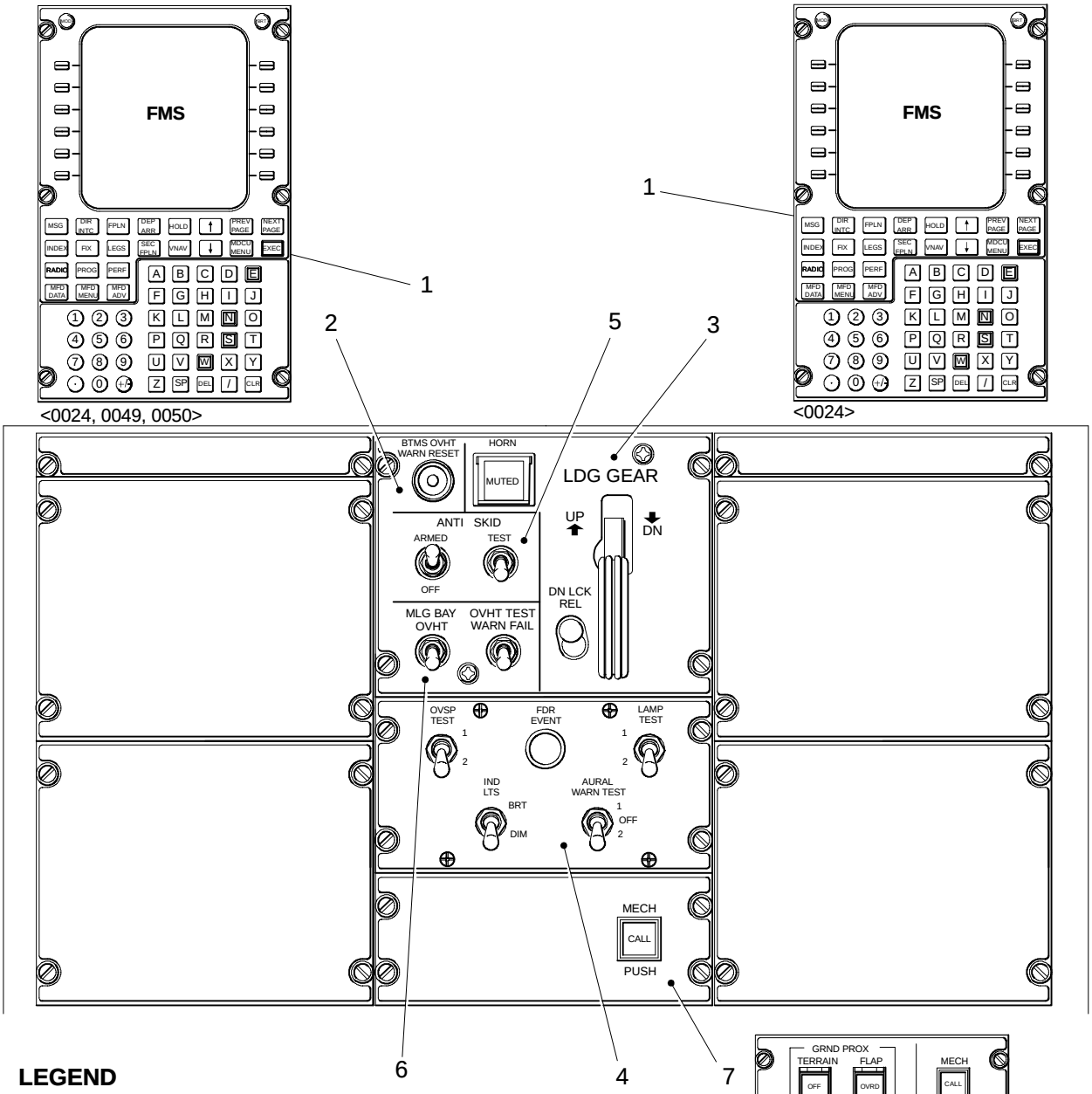
RIGHT GLARESHIELD

LEGEND

1. Roll Select Switch/Light. (11)
2. Master Warning Switch/Light. (2)
3. Master Caution Switch/Light. (2)
4. Stall Warning Switch/Light. (11)
5. GPWS and Glideslope Warning Switch/Light. (18)
   PULL UP / GND PROX Glideslope Switch/Light. <0040> (18)
6. Engine Fire Warning Switch/Light. (10)
7. Firex Bottle Discharge Switch/Lights. (10)
8. Flight Control Panel. (3)
9. APU Fire Warning Switch/Light. (10)

(○) Indicates Chapter in which information on item may be found.

