TBM 960

Pilot's Information Manual

P/N DMMPIPYEE0EN - Edition 0 - Revision 04

CAUTION

This information manual is a non-official copy of the pilot's operating handbook and may be used for general information purposes only. It is not kept current and therefore cannot be used as a substitute for airworthiness authorities approved manual which is the only one intended for operation of the airplane. The list of effective pages in this manual corresponds to that of the basic Pilot's Operating Handbook.

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Section 1

General

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1.1 - General

This POH contains nine sections and includes the material required by FAR Part 23 to be furnished to the pilot for operation of the TBM airplane. It also contains supplemental data supplied by the manufacturer, in accordance with GAMA (General Aviation Manufacturers Association) standards.

Section 1 provides basic data and information of general interest. It also contains definitions or explanations of commonly used abbreviations and terminology.

Whenever this POH refers to the Garmin Integrated Flight Deck Pilot's Guide, it denotes the guide described in Subsection 2.1. General.

Whenever this POH refers to the MD302 Pilot's Guide, it denotes the guide described in Subsection 2.1. General.

The general information for complex optional systems are given in Section 9: Supplements.

The installed ADS-B OUT system has been shown to meet the equipment requirements of 14 CFR 91.227.

The installed transponder system is able to respond to interrogations in Modes A, C and S and is fully compliant with the requirements of CS ACNS.D.ELS/EHS (Mode S Elementary/Enhanced Surveillance).

The installed ADS-B OUT system is fully compliant with the requirements of CS ACNS.D.ADSB (1090 MHz Extended Squitter ADS-B OUT).

Part 135 Operations

For 14 CFR 135 operations, the TBM airplane's alternative source of electric power is capable of supplying 150 percent of the electrical loads of all required instruments and equipment for safe emergency operation of the airplane for at least one hour.

The electrical load shedding procedure provided in Section 3 of this POH must be followed to meet requirements of paragraph 14 CFR 135.163(f)(2).

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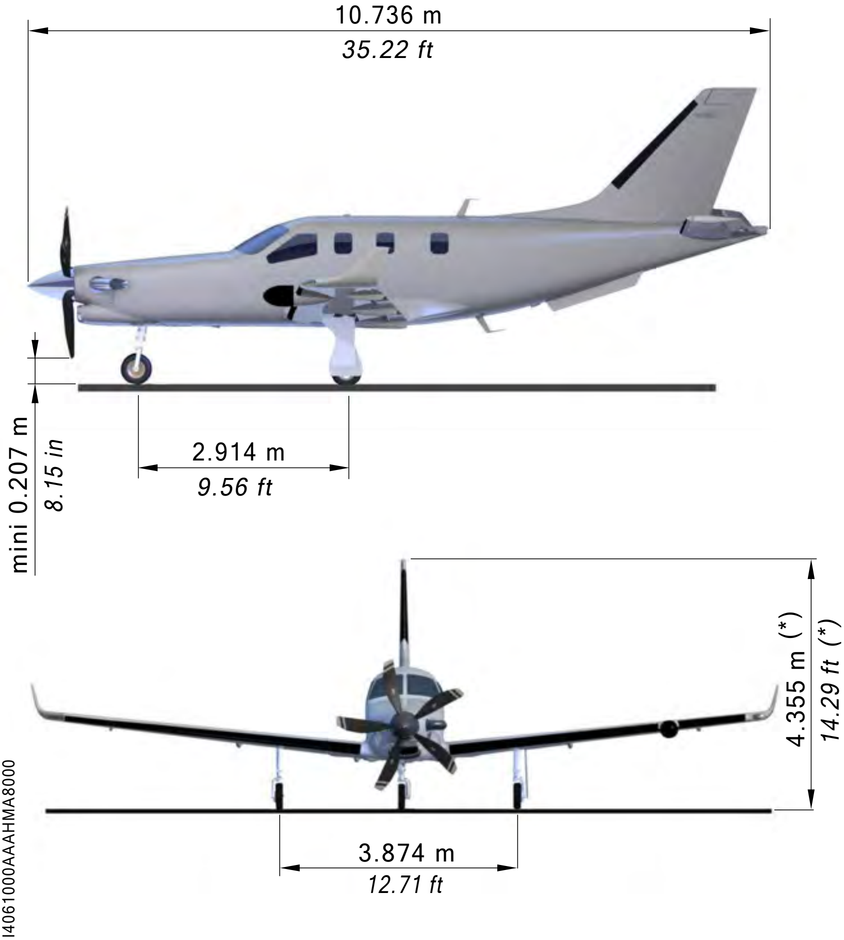
1.2 - Three View Drawing

Figure 1.2.1 - Three View Drawing (1/2)



(*) Airplane on a level surface with fully extended FWD shock absorber

Figure 1.2.2 - Three View Drawing (2/2)

1.3 - Descriptive Data

Engine

Number of engines: 1

Engine manufacturer: Pratt & Whitney Canada

Engine model number: PT6E-66XT

Engine type: Free turbine, reverse flow and two turbine sections
- Compressor type: four axial stages, one centrifugal stage
- Combustion chamber type: annular
- Turbine type: one gas generator turbine stage, two power turbine stages

Horsepower rating and propeller speed: 895 SHP (667 kW) at 1,925 RPM

The engine is electronically controlled by a Full Authority Digital Engine Control (FADEC) system.

Propeller

Number of propellers: 1

Propeller manufacturer: Hartzell

Propeller model number: 5D31-NK366B1 / 86DB01B

Number of blades: 5

Propeller diameter: 91 in (2.311 m)

Propeller type: Adjustable constant speed, with feathering and hydraulic control reverse

Propeller blade setting at 30-inch station:
- Low pitch: 19.5°
- Feathering: 86.1°
- Maximum reverse: - 9.3°

The electro-hydro-mechanical Propeller Control Unit (PCU) modulates the blade angle.

Fuel

Total capacity: 301 USG (1,140 liters)

Total capacity, each tank: 150.5 USG (570 liters)

Total usable: 292 USG (1,106 liters)

CAUTION

The fuel used must contain an anti-ice additive, in accordance with specification MIL-I-27686 or MIL-I-85470. Additive concentrations (EGME or DIEGME) shall be between a minimum of 0.06% and a maximum of 0.15% by volume. Refer to Paragraph Fuel in Subsection 8.7. for additional information.

Table 1.3.1 - Recommended Fuel Types [Reference: P&WC Engine Maintenance Manual, latest revision]

US Specification (US)	French Specification (FR)	English Specification (UK)	NATO Code
ASTM-D1655 JET A ASTM-D1655 JET A1	AIR 3405C Grade F35	DERD 2494 Issue 9	F35**
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amendment 1	F44*
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amendment 1	F34*
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43**
* Already contains an anti-ice additive. ** Requires an anti-ice additive.			

Engine Oil

System total capacity: 12.7 qt (12 liters) (oil cooler included)

Usable capacity: 6 qt (5.7 liters)

Maximum oil consumption in a 10-hour period: 0.14 qt/h (0.13 l/h) [0.3 lb/h (136 cc/h)]

Specification

Table 1.3.2 - Recommended Engine Oil Types [Reference: P&WC Engine Maintenance Manual, latest revision]

Nominal viscosity	Specification	NATO code
5cSt	MIL-PRF-23699	O-156 (STD) O-154 (HTS)

Maximum Certificated Weights

Maximum airplane weight:

Maximum Ramp Weight (MRW)	7,430 lbs to 7,650 lbs * (3,370 kg to 3,470 kg) *
Maximum Takeoff Weight (MTOW)	7,394 lbs to 7,615 lbs * (3,354 kg to 3,454 kg) *
Maximum Landing Weight (MLW)	7,110 lbs (3,225 kg)
* Depending on the C.G. position – see Figure 2.5.2	

Baggage weight:

- For weight and C.G. limits, refer to Paragraph Weight Limits in Subsection 2.5.
- For cargo loading instructions, refer to Subsection 6.3. Baggage Loading

Standard Airplane Weights

Standard empty weight: 4,784 lbs (2,170 kg)

Maximum useful load: 2,831 lbs (1,284 kg)

Cabin and Entry Dimensions

Maximum cabin width: 3.97 ft (1.21 m)

Maximum cabin length: 13.29 ft (4.05 m)

Maximum cabin height: 4 ft (1.22 m)

Number of cabin entries: 1 (standard) + 1 pilot door (if installed)

Entry width (standard): 3.54 ft (1.08 m)

Entry height (standard): 3.9 ft (1.19 m)

Pilot entry mean width: 2.3 ft (0.70 m)

Pilot entry mean height: 3.18 ft (0.97 m)

Specific Loadings

Wing loading: 39.3 lbs/ft^2 (191.9 kg/m^2)

Power loading: 8.5 lbs/SHP (3.86 kg/SHP)

1.4 - Abbreviations and Terminology

Meteorological Terminology

ISA	International Standard Atmosphere
IMC	Instrument Meteorological Conditions
VMC	Visual Meteorological Conditions
OAT	Outside Air Temperature
SAT	Static Air Temperature
QFE	Atmospheric pressure at the airport reference point.
QNH	Atmospheric pressure at sea level, at airplane position.
Standard temperature	15 °C (59 °F) at sea level pressure altitude, decreasing by 2 °C (3.6 °F) for each 1,000 ft of altitude.
Pressure altitude	The altitude read from an altimeter when the altimeter's barometric scale has been set to 29.92 inches of mercury (1,013.2 hPa).

General Airspeed Terminology and Symbols

KCAS	**Knots Calibrated Airspeed**: the indicated airspeed expressed in knots corrected for position and instrument error. Knots calibrated airspeed is equal to KTAS in standard atmosphere at sea level.
KIAS	**Knots Indicated Airspeed**: the speed shown on the airspeed indicator and expressed in knots.
KTAS	**Knots True Airspeed**: the airspeed expressed in knots relative to undisturbed air which is KCAS corrected for altitude and temperature.
V_A	**Maneuvering Speed**: the maximum speed at which full or abrupt control movements may be used.
V_{FE}	**Maximum Flap Extended Speed**: the highest speed permissible with wing flaps in a prescribed extended position.
V_{LE}	**Maximum Landing Gear Extended Speed**: the maximum speed at which an airplane can be safely flown with the landing gear extended.
V_{LO}	**Maximum Landing Gear Operating Speed**: the maximum speed at which the landing gear can be safely extended or retracted.

V_{MO}	**Maximum Operating Speed**: the speed limit that may not be deliberately exceeded in normal flight operations.
V_R	**Rotation Speed**: the speed at which rotation is initiated during takeoff to achieve takeoff safety speed at screen height.
V_{S0}	**Stalling Speed**: the minimum steady flight speed at which the airplane is controllable **in the landing configuration**.
V_{S1}	**Stalling Speed**: the minimum steady flight speed obtained **in a specific configuration**.
V_X	**Best Angle of Climb Speed**: the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.
V_Y	**Best Rate of Climb Speed**: the airspeed which delivers the greatest gain in altitude in the shortest possible time.

Power Terminology

Recovery altitude	Maximum altitude at which it is possible, in standard temperature conditions, to maintain a specified power.
Hot start	Engine start or attempt to start that causes the interturbine temperature to be higher than the maximum value permissible during start.
Flameout	Involuntary loss of the combustion chamber flame during operation.
GPU	Ground Power Unit
Feathering	Action which reduces the drag of a propeller by positioning blades at the pitch angle creating minimal drag.
Maximum Cruise Power	Power developed in relation to outside flight level and temperature conditions.
Ng	Gas generator RPM
Np	Propeller rotation speed
Reverse	Drag produced when the propeller blade setting is negative.
RPM	Revolutions Per Minute
SHP	Shaft Horsepower
TRQ	Torque

Airplane Performance and Flight Planning Terminology

Climb gradient	The ratio of the change in height during a portion of climb to the horizontal distance traversed during the same time interval.

Demonstrated crosswind velocity	The velocity of the crosswind component for which adequate control of the airplane during takeoff and landing was actually demonstrated during certification tests. The value shown is not considered to be limiting.
g	The force of gravity or acceleration.
Usable fuel	Total fuel that can be effectively consumed by the engine.
D_{50}	Takeoff or landing distance over a 50-foot (15-meter) obstacle

Weight and Balance Terminology

Reference datum	Datum perpendicular to the longitudinal airplane centerline from which all distances are measured for weight and balance purposes.
Arm	The distance from the reference datum to the center of gravity (C.G.) of an item.
Moment	The product of the weight of an item multiplied by its arm.
Center of gravity	Airplane balance point. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane.
C.G. limits	The extreme center of gravity locations within which the airplane must be operated at a given weight.
Standard empty weight	Weight of a standard airplane, including unusable fuel and full operating fluids (oil and hydraulic fluids).
Basic empty weight	Standard empty weight plus optional equipment.
Useful load	The difference between maximum ramp weight and the basic empty weight.
Maximum Ramp Weight	The maximum weight approved for ground maneuver. It includes the weight of start, taxi and run up fuel.
Maximum Takeoff Weight	The maximum weight approved at the beginning of the takeoff run.
Maximum Landing Weight	The maximum weight approved for landing touchdown.

General Abbreviations

A	Ampere
A/C	Air Conditioning
ADC	Air Data Computer

AGL	Above Ground Level
AIL TRIM	Aileron TRIM
ALTI	Altimeter
ALT SEL	Altitude Selection
AMP	Ampere
AMPS	Amperes
AoA	Angle of Attack
AT	Autothrottle
ATIS	Automatic Terminal Information Service
AUTO SEL	Auto Selector
AUX BP	Auxiliary Boost Pump
BAT	Battery
BRT	Brightness
°C	Degrees Celsius
CAS	Crew Alerting System
CAS	Calibrated Airspeed
cc/h	Cubic Centimeter per Hour
C.G.	Center of Gravity
CONT	Control
cu.ft	Cubic Feet
DCTU	Data Collection and Transmission Unit
DIEGME	Diethylene Glycol Monomethyl Ether
DISC	Disconnect
DN	Down
ECS	Environmental Control System
EDM	Emergency Descent Mode
EGME	Ethylene Glycol Monomethyl Ether
EIS	Engine Indication System
EMER	Emergency
ESP	Electronic Stability Protection
ESS BUS TIE	Essential Bus Tie
EXT LIGHTS	External Lights
°F	Degrees Fahrenheit
FADEC	Full Authority Digital Engine Control

FCU	Fuel Control Unit
FF	Fuel Flow
FL	Flight Level
FOB	Fuel on Board
FPL	Flight Plan
ft	Feet
ft/min	Feet per Minute
FWD	Forward
G	Green
GIA	Garmin Integrated Avionics Unit
GIFD	Garmin Integrated Flight Deck
GMA	Garmin Audio Panel System
GR	Ground Roll
GTC	Garmin Touchscreen Controller
h	Hour
HI	High
HP	High Pressure
hPa	Hectopascal
HTR	Heater
HTRS	Heaters
IAS	Indicated Airspeed
IGNIT	Ignition
in	Inch / Inches
INDIC	Indicator
INERT SEP	Inertial Separator
in.Hg	Inches of Mercury
in.lbs	Inch-pounds
INSTR	Instrument
INT LIGHTS	Interior Lights
ITT	Interturbine Temperature
kg	Kilogram
kg/h	Kilogram per Hour
kg/m^2	Kilograms per Square Meter
kg/SHP	Kilogram per Shaft Horsepower

kt	Knot (1 nautical mile per hour - 1,852 meters per hour)
kW	Kilowatt
l	Liter
L	Left
lb	Pound
lb/h	Pounds per Hour
lbs	Pounds
lbs/ft^2	Pounds per Square Foot
lbs/SHP	Pounds per Shaft Horsepower
LCD	Liquid Crystal Display
L/D	Lift to Drag Ratio
LDG	Landing
LDG GR	Landing Gear
LDR	Lightweight Data Recorder
LFE	Landing Field Elevation
l/h	Liter per Hour
L.H.	Left Hand
LO	Low
LP	Low Pressure
LRCR	Long Range Cruise
LRN	Long Range Navigation
LTS TEST	Lights Test
LVL	Level
m	Meter
M	Mach Number
MAC	Mean Aerodynamic Chord
MAIN GEN	Main Generator
MAN	Manual
MAX RPM	Maximum Revolutions per Minute
mb	Millibar
MFD	Multifunction Display
min	Minute
MIN	Minimum
m.kg	Kilogram-meters

MLW	Maximum Landing Weight
mm	Millimeter
MPH	Miles per Hour
MRW	Maximum Ramp Weight
MTOW	Maximum Takeoff Weight
MXCL	Maximum Climb
MXCR	Maximum Cruise
MZFW	Maximum Zero Fuel Weight
NM	Nautical Mile
NORM	Normal
PCU	Propeller Control Unit
PFD	Primary Flight Display
PRESS	Pressure
PROP	Propeller
psi	Pounds per Square Inch
PSIG	Pounds per Square Inch Gauge
qt	Quart (¼ USG)
qt/h	Quart per Hour
QTY	Quantity
R	Right
RCR	Recommended Cruise
R.H.	Right Hand
RUD	Rudder
s	Second
SEI	Single Engine Indicator
SEL	Selector
SIG	Signalization
SL	Sea Level
S/N	Serial Number
SPKR	Speaker
STALL HTR	Stall Warning Heater
ST-BY	Standby
Std	Standard
STPD	Standard Temperature Pressure Dry

T°	Temperature
TAS	True Airspeed
TEMP	Temperature
TO	Takeoff
TURN COORD	Turn Coordinator
USG	Gallon U.S
USG/h	Gallon U.S per Hour
USP	Under Speed Protection
V	Volt
VSI	Vertical Speed Indicator
W	Watt
WARN	Warning
W/S	Windshield

Radio Navigation Abbreviations

ADF	Automatic Direction Finder System
ADS-B	Automatic Dependent Surveillance-Broadcast
AFCS	Automated Flight Control System
AIRAC	Aeronautical Information Regulation and Control
AP	Autopilot
APR	Approach
ATC	Air Traffic Control
Baro-VNAV	Barometric Vertical NAVigation
CDI	Course Deviation Indicator
COM	Communications Transceivers
DA	Decision Altitude
DH	Decision Height
DME	Distance Measuring Equipment
DR	Dead Reckoning
ELT	Emergency Locator Transmitter
FAF	Final Approach Fix
FD	Flight Director
FDE	Fault Detection and Exclusion
FMS	Flight Management System
GNSS	Global Navigation Satellite System

GP	Glide Path
GPS	Global Positioning System
GS	Glide Slope
HSI	Horizontal Situation Indicator
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
LNAV	Lateral NAVigation
LNAV+V	Lateral NAVigation and Vertical
LOC	Localizer
LPV	Localizer Performance with Vertical Guidance
MAP	Missed Approach Point
MDA	Minimum Descent Altitude
NAV	Navigation Indicators or Receivers
NDB	Non-Directional Beacon
RAIM	Receiver Autonomous Integrity Monitoring
RF Legs	Radius to Fix Legs
RNAV	Area NAVigation
RNP	Required Navigation Performance
RVSM	Reduced Vertical Separation Minimum
SBAS	Satellite Based Augmentation System
STAR	Standard Terminal Arrival Route
TAS	Traffic Advisory System
TAWS	Terrain Awareness Warning System
VDI	Vertical Deviation Indicator
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VNAV	Vertical NAVigation
VOR	VHF Omnidirectional Range
VOR/LOC	VHF Omnidirectional Range LOCalizer
WFDE	WAAS Fault Detection and Exclusion
WGS	World Geodetic System
XPDR	Transponder

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1.5 - Conversion Factors

Table 1.5.1 - Imperial and U.S Units to Metric Units

Imperial and U.S units to metric units			Metric units to Imperial and U.S units		
Multiply	By	To obtain	Multiply	By	To obtain
feet	0.3048	meters	meters	3.2808	feet
inches	25.4	mm	mm	0.03937	inches
Imp.Gal	4.546	liters	liters	0.220	Imp.Gal
USG	3.785	liters	liters	0.264	USG
lbs	0.45359	kg	kg	2.2046	lbs