Glareshield <MST>
Figure 01–30–9

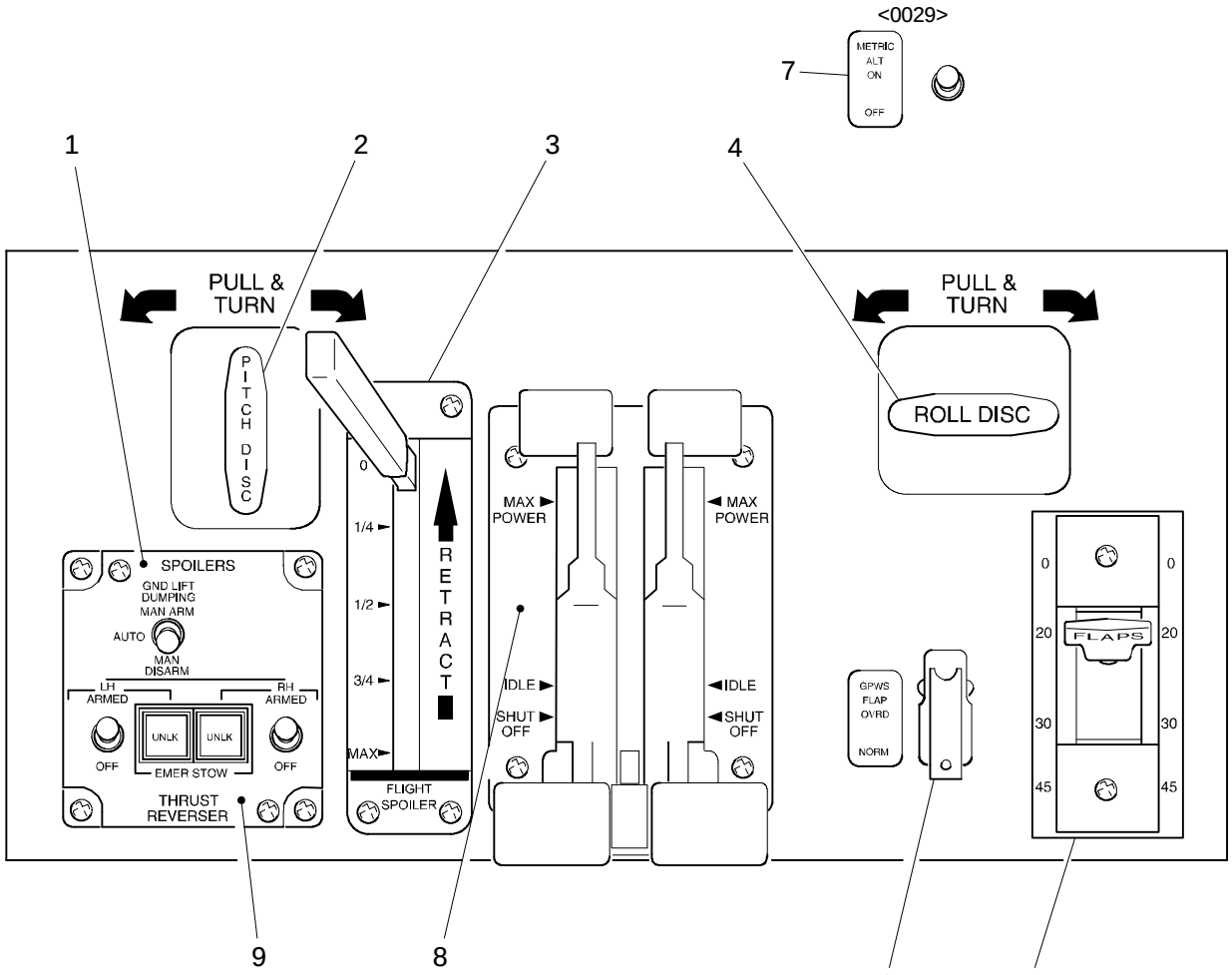


LEGEND

1. FMS control display unit. (12)
2. Brake temperature monitoring system subpanel. (16)
3. Landing gear control panel. (16)
4. EICAS test panel. (2)
5. Antiskid system control panel. (16)
6. Main landing gear overheat test panel. (16)
7. Interphone panel. (5)
8. EGPWS/mechanic call panel. (5)

◯ Indicates Chapter in which information on item may be found.

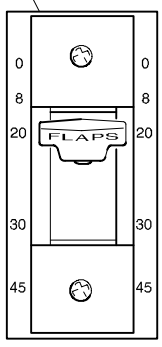
Center Pedestal (Upper) <MST>
Figure 01–30–10



LEGEND

1. Spoilers System Control Subpanel (11)
2. Pitch Disconnect Control (11)
3. Spoilers Lever Panel (11)
4. Roll Disconnect Control (11)
5. Flap Lever Panel (11)
6. Ground Proximity Warning System/Flap Override Switch (11)
7. Metric Altimeter Subpanel <0029> (12)
8. Thrust Lever Quadrant (20)
9. Thrust Reverser Subpanel (20)

<0040>
Option removes Ground Proximity Warning System/Flap Override Switch



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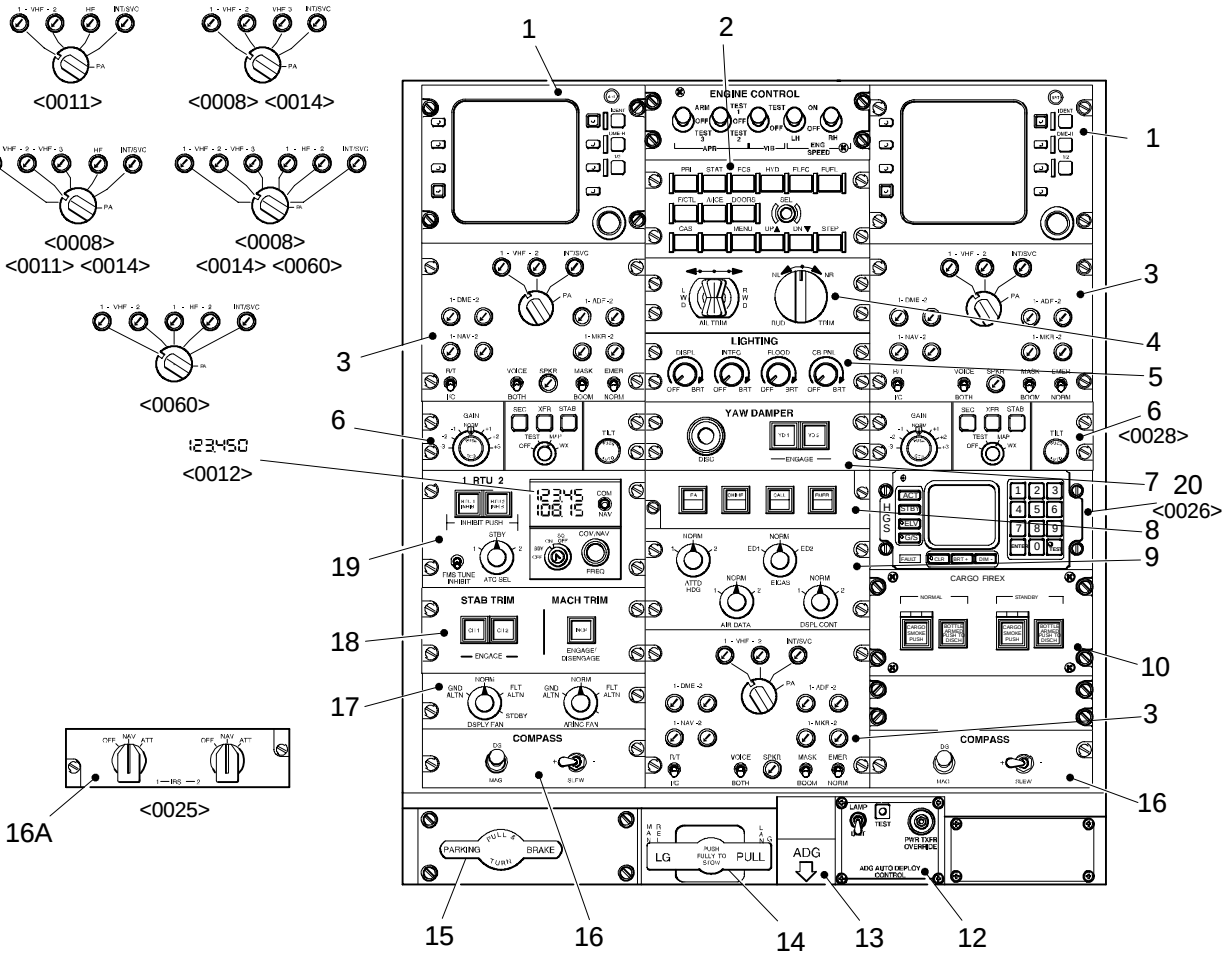
◯ Indicates Chapter in which information on item may be found.