Figure 1.5.1 - Feet to Meters

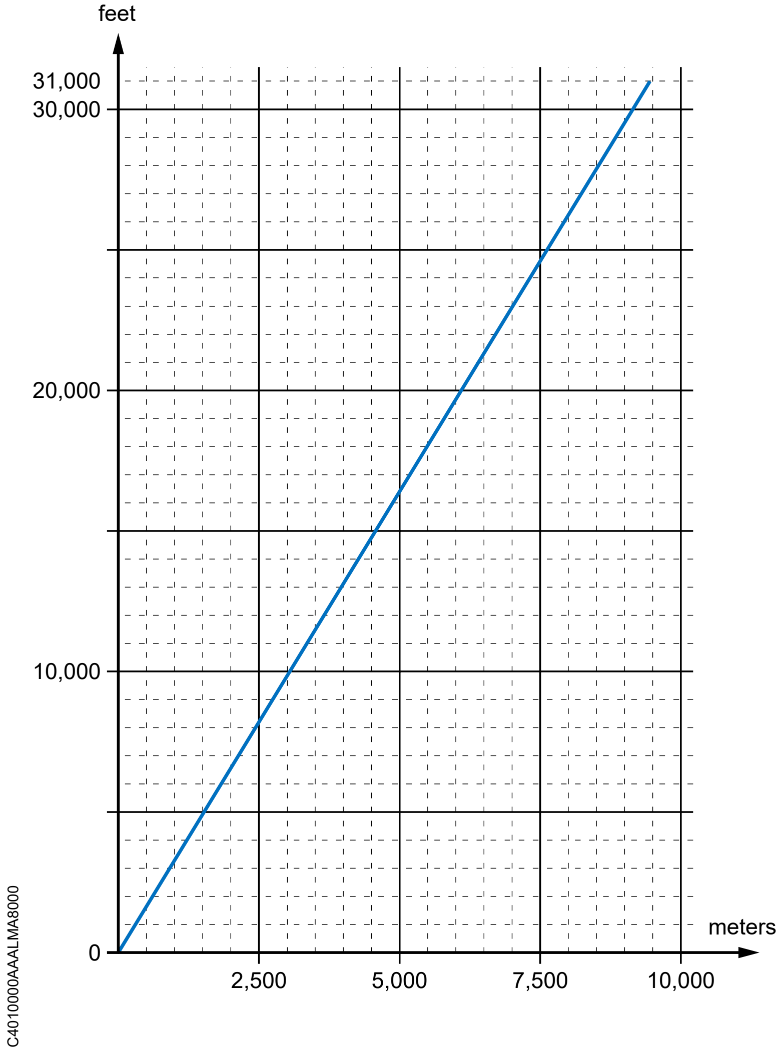


Figure 1.5.2 - Inches to Millimeters

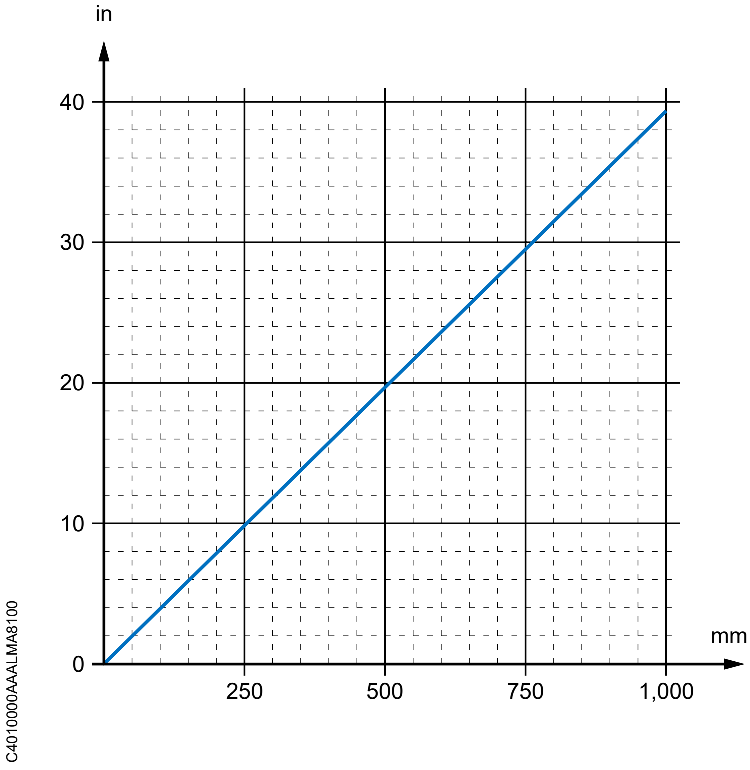
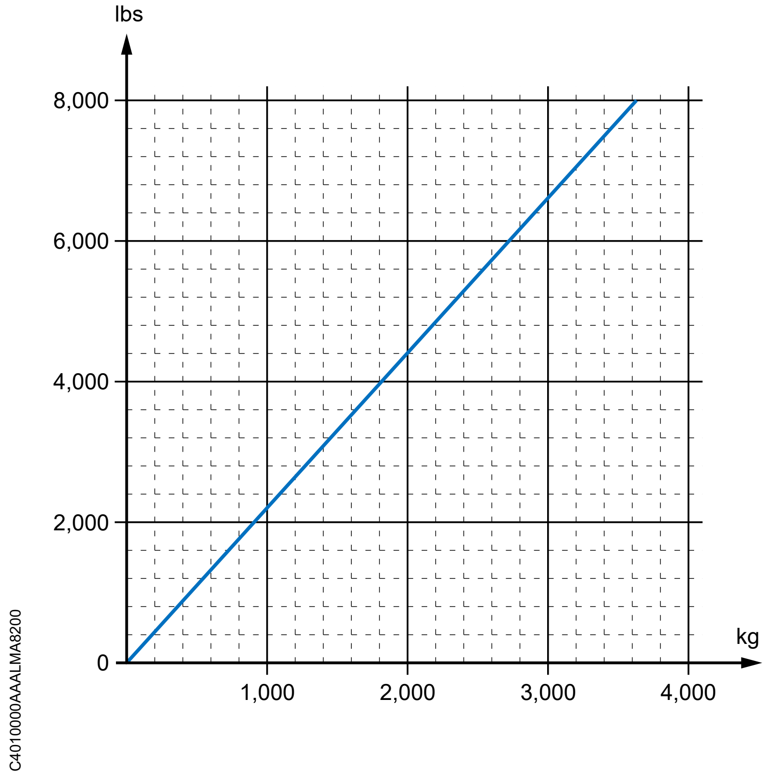


Figure 1.5.3 - Pounds to Kilograms



1.6 - Pressure and Standard Atmosphere

Standard Atmosphere

Table 1.6.1 - Standard Atmosphere

Pressure altitude (ft)	Pressure (hPa)	°C	°F
0	1,013.2	+ 15.0	+ 59.0
2,000	942.1	+ 11.0	+ 51.8
4,000	875.0	+ 7.0	+ 44.6
6,000	811.9	+ 3.1	+ 37.6
8,000	752.6	- 0.8	+ 30.5
10,000	696.8	- 4.8	+ 23.4
12,000	644.3	- 8.7	+ 16.2
14,000	595.2	- 12.7	+ 9.2
16,000	549.1	- 16.6	+ 2.2
18,000	505.9	- 20.6	- 5.0
20,000	465.6	- 24.6	- 12.4
22,000	427.8	- 28.5	- 19.3
24,000	392.6	- 32.5	- 26.5
26,000	359.8	- 36.5	- 33.6
28,000	329.3	- 40.4	- 40.7
30,000	300.8	- 44.4	- 47.8
31,000	287.4	- 46.4	- 51.6

Pressure Conversion Table

NOTE

The standard pressure of 1,013.2 hPa is equal to 29.92 inches of mercury.

Table 1.6.2 - Pressure Conversion Table – hPa versus in.Hg

950 28.05	951 28.08	952 28.11	953 28.14	954 28.17	955 28.20	956 28.23	957 28.26	958 28.29	959 28.32
960 28.35	961 28.38	962 28.41	963 28.44	964 28.47	965 28.50	966 28.53	967 28.56	968 28.58	969 28.61
970 28.64	971 28.67	972 28.70	973 28.73	974 28.76	975 28.79	976 28.82	977 28.85	978 28.88	979 28.91
980 28.94	981 28.97	982 29.00	983 29.03	984 29.06	985 29.09	986 29.12	987 29.15	988 29.18	989 29.20
990 29.23	991 29.26	992 29.29	993 29.32	994 29.35	995 29.38	996 29.41	997 29.44	998 29.47	999 29.50
1,000 29.53	1,001 29.56	1,002 29.59	1,003 29.62	1,004 29.65	1,005 29.68	1,006 29.71	1,007 29.74	1,008 29.77	1,009 29.80
1,010 29.83	1,011 29.85	1,012 29.88	1,013 29.91	1,014 29.94	1,015 29.97	1,016 30.00	1,017 30.03	1,018 30.06	1,019 30.09
1,020 30.12	1,021 30.15	1,022 30.18	1,023 30.21	1,024 30.24	1,025 30.27	1,026 30.30	1,027 30.33	1,028 30.36	1,029 30.39
1,030 30.42	1,031 30.45	1,032 30.47	1,033 30.50	1,034 30.53	1,035 30.56	1,036 30.59	1,037 30.62	1,038 30.65	1,039 30.68
1,040 30.71	1,041 30.74	1,042 30.77	1,043 30.80	1,044 30.83	1,045 30.86	1,046 30.89	1,047 30.92	1,048 30.95	1,049 30.98

Section 2

Limitations

Table of Contents

2.1 - General

TBM 960 is the trade name of the TBM 700 N variant airplane (TBM 700 type), which is certified in the normal category.

This airplane must be flown in compliance with the limits specified by placards or markings and with those given in this section and throughout the POH.

The Garmin G3000 Integrated Flight Deck Pilot's Guide, No. 190-02923-00, or any later version as applicable, must be readily available to the pilot and permanently kept in the airplane with the POH.

The Pilot's Guide for MD302 Standby Attitude Module P/N 9017846 Rev G or any later version as applicable, must be permanently kept in the airplane with the POH.

Departure into IMC is not authorized if the MD302 battery fails its initial capacity check with associated message:

WARNING
INTERNAL BATTERY MAY PROVIDE LESS THAN 60 MINUTES OF OPERATION

or if there is a red “X” over the battery symbol at MD302 initialization.

This section of the airplane POH presents the various operating limitations, the significance of such limitations, instrument markings, color coding, and basic placards necessary for the safe operation of the airplane, its powerplant and installed equipment.

The limitations included in this section have been approved by the Federal Aviation Administration in accordance with 14 CFR section 21.29.

The limitations for some optional systems are given in Section 9: Supplements of the POH.

TBM 700 airplane is certified under EASA.A.010 and FAA N° A60EU Type Certificates.

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2.2 - Airspeed Limitations

Airspeed limitations and their operational significance are shown in Table 2.2.1.

Table 2.2.1 - Airspeed Limitations

Speed		KCAS	KIAS	Remarks
V_{MO}	Maximum operating speed	271	266	Do not intentionally exceed this speed in normal flight category
V_A	Maneuvering speed	160	158	Do not make abrupt or full control movements above this speed
V_{FE}	Maximum flaps extended speed:			Do not exceed these speeds depending on flaps position
	Landing configuration	120	122	
	Takeoff configuration	180	178	
V_{LO}	Maximum landing gear operating speed:			Do not extend or retract landing gear above this speed
	Extension	180	178	
	Retraction	151	150	
	Emergency extension	151	150	
V_{LE}	Maximum landing gear extended speed	180	178	Do not exceed this speed with landing gear extended

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2.3 - Powerplant Limitations

Engine

Number of engines: 1

Engine manufacturer: Pratt & Whitney Canada

Engine model number: PT6E-66XT

Torque limitations:

- 103% at Np = 1,925 RPM,
- 103% < TRQ ≤ 118% acceptable for maximum 20 seconds.

Ng limitations:

- 104%,
- 104% ≤ Ng ≤ 104.3% acceptable for maximum 20 seconds.

Np limitation:

1,925 RPM -20/+30 RPM

ITT limitations:

- Engine running:
  - Maximum continuous: 850 °C,
  - 850 °C < ITT ≤ 900 °C acceptable for maximum 20 seconds.

NOTE

During normal operation, the power settings are defined by the FADEC to maintain ITT below 840 °C.

- During start:
  - 850 °C,
  - 850 °C < ITT ≤ 900 °C acceptable for maximum 20 seconds,
  - 900 °C < ITT ≤ 1,000 °C acceptable for maximum 5 seconds.

Oil

CAUTION

Do not mix different viscosities or specifications of oil as their different chemical structure can make them incompatible.

Maximum oil temperature: 104 °C. A transient oil temperature up to 110 °C is acceptable for maximum 10 minutes.

Minimum oil temperature for takeoff: 0 °C.

Oil pressure:

- Minimum: 60 psi. A transient oil pressure down to 40 psi is acceptable for maximum 20 seconds.
- Maximum: 135 psi. A transient oil pressure up to 175 psi is acceptable for maximum 20 seconds.

Normal oil pressure is 100 to 135 psi. Oil pressures under 100 psi are undesirable. Under emergency conditions, to complete a flight, an oil pressure between 60 and 100 psi is permitted at reduced power level not exceeding 45% torque. Oil pressures below 60 psi are unsafe and require that either the engine be shut down or a landing be made as soon as possible using the minimum power required to sustain flight.

Oil capacity:

- System total capacity: 12.7 qt (12 liters), oil cooler included,
- Usable capacity: 6 qt (5.7 liters).

Fuel

Fuel limitations:

- Two tanks: 150.5 USG (570 liters) each
- Total fuel: 301 USG (1,140 liters)
- Usable fuel: 292 USG (1,106 liters)
- Unusable fuel: 9 USG (34 liters)
- Maximum fuel imbalance: 15 USG (57 liters)

NOTE

The quantity of usable fuel can be safely utilized during all normal airplane maneuvers.

CAUTION

The fuel used must contain an anti-ice additive, in accordance with specification MIL-I-27686 or MIL-I-85470. Additive concentrations (EGME or DIEGME) shall be between a minimum of 0.06% and a maximum of 0.15% by volume. Refer to Paragraph Fuel in Subsection 8.7. for additional information.

CAUTION

Maximum sideslip duration is 30 seconds.

Table 2.3.1 - Recommended Fuel Types [Reference: P&WC Engine Maintenance Manual, latest revision]

US Specification (US)	French Specification (FR)	English Specification (UK)	NATO Code
ASTM-D1655 JET A ASTM-D1655 JET A1	AIR 3405C Grade F35	DERD 2494 Issue 9	F35**
MIL-DTL-5624 Grade JP-5	AIR 3404C Grade F44	DERD 2452 Issue 2 Amendment 1	F44*
MIL-DTL-83133 Grade JP-8	AIR 3405C Grade F34	DERD 2453 Issue 4 Amendment 1	F34*
	AIR 3404C Grade F43	DERD 2498 Issue 7	F43**
* Already contains an anti-ice additive. ** Requires an anti-ice additive.			

Propeller

Number of propellers: 1

Propeller manufacturer: Hartzell

Propeller model number: 5D31-NK366B1 / 86DB01B

Propeller diameter: 91 in (2.311 m)

Propeller blade setting at 30-inch station:

- Low pitch: 19.5°
- Feathering: 86.1°
- Maximum reverse: - 9.3°

Full Authority Digital Engine Control (FADEC)

- Takeoff is not allowed when NO DISPATCH is displayed in the CAS window.

- Airplane dispatch is allowed when LMTD DISPATCH is displayed in the CAS window.

  The fault must be repaired within 50 flight hours after the message's first appearance. The full duration of the flight after which LMTD DISPATCH first appeared must be counted when calculating the 50-flight-hour time period.

  Calculating the 50-flight-hour time period is the pilot's responsibility.

2.4 - Starter Operation Limits

Starter operation sequence is limited as follows:

- Automatically by the FADEC to 80 seconds.
- For manual dry motoring to 30 seconds.

NOTE

On start, the FADEC automatically performs a dry motoring after an aborted start (commanded by the FADEC or by pilot action). The FADEC limits the use of starter to a total duration of 80 seconds, including dry motoring and start sequences.

Should several start-up sequences be necessary, respect the following spacings between attempts:

- Between 1st and 2nd sequence: wait for 1 minute.
- Between 2nd and 3rd sequence: wait for 5 minutes.
- Between 3rd and 4th sequence: wait for 30 minutes.

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2.5 - Weight and C.G. Limits

Weight Limits

Maximum airplane weight:

Maximum Ramp Weight (MRW)	7,430 lbs to 7,650 lbs * (3,370 kg to 3,470 kg) *
Maximum Takeoff Weight (MTOW)	7,394 lbs to 7,615 lbs * (3,354 kg to 3,454 kg) *
Maximum Landing Weight (MLW)	7,110 lbs (3,225 kg)
Maximum Zero Fuel Weight (MZFW)	6,252 lbs (2,836 kg)
* Depending on the C.G. position – see Figure 2.5.2	

NOTE

The Maximum Takeoff Weight of 3,454 kg is valid only for C.G. between 34.4% and 34.7%.
The Maximum Takeoff Weight of 3,354 kg is valid only for C.G. at 23.8%.
The Maximum Takeoff Weight increases linearly from 3,354 kg to 3,454 kg between 23.8% and 34.4% of C.G.. For example, MTOW = 3,394 kg for C.G. at 28% – see Figure 2.5.2.

Maximum baggage weight:

- in the front baggage compartment (non pressurized): 110 lbs (50 kg)

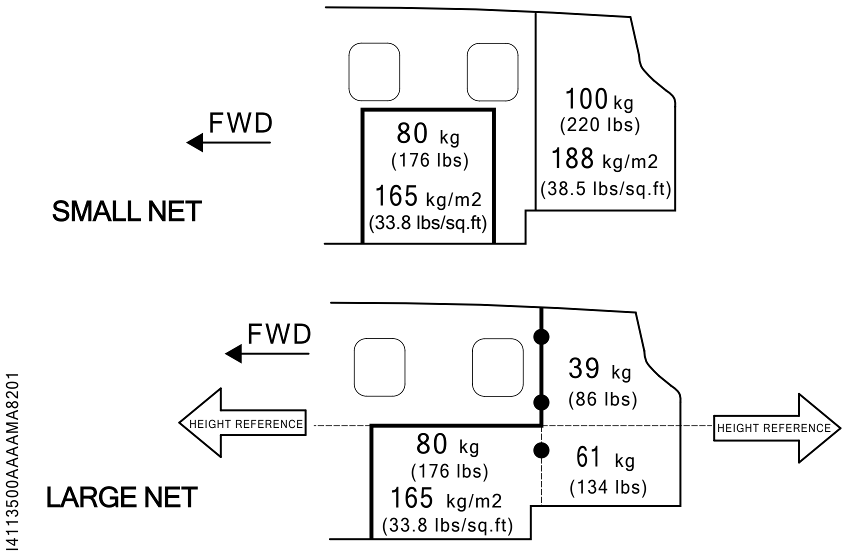
>> *With 6-seat accommodation*

- in rear part of pressurized cabin: 220 lbs (100 kg)

>> *With 4-seat accommodation*

- in rear part of pressurized cabin: 396 lbs (180 kg), with small or large net – see Figure 2.5.1

Figure 2.5.1 - Baggage Limits



C.G. Limits

Center of gravity range with landing gear down and flaps up, attitude 0°:

- Forward limits:
  - 181.3 in (4.604 m) aft of datum at 4,409 lbs (2,000 kg) or less (14% of MAC)
  - 183.6 in (4.664 m) aft of datum at 6,250 lbs (2,835 kg) (18% of MAC)
  - 185.3 in (4.707 m) aft of datum at 6,579 lbs (2,984 kg) (20.85% of MAC)
  - 187.1 in (4.752 m) aft of datum at 7,024 lbs (3,186 kg) (23.8% of MAC)
  - 187.1 in (4.752 m) aft of datum at 7,394 lbs (3,354 kg) (23.8% of MAC)
  - 193.4 in (4.912 m) aft of datum at 7,615 lbs (3,454 kg) (34.4% of MAC)
- Aft limits:
  - 193.6 in (4.916 m) aft of datum at 7,615 lbs (3,454 kg) (34.7% of MAC)
  - 193.7 in (4.921 m) aft of datum at 7,394 lbs (3,354 kg) (35% of MAC)
  - 194.0 in (4.928 m) aft of datum at 6,986 lbs (3,169 kg) (35.5% of MAC)

Reference datum: 118.1 in (3 m) in front of the firewall front face.