Center Pedestal – Thrust Lever and Flight Controls <MST>
Figure 01–30–11



LEGEND

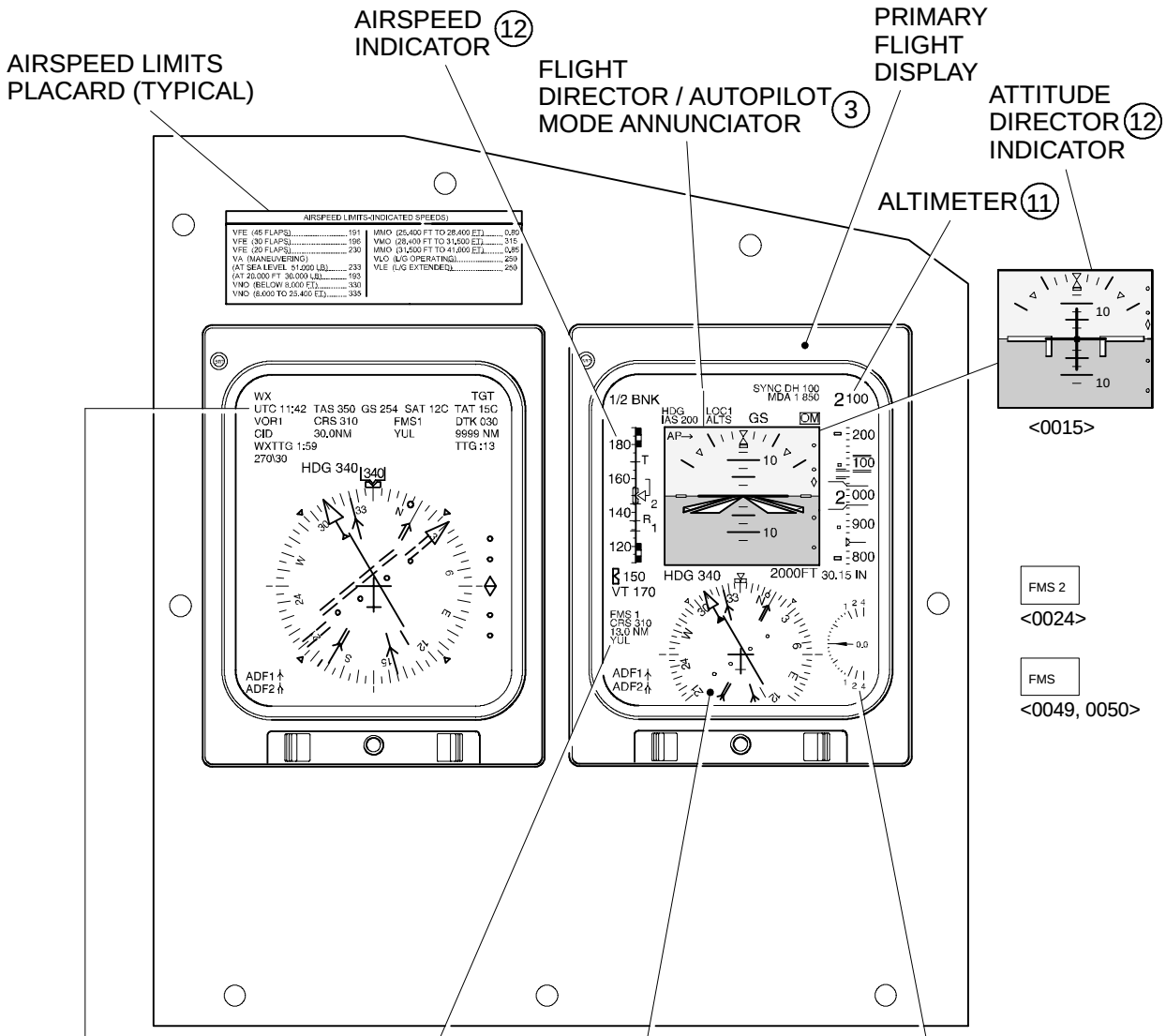
1. Radio tuning unit. (5) (18)
2. EICAS control panel. (2)
3. Audio control panel. (5) (18)
4. Aileron/rudder trim panel. (11)
5. Lighting panel. (17)
6. Weather radar control panel. (18)
7. Yaw damper panel. (11)
8. Interphone control panel. (5)
9. Source selector panel. (2) (12)
10. Cargo FIREX panel. (10)
11. Emergency flap deploy control. (11)
12. Air driven generator - auto-deploy panel. (7)
13. Air driven generator - manual deploy handle. (7)
14. Landing gear - manual release handle. (16)
15. Parking brake handle. (16)
16. Compass control panel (on both sides). (12)