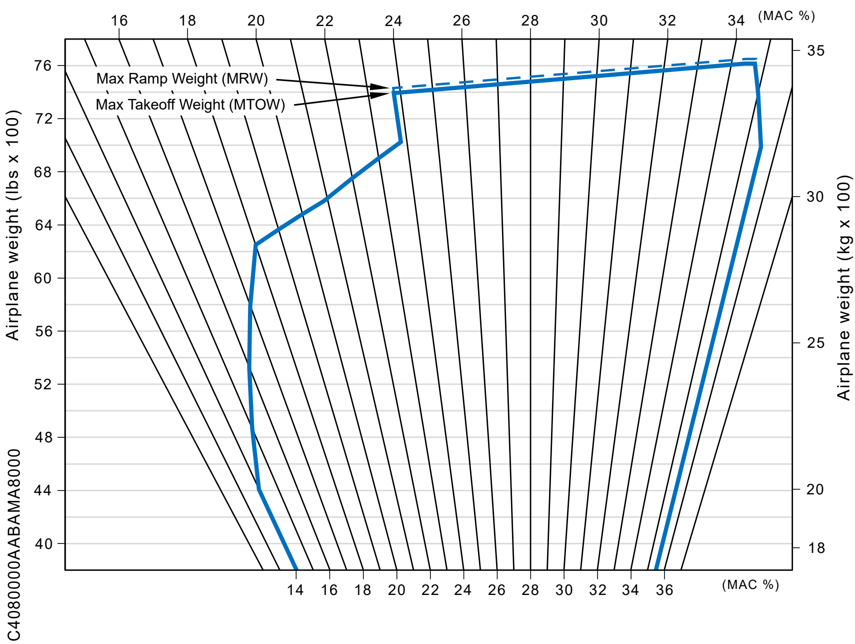
Straight line variation between points.

Leveling point: cabin floor rails.

NOTE

It is the responsibility of the pilot to ensure that the airplane is properly loaded. Refer to Subsection 6.1. General for proper loading instructions.

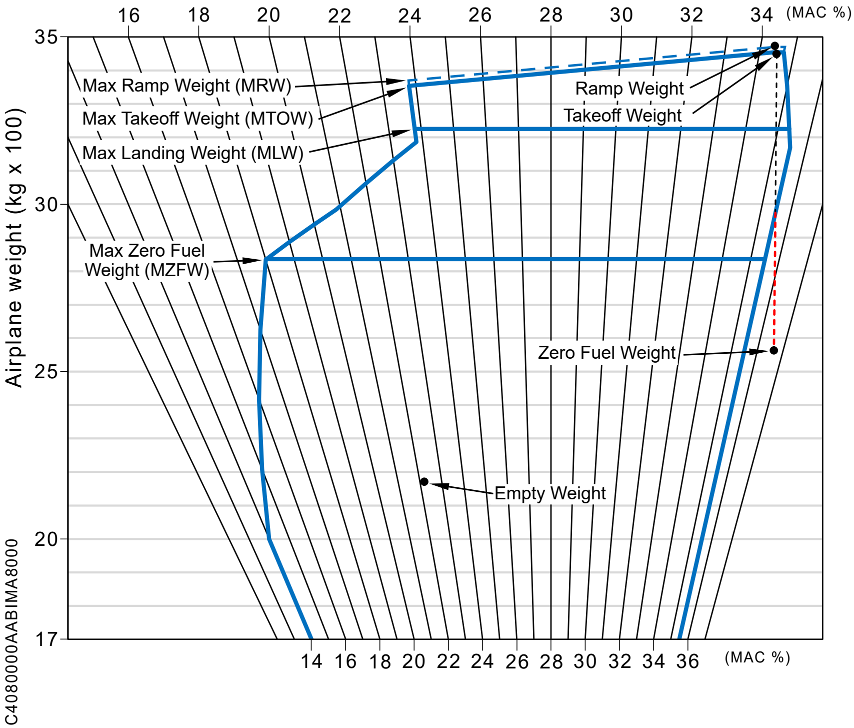
Figure 2.5.2 - C.G. Limits



WARNING

For airplane with C.G. between 28% and 34.7% at takeoff, fuel consumption during flight will move the C.G. rearwards. This is to be taken into account to remain inside the C.G. limits.
See an example of C.G. moving outside the limits in Figure 2.5.3 (red dashed line).

Figure 2.5.3 - Example of C.G. Outside the Limits when Fuel on Board Decreases



2.6 - Operation Limits

Maneuver Limits

This airplane is certified in the normal category.

The normal category is applicable to airplanes intended for non-aerobatic operations.

Non-aerobatic operations include any maneuvers incidental to normal flying, stalls (except whip stalls), lazy eights, chandelles, and steep turns in which the angle of bank is no more than 60°.

WARNING

Aerobatic maneuvers, including spins, are not approved.

Temperature Limits

Minimum temperature at start and takeoff: -40 °C (-40 °F)

Maximum temperature at start and takeoff: ISA + 37 °C (+ 67 °F) from 0 to 8,000 ft pressure altitude.

Maximum temperature in flight:

- ISA + 37 °C (+ 67 °F) from 0 to 8,000 ft pressure altitude,
- ISA + 30 °C (+ 54 °F) above 8,000 ft pressure altitude.

Flight Load Factor Limits

Flaps Up

Weight below 6,579 lbs (2,984 kg): -1.5 < n < +3.8 g

Weight above 6,579 lbs (2,984 kg): -1.5 < n < +3.5 g

Flaps Down

-0 < n < +2.0 g

CAUTION

Intentional negative load factors are prohibited.

Generator Limits

Generator load must be below 200 A when the airplane is on the ground.

GFC 700 Autopilot Limits

- During autopilot operation, a pilot with seat belt fastened must be seated at the left or right position.
- The autopilot and yaw damper must be OFF during takeoff and landing.
- Do not engage autopilot below 1,000 ft (300 m) AGL in cruise or climb.
- Do not use autopilot in approach below 200 ft (60 m) AGL.

NOTE

Do not use the autopilot in descent below 2,000 ft (600 m) AGL with a vertical speed in excess of 2,000 ft/min.

Autothrottle (AT) Limits

- Do not engage autothrottle for taxi.
- Do not engage autothrottle below 1,000 ft (300 m) AGL in case of takeoff without autothrottle.
- Do not engage autothrottle during landing and touch and go.
- Disengage autothrottle if speed is not controlled within ± 5 KIAS range.
- Do not engage autothrottle when autopilot is coupled with the flight director on PFD2 (XFR right).
- For approaches, the SPD source switch must be in MAN mode or the autothrottle must be disengaged. The autothrottle must be disengaged before 200 ft (60 m) AGL.

HomeSafe Emergency Function

HomeSafe must be activated only when the pilot is incapacitated.

WARNING

HomeSafe deactivation must be performed by a pilot who is:

- **fully capable of flying the airplane, and**
- **fully aware of all actions needed to be performed in reconfiguring the airplane (the flight plan in the FMS is lost, the landing gear and flap positions may not agree with the lever positions for the landing gear and flaps).**

If the pilot is no longer incapacitated and is able to fly the airplane, he/she must deactivate HomeSafe before taking control of the airplane.

The airplane must be inspected by maintenance personnel before further flight if HomeSafe completes a landing.

GNSS (GPS/SBAS) Navigation Equipment Approvals

The Garmin GNSS navigation system installed in this airplane:

- is a GPS system with a Satellite Based Augmentation System (SBAS) comprised of:
  . two TSO-C145d Class 3 approved Garmin GIAs,
  . TSO-C146d Class 3 approved Garmin GDUs Display Units,
  . Garmin GA36 and GA37 antennas,
  . GPS software version 7.0 or later approved version.
- is installed in this airplane in accordance with AC 20-138A,
- is, as installed in this airplane, approved for navigation using GPS and GPS/SBAS (within the coverage of a SBAS complying with ICAO Annex 10) for IFR enroute, terminal area, and RNP APCH operations (to LNAV, LNAV/VNAV and LPV minima),
- is, as installed in this airplane, complying with the equipment, performance, and functional requirements to conduct RNAV and RNP operations in accordance with the applicable requirements of the reference documents listed in the following table.

NOTE

Depending on the area of navigation, an operational approval may be required to use the navigation performance that are detailed in the table hereafter. The pilot is responsible to ensure compliance with current operational requirements.

This table is accurate at the time it was published.

Table 2.6.1 - GNSS Operational Requirements

Phase of flight	Approved PBN Capability	Operational limitations	Reference Documents	ICAO Flight Plan Code		Notes
				Item 10a Code	Item 18 PBN /	
En-route, Oceanic and Remote continental (Class II Navigation)	RNAV 10 RNP 10	GNSS FDE availability must be verified prior to flight. Maximum predicted FDE unavailability is 34 minutes. See Note 1 Two GNSS systems required to be operational. See Note 2	FAA AC 90-105A	R	A1	Additional communication and surveillance equipment may be required to obtain operational approval to utilize RNP 10 / RNAV 10 performance.
En-route continental, Arrival	RNAV 5 (formerly designated as B-RNAV)	One GNSS system required to be operational.	JAA AMJ 20X2	R	B2	
En-route, Oceanic and Remote continental (Class II Navigation)	RNP 4	GNSS FDE availability must be verified prior to flight. Maximum predicted FDE unavailability is 25 minutes. See Note 1 Two GNSS systems required to be operational. See Note 2	FAA AC 90-105A	R	L1	Additional communication and surveillance equipment may be required to obtain operational approval to utilize RNP 4 performance.
Departure En-route continental, Arrival	RNAV 2 / RNAV 1	One GNSS system required to be operational,	JAA TGL-10 FAA AC 90-105A	R	C2 / D2	
Domestic, Offshore, Oceanic and Remote continental	RNP 2	GNSS FDE availability must be verified prior to oceanic or remote continental flight. Maximum predicted FDE unavailability is 5 minutes. Two GNSS systems required to be operational. See Note 2 Only one operational GNSS system required for domestic and offshore operations areas.	FAA AC 90-105A	R	-	Additional communication and surveillance equipment may be required to obtain operational approval to utilize RNP 2 performance.
Departure, Arrival,	RNP 1 (with and without RF Legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF Legs.	FAA AC 90-105A	R	O2	Includes RNP terminal departure and arrival procedures. This includes procedures with Radius-to-Fix Legs (RF Legs).

Continue ►

► *Continuing*

Table 2.6.1 - GNSS Operational Requirements

Phase of flight	Approved PBN Capability	Operational limitations	Reference Documents	ICAO Flight Plan Code		Notes
				Item 10a Code	Item 18 PBN /	
Approach	RNP APCH LNAV minima (with and without RF Legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF Legs.	EASA AMC 20-27 FAA AC 90-105A	R	S1	Includes non-precision approaches based on conventional navigation aids with "or GPS" in the title and area navigation approaches titled "GPS", "RNAV (GPS)", and "RNAV (GNSS)". This includes procedures with RF Legs. RF Legs may be used in the initial and intermediate legs of the approach procedure or the final leg of the missed approach procedure only.
Approach	RNP APCH LNAV/VNAV minima (with and without RF Legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF Legs. QNH shall be available at the destination airport when conducting a Baro-VNAV approach. Use of remote altimeter setting source is not allowed to conduct a Baro-VNAV approach. The two primary altimeters must be operational when flying a RNP APCH LNAV/VNAV with Baro-VNAV guidance.	EASA AMC 20-27 FAA AC 90-105A	R	S2	Includes area navigation approaches titled "RNAV (GPS)" and "RNAV (GNSS)". This includes procedures with RF Legs. Vertical guidance is based on GPS/ SBAS and/or Baro-VNAV. RF Legs may be used in the initial and intermediate legs of the approach procedure or the final leg of the missed approach procedure only.
Approach	RNP APCH LPV minima (with and without RF Legs)	At a minimum, the flight director must be displayed and utilized when conducting procedures containing RF Legs.	EASA AMC 20-28	B		RF Legs may be used in the initial and intermediate legs of the approach procedure or the final leg of the missed approach procedure only.

NOTE 1 - FDE/RAIM availability worldwide can be determined using the WFDE Prediction program, part number 006-A0154-01 or later approved version with Garmin GA36 and GA37 antennas selected, or:

- within the United States, using the FAA's en-route and terminal RAIM prediction website: www.raimprediction.net, or by contacting a Flight Service Station,
- within Europe, using Europe's AUGUR GPS RAIM Prediction Tool at http://augur.ecacnav.com/augur/app/home.

NOTE 2 - A BOTH ON GPS1 or BOTH ON GPS2 system annunciation does not necessarily mean that one GPS has failed. Refer to the MFD – GPS STATUS page to determine the state of the unused GPS.

General Considerations

The route planning and WFDE prediction program may be downloaded from the Garmin website on the internet. For information on using the WFDE Prediction Program, refer to Garmin WAAS FDE Prediction Program, part number 190-00643-01, `WFDE Prediction Program Instructions'.

Garmin International holds an FAA Type 2 Letter of Acceptance (LOA) in accordance with RTCA/DO-200A and AC 20-153B for database integrity, quality, and database management processes for many of its aviation databases. LOA status and RTCA/DO-200A List of Applicable Avionics (190-01999-00) can be viewed at FlyGarmin.com.

Navigation information is referenced to WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conform to WGS-84 or equivalent.

GNSS (GPS/SBAS) Navigation System Limitations

Navigation database limitations

The pilot must confirm at system initialization that the Navigation database is current.

If the AIRAC cycle will change during flight, the pilot must ensure the accuracy of navigation data, including suitability of navigation facilities used to define the routes and procedures for flight. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

GPS/SBAS based IFR enroute, oceanic, and terminal navigation is prohibited unless the pilot verifies and uses a valid, compatible, and current Navigation database or verifies each waypoint for accuracy by reference to current approved data.

Discrepancies that invalidate a procedure must be reported to Garmin International. The affected procedure is prohibited from being flown using data from the Navigation database until a new Navigation database is installed in the airplane and verified that the discrepancy has been corrected.

Contact information to report Navigation database discrepancies can be found at www.Garmin.com>Support>Contact Garmin Support>Aviation. Pilots and operators can view navigation data base alerts at www.Garmin.com>In the Air>NavData Alerts.

RNP APCH including “GPS”, “or GPS”, “RNAV (GPS)” and “RNAV (GNSS)” instrument approaches using the Garmin integrated flight deck are prohibited unless the pilot verifies and uses the current Navigation database. GPS based instrument approaches must be flown in accordance with an approved instrument approach procedure that is loaded from the Navigation database into the flight plan by its name.

Not all published Instrument Approach Procedures (IAP) are in the Navigation database.

Manual entry of waypoints using latitude/longitude or place/bearing is prohibited for published RNP and RNAV routes.

Whenever possible, RNP and RNAV routes including Standard Instrument Departures (SIDs) and Obstacle Departure Procedures (ODPs), Standard Terminal Arrival (STAR), and enroute RNAV Q and RNAV T routes should be loaded into the flight plan from the database in their entirety, rather than loading route waypoints from the database into the flight plan individually. Selecting and inserting individual named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted.

GNSS integrity limitations

For flight planning purposes, in areas where SBAS coverage is not available, the pilot must check RAIM availability. The availability of GPS integrity RAIM shall be confirmed for the intended route of flight.

In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended route of flight, the flight should be delayed, cancelled, or re-routed on a track where RAIM requirements can be met.

For flight planning purposes, in Remote Continental and Oceanic areas, the pilot must check FDE availability. Refer to Table 2.6.1, to check maximum authorized FDE unavailability and WFDE Prediction program references.

Approach operations limitations

LNAV+V feature is a standard LNAV approach with advisory vertical guidance provided for assistance in maintaining a constant vertical glidepath similar to an

ILS glideslope on approach. This guidance is displayed on the PFD in the same location as the ILS glideslope using a magenta diamond. In all cases where LNAV +V is indicated by the system during an approach, LNAV minima shall be used.

Use of the Garmin GPS/SBAS receivers to provide navigation guidance during the final approach segment of an ILS, LOC, LOC-BC, LDA, SDF, MLS or any other type of approach not approved for “or GPS” navigation is prohibited.

When using VOR/LOC/GS receivers to fly the final approach segment, VOR/LOC/GS navigation data must be selected and presented on the CDI of the pilot flying.

Use of Baro-VNAV to a DA is not authorized with a remote altimeter setting. A current altimeter setting for the landing airport is required. When using remote altimeter minima, the Baro-VNAV function may be used to the published LNAV MDA.

Procedures with RF Legs (Radius to Fix Legs)

At the minimum, the flight director must be displayed and utilized when conducting procedures containing RF Legs.

Advisory visual approaches

WARNING

Use of advisory visual approaches in IMC is prohibited. Advisory visual approaches are intended to be used as an aid to situational awareness and do not guarantee terrain or obstruction clearance along the approach path.

Icing Conditions

Except for certain phases of flight where the POH specifies that deicing boots should not be used (e.g. takeoff, final approach, and landing), compliance with the following is required.

Wing and tail leading edge pneumatic deicing boot system must be activated:

- At the first sign of ice formation anywhere on the aircraft, and
- The system must either be continued to be operated in the automatic cycling mode, if available; or the system must be manually cycled as needed to minimize the ice accretions on the airframe.

The wing and tail leading edge pneumatic deicing boot system may be deactivated only after leaving icing conditions and after the airplane is determined to be clear of ice.

The Ice Detection System is only an advisory system. The pilot must activate manually the ice protection systems as a preventive prior to entering icing conditions or when icing conditions are identified.

In any case of icing conditions, first refer to procedure Flight into Known Icing Conditions in Subsection 4.5. , and in case of unforeseen icing conditions, refer in addition to procedure Flight into Severe Icing Conditions in Subsection 3.13. .

Severe Icing Conditions

WARNING

Severe icing may result from environmental conditions outside of those for which the airplane is certificated.
Flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled liquid water and ice crystals) may result in ice build-up on protected surfaces exceeding the capability of the ice protection system, or may result in ice forming aft of the protected surfaces. This ice may not be shed using the ice protection systems, and may seriously degrade the performance and controllability of the airplane.

During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues. If one or more of these visual cues exists, immediately request priority handling from air traffic control to facilitate a route or an altitude change to exit the icing conditions.

- Unusually extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice,
- Accumulation of ice on the upper surface of the wing aft of the protected area.

Since the autopilot, when operating, may mask tactile cues that indicate adverse changes in handling characteristics, use of the autopilot is prohibited when any of the visual cues specified above exist, or when unusual lateral trim requirements or autopilot trim warnings are encountered while the airplane is in icing conditions.

All wing icing inspection lights must be operative prior to flight into icing conditions at night.