16A. IRS mode select unit. <0025> (12)

17. Avionics cooling control panel. (8)
18. Stabilizer/Mach trim panel. (11)
19. Backup tuning unit. (5)
20. HGS control panel. <0026> (12)

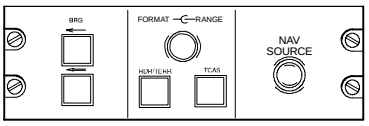
◯ Indicates Chapter in which information on item may be found.

Center Pedestal (Lower) <MST>
Figure 01–30–12



◯ Indicates Chapter in which information on item may be found.

Copilot's Instrument Panel <MST>
Figure 01–30–13



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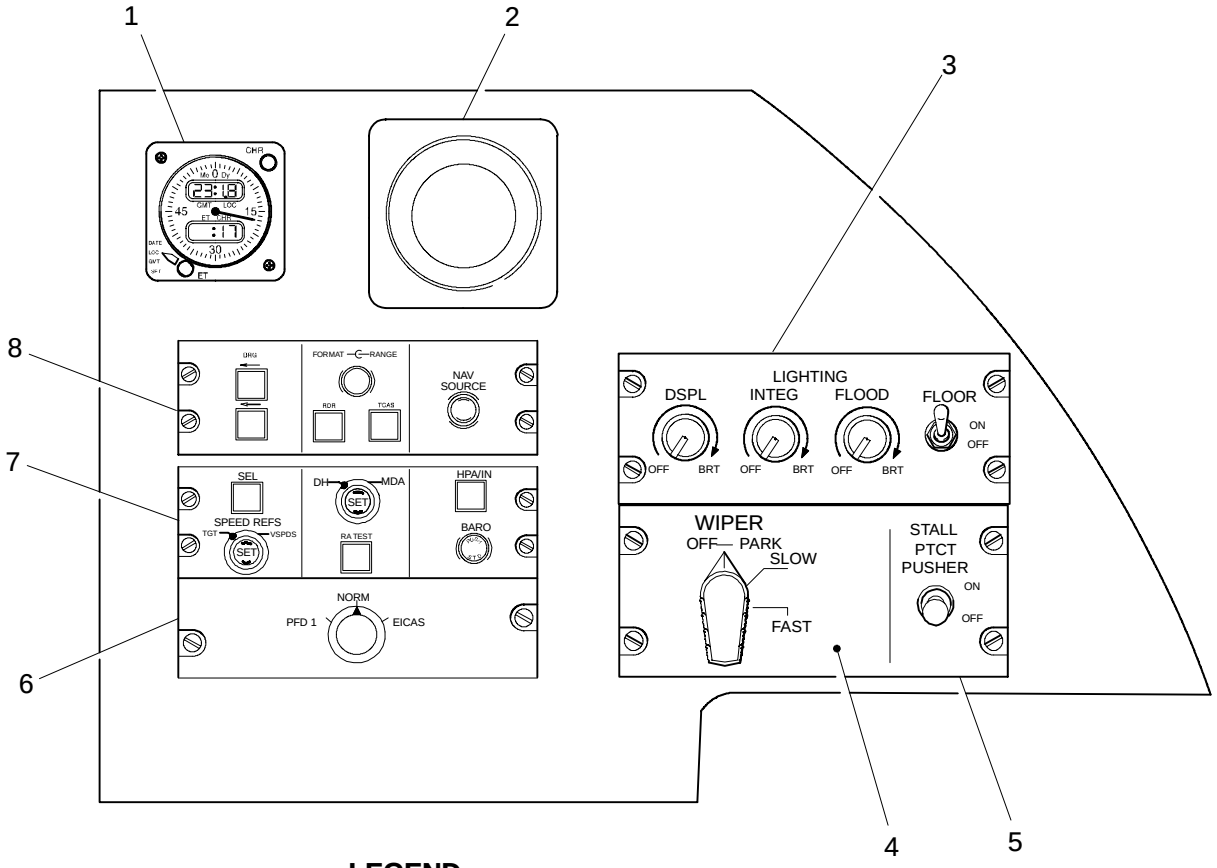


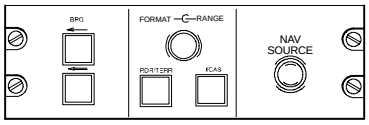
LEGEND

1. Clock. (13)
2. Air conditioning system gasper. (9)
3. Lighting panel. (18)
4. Windshield wiper control panel. (16)
5. Stall protection panel. (12)
6. Display reversionary panel. (8)
7. Air data reference panel. (13) (20)
8. Display control panel. (13) (20)

(◯) Indicates Chapter in which information on item may be found.

Effectivity:
Airplanes 7002 to 7672.

Copilot's Side Panel Airplanes 7002 to 7672, <MST>
Figure 01–30–14



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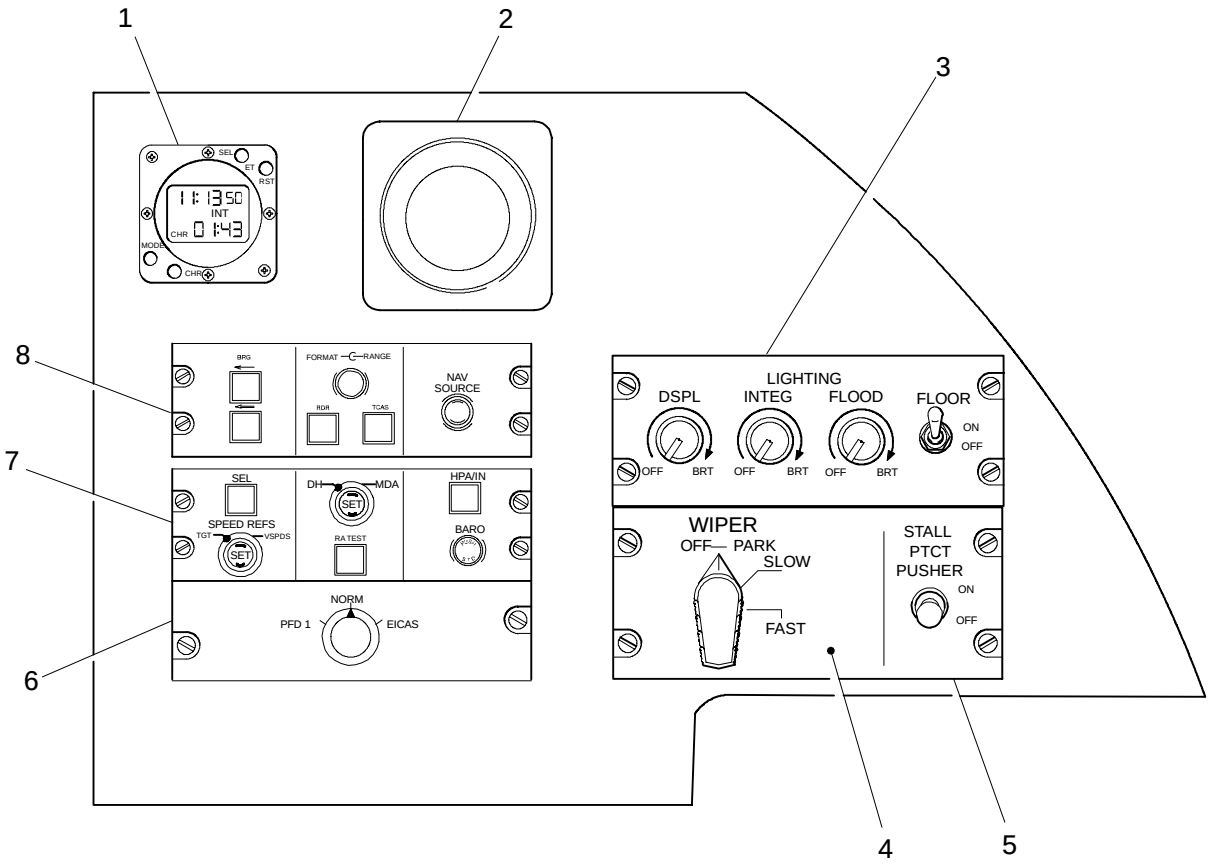