NOTE

This supersedes any relief provided by the Master Minimum Equipment List (MMEL).

Refer to Paragraph Equipment Required Depending on Type of Operation .

Refer to procedure Flight into Severe Icing Conditions in Subsection 4.5. , and in case of unforeseen icing conditions, refer in addition to procedure Flight into Severe Icing Conditions in Subsection 3.13. .

Flap Operating Envelope

The use of flaps is not authorized above 15,000 ft.

Reverse Utilization

The use of reverse range is prohibited during flight.

Weather Radar

On ground, the radar radiation is inhibited when the landing gear shock absorbers are compressed. However, it is important to obey the following restrictions:

- Do not operate the radar during refueling operations or in the vicinity of trucks or containers containing flammables or explosives,
- Do not allow personnel within 12 feet of area being scanned by antenna when system is transmitting.

CAUTION

The weather radar can be displayed on PFD 1, PFD 2 and MFD, with different indications of mode.
The radar is in standby mode only when all displays indicate STANDBY.

Equipment Required Depending on Type of Operation

The airplane is approved for day & night VFR and day & night IFR operations when appropriate equipment is installed and operating correctly.

The type certification for each use requires the following equipment. The equipment must be installed and operate perfectly according to the indicated type of use.

CAUTION

It is the pilot's responsibility to check that the following equipment lists are in accordance with the specific national operation rules of the airplane registration country depending on the type of operation.

CAUTION

Systems and equipment mentioned hereafter do not include specific flight and radio-navigation instruments required by decree concerning operation conditions for civil airplanes in general aviation or other foreign regulations (for example FAR PART 91 and 135).

Day VFR

1. Pilot instruments
   - Airspeed indicator
   - Sensitive and adjustable altimeter
   - Standby heading reference instrument
2. CAS warning and caution messages
   - FADEC monitoring
   - Oil pressure
   - Low fuel pressure
   - Fuel selector OFF
   - Fuel auxiliary pump ON
   - Left and right fuel tank low level
   - Non functioning of fuel timer
   - Battery stop
   - Main generator OFF
   - Low voltage
   - Ground power unit connected
   - Inertial separator
   - Starter
   - Ignition
   - Flaps
   - Landing gears and doors
3. Aural warning
   - V_{MO} warning
   - Landing gear warning
   - Stall warning
4. Engine instruments
   - Torquemeter

- Propeller tachometer
- Interturbine temperature indicator (ITT)
- Gas generator tachometer (Ng)
- Oil pressure indicator
- Oil temperature indicator

5. Various indicators
   - Fuel gauge indicators (2)
   - Voltmeter
   - Ammeter
   - Outside air temperature
6. Installations
   - Fuel mechanical pump (main)
   - Fuel electrical pump (auxiliary)
   - Fuel shut-off valve
   - Fuel timer
   - Starter generator
   - Inertial separator
   - Stall warning
   - Electrical aileron trim
   - Electrical rudder trim
   - Manual elevator pitch trim
   - Engine ignition
   - Landing gear electro-hydraulic unit
   - Landing gear emergency hydraulic pump (manual)
   - Flaps
   - Electrical feathering
   - Battery
7. Miscellaneous
   - Seats (each occupant)
   - Belts (each occupant)
   - Straps (each occupant)
   - Pilot's Operating Handbook

Night VFR

1. All equipment required for day VFR

2. Attitude display indicator
3. Instrument lighting
4. Instrument panel lighting
5. Emergency lighting
6. Vertical speed indicator
7. Navigation lights (4)
8. Anticollision lights (2)
9. Landing light

IFR

1. All equipment required for day VFR
2. All equipment required for night VFR, if flight is performed during night
3. Taxi light, if flight is performed during night
4. Clock
5. 2nd altimeter
6. Emergency static source
7. Pitot static tube deicing

Pressurized flight

1. Cabin altimeter
2. Cabin vertical speed indication
3. Cabin differential pressure indication
4. Pressurization control valve
5. Safety valve
6. Pressurization control
7. Maximum cabin altitude and pressure warning light

Flight into icing conditions

1. All equipment required for IFR flight
2. Propeller deicing
3. Left windshield deicing
4. Airframe, stabilizer and elevator horn deicing
5. Wing leading edge inspection light, if night flight
6. Stall warning deicing
7. Inertial separator
8. Garmin annunciation *“Airspeed”*

Altitude Operating Limits

Maximum altitude: 31,000 ft (9,449 m)

Maximum differential pressure: 6.2 psi.

Operation in RVSM Area

This airplane is approved for operations in Reduced Vertical Separation Minimum (RVSM) airspace when required equipment is maintained in accordance with the Airplane Maintenance Manual.

This does not constitute operational approval. Individual airplane and operational approval must be obtained in accordance with applicable operating rules.

Each operator must ensure compliance with required crew training and operating practices and procedures.

Moreover, the equipment listed hereafter, or later approved versions, must be installed and operating normally upon entering RVSM airspace:

Equipment	Installed quantity	Required quantity
Barometric altimeter:		
- Air Data Computer	2	2
- Avionics Display Unit	3	2
Autopilot altitude hold function:		
- AFCS mode controller	1	1
- Integrated Avionics Computer	2	2
- AHRS	2	2
ATC transponder with ADS-B OUT function	1 or 2	1

NOTE

Any changes to the pitot/static, air data computer, autopilot, altitude alerting and/or transponder systems, or other changes that affect operation of these systems must be evaluated for impact on the RVSM approval. The standby altimeter is not approved for RVSM operations.

In-Flight Breaker Use Limits

A tripped breaker should not be reset in flight unless deemed necessary for continued safe flight and landing. Only one reset should be attempted.

Enhanced Mode S

The installed Mode S system satisfies the data requirements of ICAO Doc 7030/4, regional supplementary procedures for SSR Mode S enhanced surveillance in designated european airspace. The capability to transmit data parameters is shown in column 2:

Parameter	Available (A) / Not available (NA)
Magnetic heading	A
Indicated airspeed	A
Mach No	A
Vertical rate	A
Roll angle	A
True airspeed	A
True track angle	A
Ground speed	A
Selected altitude	A
Barometric pressure setting	A

Chartview System Operating Limitations

The geographic-referenced airplane symbol on some charts must not be used for navigation.

NOTE

The airplane symbol displayed on some charts provides supplemental airplane situational awareness information. It is not intended as a means for navigation or flight guidance. The airplane symbol is not to be used for conducting instrument approaches or departures, and it should not be relied upon during low visibility taxi operations. Position accuracy, orientation, and related guidance must be assured by other means of required navigation.

Operators must have backup charts available to the flight crew.

Database currency must be verified prior to use via database effectivity page.

The flight crew is responsible for verifying availability of charts for the planned flight.

2.7 - Miscellaneous Limits

Seating Limits C.G.

- 2 front seats at 178.5 in (4.534 m)

>> *With 4-seat accommodation or 6-seat accommodation*

- 2 intermediate seats at 224.8 in (5.710 m)

>> With 6-seat accommodation

- Rear bench (2 seats) at 267.1 in (6.785 m)

Seat Belts Limits

WARNING

The buckle positioner does not serve as a fifth attach point for the safety belts. Only use the self-gripping strap for proper positioning of the buckle.

Baggage Limits

- Baggage in pressurized cabin at 303 in (7.695 m)
- Baggage in non pressurized forward compartment at 128 in (3.250 m)

Minimum Crew

- One pilot at left front seat

Maximum Occupancy

The number of persons on board is limited by approved seating configuration installed but must not exceed six, including the pilot.

The number of persons must be less than or equal to the number of seats.

Use of Doors

Flight with an open or ajar door is prohibited.

Cargo Net Installation Limits

Small cargo net: maximum loading height = 28 in (710 mm)

Large cargo net: maximum loading height = 22 in (565 mm) in cabin, out of baggage compartment.

CAUTION

No item may extend forward of the cargo net system to protect door from obstruction.

2.8 - Markings

Airspeed Indicator on PFD(s) and on Standby Airspeed Indicator

Markings and their color code significance are shown in Table 2.8.1.

Table 2.8.1 - Airspeed Indicator Markings

<table>
<tr><th>Marking</th><th>KIAS
(Value or range)</th><th>Significance</th></tr>
<tr><td>Red strip</td><td>Below 65</td><td>Low airspeed awareness range</td></tr>
<tr><td>Thick white strip</td><td>65 - 81</td><td rowspan="2">Full flap operating range
65 KIAS is maximum weight V_{S0} in landing configuration</td></tr>
<tr><td>Thin white strip</td><td>81 - 122</td></tr>
<tr><td>Thin green strip</td><td>81 - 122</td><td rowspan="2">Normal operating airspeed range
81 KIAS is maximum weight V_{S1} with landing gear and flaps UP</td></tr>
<tr><td>Thick green strip</td><td>122 - 266</td></tr>
<tr><td>Red/white barber pole strip</td><td>Above 266</td><td>266 KIAS = V_{MO}</td></tr>
</table>

Pressurization

Table 2.8.2 - Pressurization Marking

Marking	Value	Significance
Red line	6.2 psi	Cabin differential pressure limit

>> preMod: MOD70-0753-00C

Engine Instruments

Gauge Markings

Table 2.8.3 - Engine Instruments – Gauge Markings

Indication	Red line ---------- Minimum limit	Yellow arc ---------- Time-limited range	Green arc ---------- No time-limited range	Red line ---------- Maximum limit
Oil temperature	- 40 °C (- 40 °F)	- 40 to 0 °C (- 40 to 32 °F) 104 to 110 °C (219.2 to 230 °F)	0 to 104 °C (32 to 219.2 °F)	110 °C (230 °F)
Oil pressure	60 psi	60 to 100 psi 135 to 175 psi	100 to 135 psi	175 psi
Ng	---	104 to 104.3%	90 to 104%	104.3%
ITT Engine start or Engine OFF	---	850 to 1,000 °C (1,562 to 1,832 °F)	400 to 850 °C (752 to 1,562 °F)	900 °C (1,652 °F) (red line) * ---------- 1000 °C (1,832 °F)
ITT Engine running	---	850 to 900 °C (1,562 to 1,652 °F)	400 to 850 °C (752 to 1,562 °F)	900 °C (1,652 °F)
Torque (TRQ)	---	103 to 118%	0 to Max available**	118%

* Limit for 20 seconds maximum between 850 °C and 900 °C.