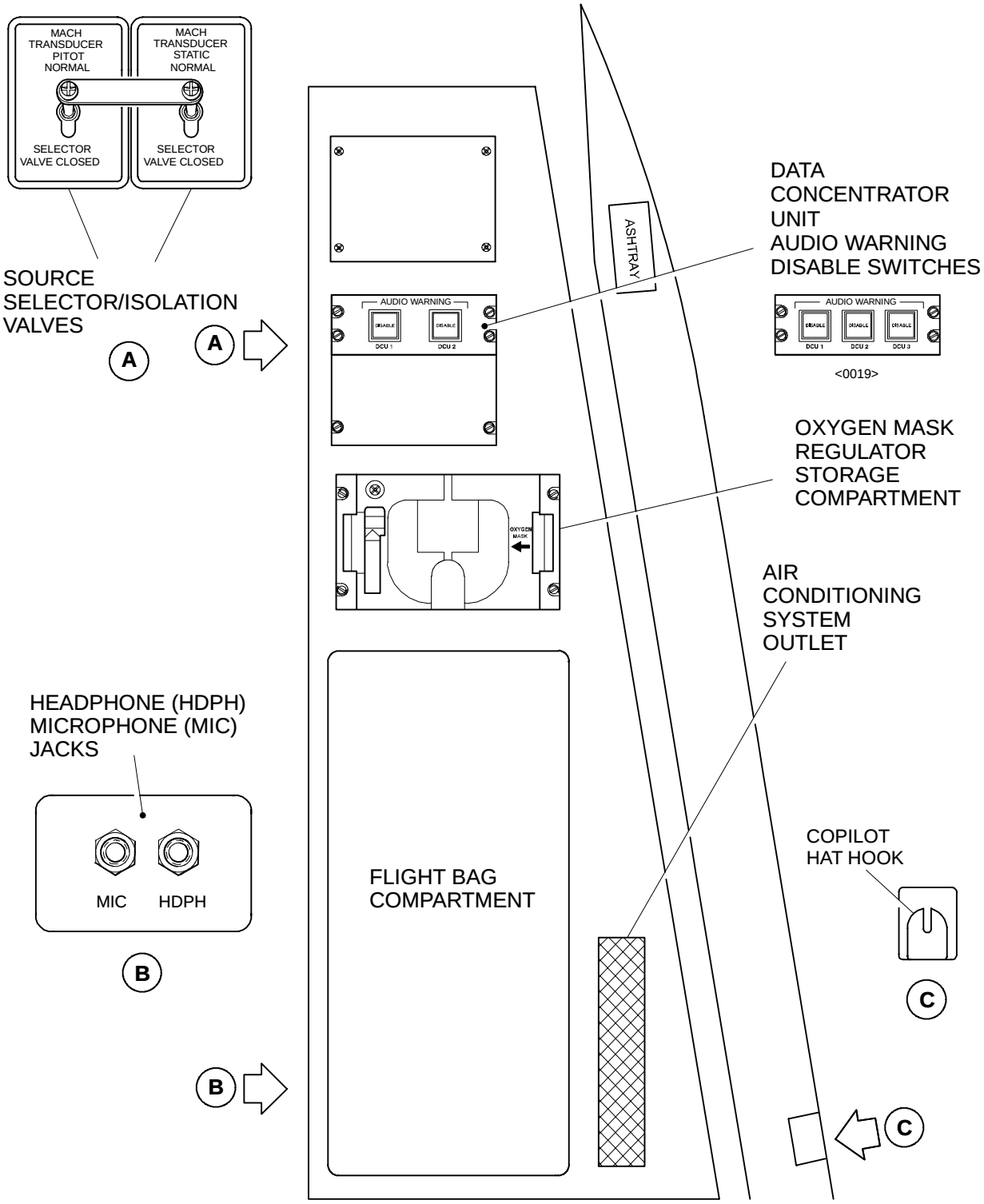
LEGEND

1. Clock. (13)
2. Air conditioning system gasper. (9)
3. Lighting panel. (18)
4. Windshield wiper control panel. (16)
5. Stall protection panel. (12)
6. Display reversionary panel. (8)
7. Air data reference panel. (13) (20)
8. Display control panel. (13) (20)

(◯) Indicates Chapter in which information on item may be found.

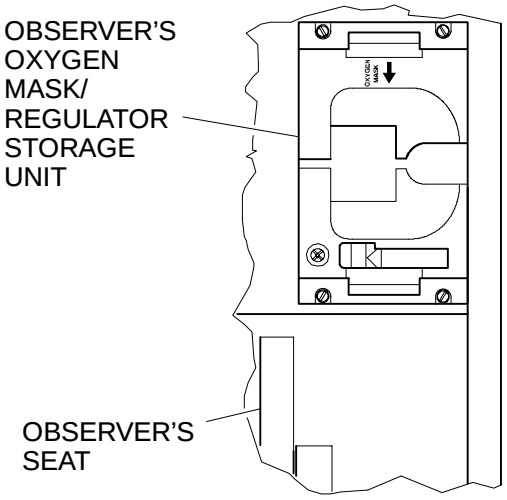
Effectivity:
Airplanes 7673 and subsequent.

Copilot's Side Panel Airplanes 7673 and Subsequent, <MST>
Figure 01–30–14

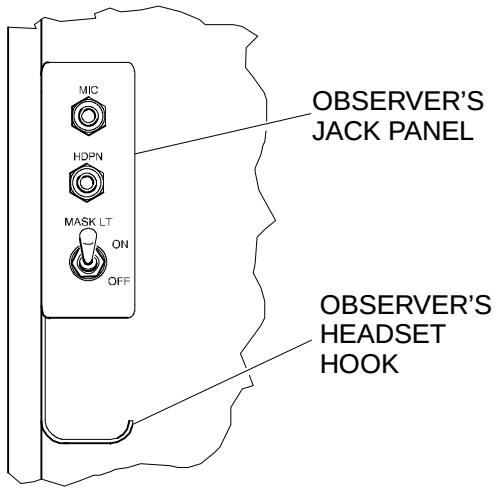


◯ Indicates Chapter in which information on item may be found.

Copilot's Side Console <MST>
Figure 01–30–15

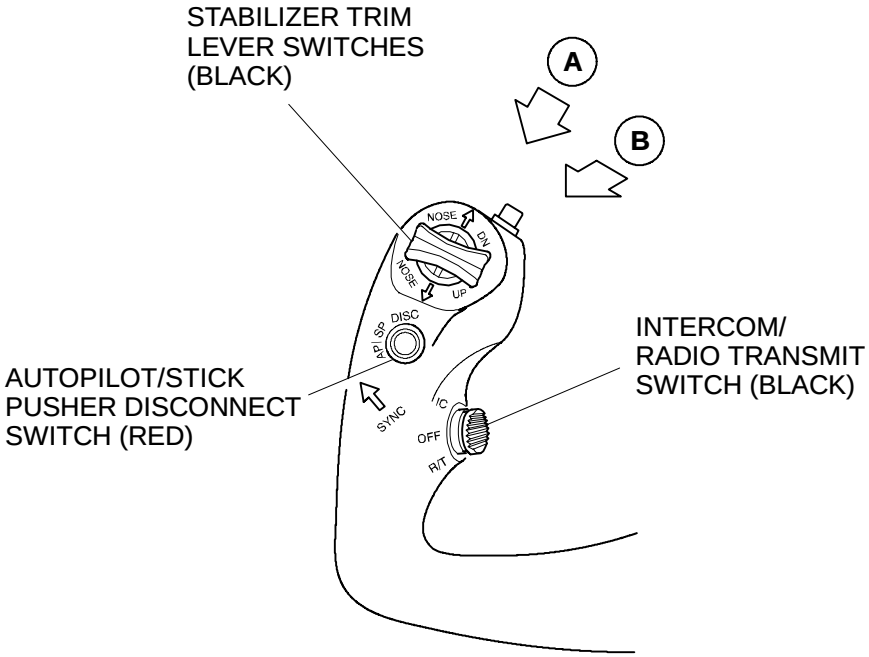


**OBSERVER'S STATION
LEFT HAND SIDE**

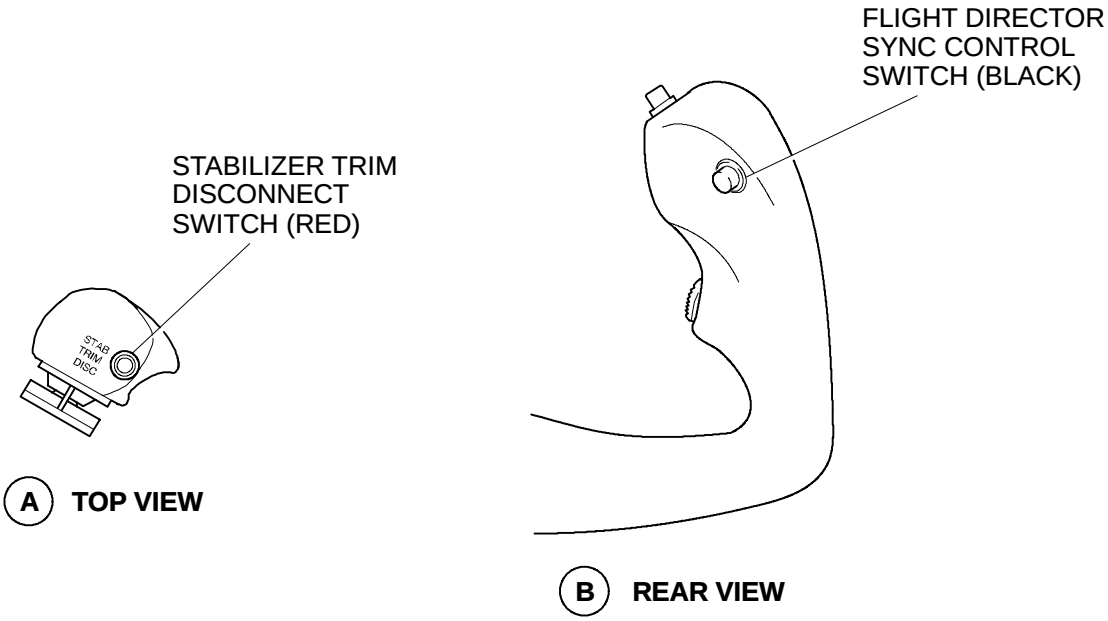


**OBSERVER'S STATION
RIGHT HAND SIDE**

Fwd Attendant/Observer Position
Figure 01–30–16



PILOT'S CONTROL WHEEL
(COPILOT'S OPPOSITE)



A TOP VIEW

B REAR VIEW

Control Wheels
Figure 01–30–17

1. REINFORCED FLIGHT COMPARTMENT DOOR <0093><FAA>

The reinforced flight compartment door is made to enhance the security, protect from ballistic threat and prevent unauthorized access to the flight compartment. The door is made from Nomex core panels, sandwiched in the middle with a bullet proof insert.

The door consists of:

- Slide latch
- Deadbolt assembly
- Two quick–release hinge pins
- Viewer
- Decompression panel and latch

The slide latch is used to latch and unlatch the door.

The deadbolt assembly is used for added security to lock/unlock the door. A key is required to lock/unlock the door from the passenger compartment. To lock/unlock the door from the flight compartment, the deadbolt is manually rotated.

The two quick–release hinge pins are used to remove the door.

The viewer has two lenses (in a 1.5 " thick plug) to increase the magnification for field of view and to provide bullet resistance.

The decompression panel is held on the door by decompression latches. When the pressure differential between the passenger cabin and flight compartment is more than a preset limit, the latch releases the panel to equalize the pressure between the two compartments.

A. Emergency Operation

The following steps are used to remove the door in an emergency if the latch has failed or the door has jammed. From the flight compartment,

(1) Unlock and lift the lower hinge pin

(2) Unlock and pull down on the upper hinge pin

(3) Kick the hinged side of the door towards the cabin

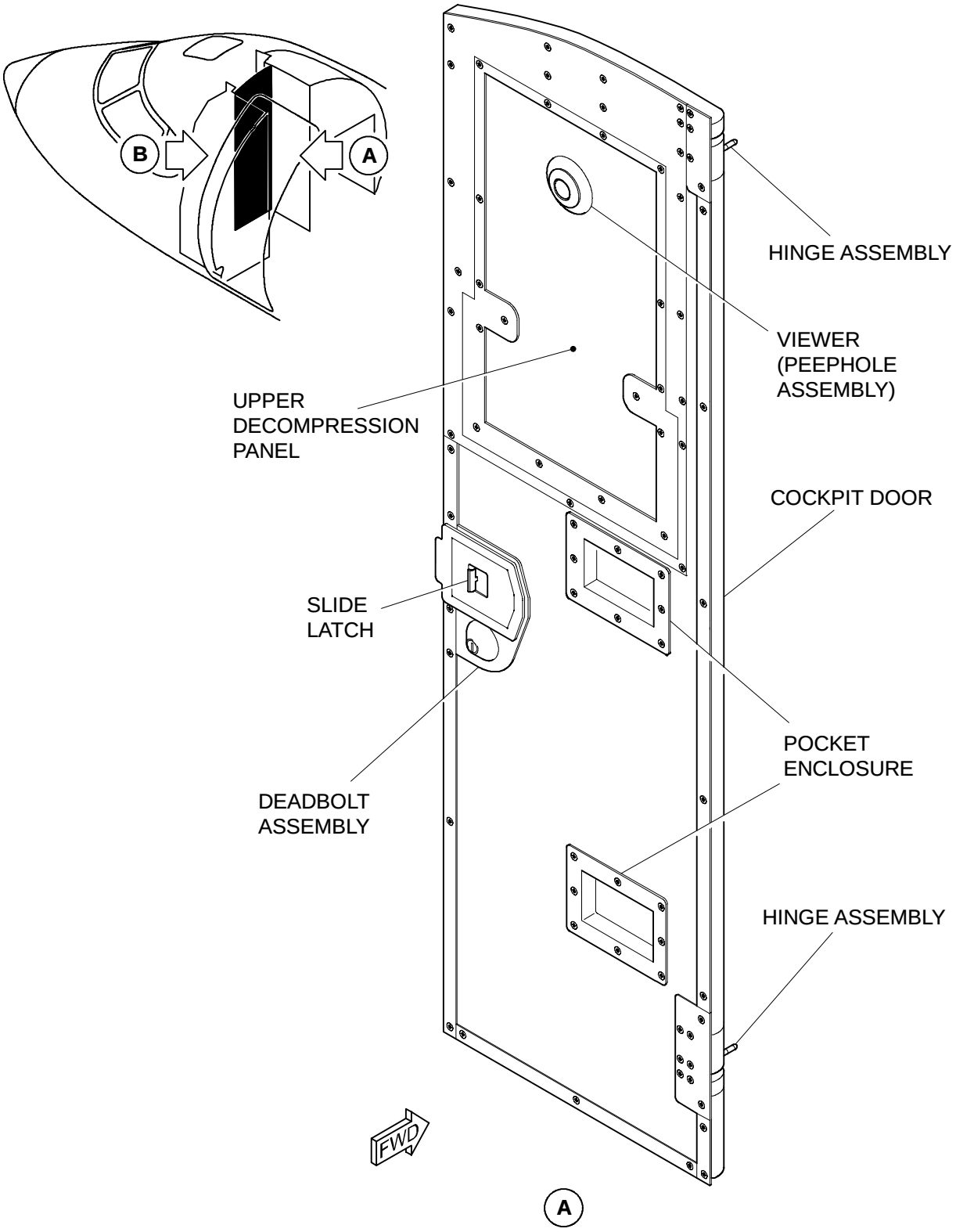
(4) When the door is free, rotate it clockwise and stow it against the galley bulkhead.

CAUTION

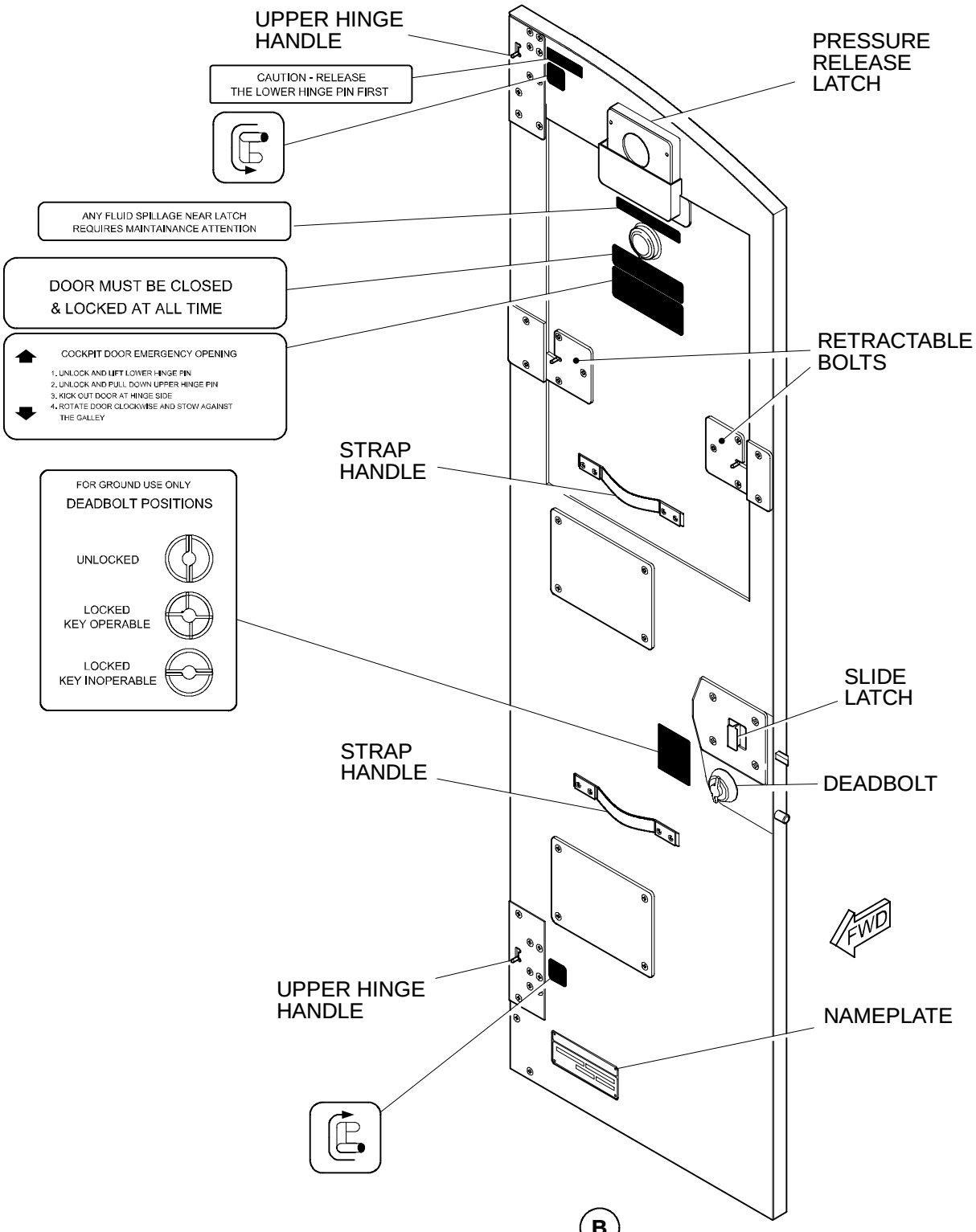
The lower hinge pin must be released before the upper hinge pin. Failure to do so could result in the door suddenly coming disengaged from the hinges causing injury to persons.

NOTE

In the event that a crew member becomes trapped in the flight compartment or becomes incapacitated, the door can be opened using a crow bar or axe.



Reinforced Cockpit Door
Figure 01–30–18 Sheet 1



Reinforced Cockpit Door
Figure 01–30–18 Sheet 2

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