** The FADEC continuously sends to the avionics the maximum TRQ available that depends on current airplane operation and current external conditions. The upper boundary of the green arc is updated accordingly. This maximum available TRQ is valid for all flight conditions.

NOTE

Propeller RPM (Np) is not presented in the above table as the information is only presented as a digital indicator – refer to Paragraph Digit Colors .

Digit Colors

The digit colors of engine parameters depend on the value of the parameter and the duration. They are described in the following tables.

Table 2.8.4 - Oil Temperature – Digit Colors

Range (°C)	Time condition	Digit color
-40 ≤ °C < 15 and Ng ≤ 72%	None	Green
15 ≤ °C ≤ 104	None	
-40 ≤ °C < 15 and Ng > 72%	None	Yellow
104 < °C ≤ 110	< 10 minutes	
< -40 °C	None	Red
104 < °C ≤ 110	≥ 10 minutes	
> 110 °C	None	

Table 2.8.5 - Oil Pressure – Digit Colors

Range (psi)	Time condition	Digit color
60 ≤ psi < 100 and Ng ≤ 72%	None	Green
60 ≤ psi < 100 and Ng > 72%	≤ 5 seconds	
100 ≤ psi ≤ 135	None	
40 ≤ psi < 60	≤ 20 seconds	Yellow
60 ≤ psi < 100 and Ng > 72%	> 5 seconds	
135 < psi ≤ 175	≤ 20 seconds	
< 40 psi	None	Red

Continue ►

► *Continuing*

Table 2.8.5 - Oil Pressure – Digit Colors

Range (psi)	Time condition	Digit color
40 ≤ psi < 60	> 20 seconds	
60 ≤ psi < 100 and Ng > 72%	> 20 seconds	
135 < psi ≤ 175	> 20 seconds	
> 175 psi	None	

Table 2.8.6 - Ng – Digit Colors

Range (%)	Time condition	Digit color
50.7% ≤ Ng < 104%	None	Green
104% ≤ Ng ≤ 104.3%	< 20 seconds	Yellow
> 104%	≥ 20 seconds	Red
> 104.3%	None	

Table 2.8.7 - Propeller RPM (Np) – Digit Colors

Range (RPM)	Time condition	Digit color
< 1,905	None	White
1,955 < Np ≤ 2,030	None	
1,905 ≤ Np ≤ 1,955	None	Green
2,030 < Np < 2,100	< 20 seconds	Yellow
> 2,030	≥ 20 seconds	Red
≥ 2,100	None	

Table 2.8.8 - ITT (Engine start or Engine OFF) – Digit Colors

Range (°C)	Time condition	Digit color
≤ 850 °C	None	Green
850 < °C ≤ 900	< 20 seconds	Green
900 < °C ≤ 1,000	< 5 seconds	Yellow
> 850 °C	≥ 20 seconds	Red
> 900 °C	≥ 5 seconds	Red
> 1,000 °C	None	Red

Table 2.8.9 - ITT (Engine running) – Digit Colors

Range (°C)	Time condition	Digit color
≤ 850 °C	None	Green
850 < °C ≤ 900	< 20 seconds	Yellow
> 850 °C	≥ 20 seconds	Red
> 900 °C	None	Red

Table 2.8.10 - Torque – Digit Colors

Range (%)	Time condition	Digit color
≤ 103%	None	Green
103% < TRQ ≤ 118%	< 5 seconds	Green
103% < TRQ ≤ 118%	≥ 5 seconds	Yellow
> 103%	≥ 20 seconds	Red
> 118%	None	Red

>> *All*

>> postMod: MOD70-0753-00C

Engine Instruments

The display of the gauges for engine parameters and the color of the parameter digital value depend on some criteria defined for each parameter, based on the parameter value and the duration:

- Normal,
- Caution, possibly associated with a caution CAS message,
- Warning, possibly associated with a warning CAS message.

The definition of the criteria, along with the gauge display depending on these criteria, is given for each engine parameter in the following paragraphs.

The digit color for the current parameter value depends directly on the criterion:

Criterion	Digit color
Normal	Green
Caution	Yellow
Warning	Red

NOTE

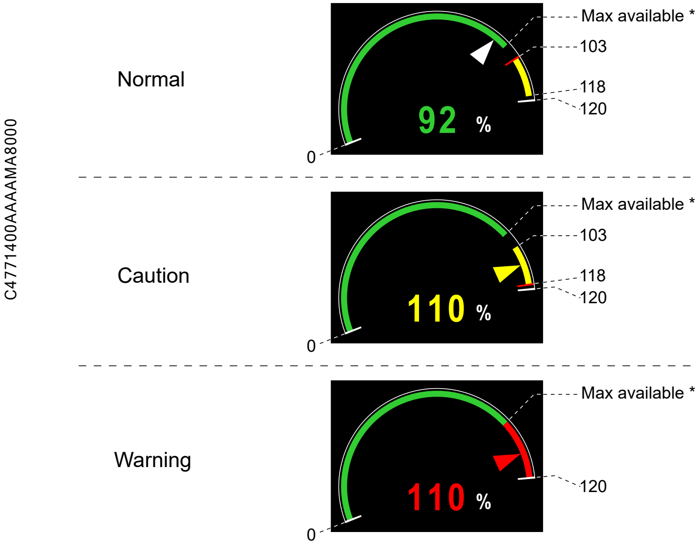
When warning criterion is true for a parameter, it is only reset to false when the parameter gets back into the Normal range.

Torque

Table 2.8.11 - Torque – Criteria Definition

Range (%)	Time condition	Criterion
< 103%	None	Normal
103% ≤ TRQ ≤ 118%	≤ 20 seconds	Caution
> 103%	≥ 20 seconds	Warning
> 118%	None	

Figure 2.8.1 - Torque – Gauge Display



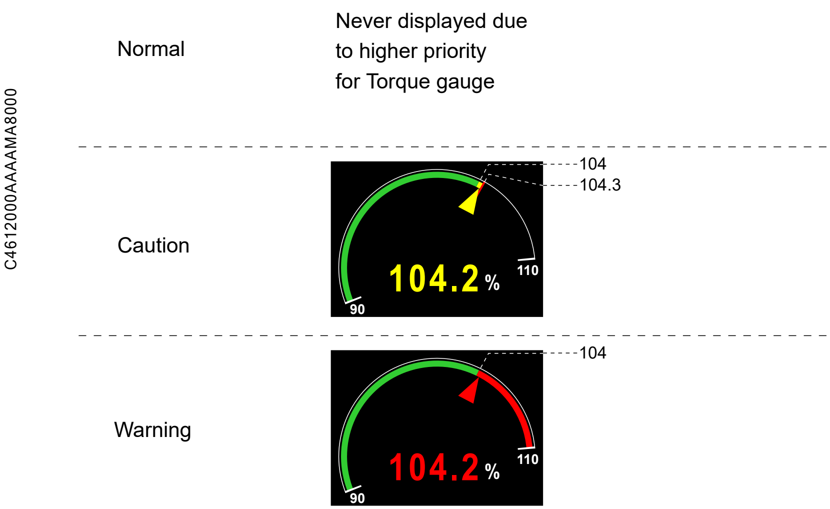
* The FADEC continuously sends to the avionics the maximum TRQ available that depends on current airplane operation and current external conditions. The upper boundary of the green arc is updated accordingly. This maximum available TRQ is valid for all flight conditions.

Ng

Table 2.8.12 - Ng – Criteria Definition

Range (%)	Time condition	Criterion
< 104%	None	Normal
104% ≤ Ng ≤ 104.3%	< 20 seconds	Caution
> 104%	≥ 20 seconds	Warning
> 104.3%	None	Warning

Figure 2.8.2 - Ng – Gauge Display

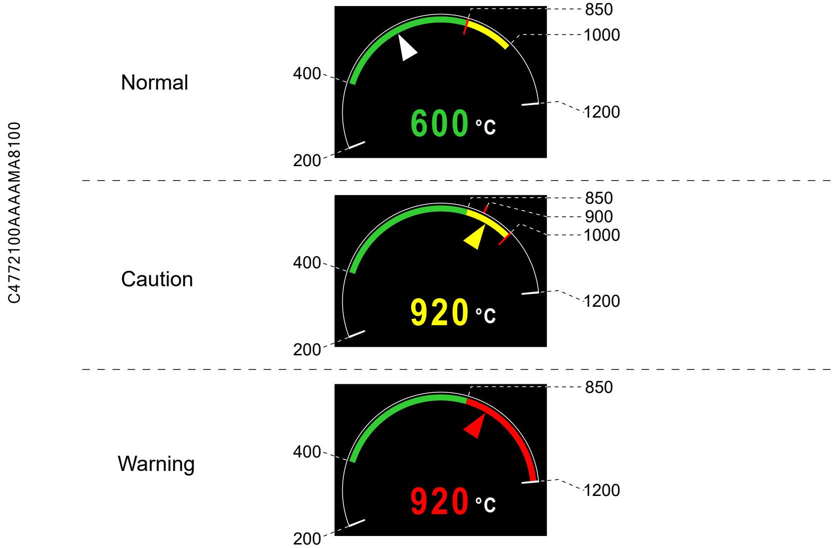


ITT (Engine start)

Table 2.8.13 - ITT [Engine start] – Criteria Definition

Range (°C)	Time condition	Criterion
< 850 °C	None	Normal
850 ≤ °C ≤ 1,000	< 20 seconds	Caution
900 < °C ≤ 1,000	< 5 seconds	
> 850 °C	≥ 20 seconds	Warning
> 900 °C	≥ 5 seconds	
> 1,000 °C	None	

Figure 2.8.3 - ITT [Engine start] – Gauge Display

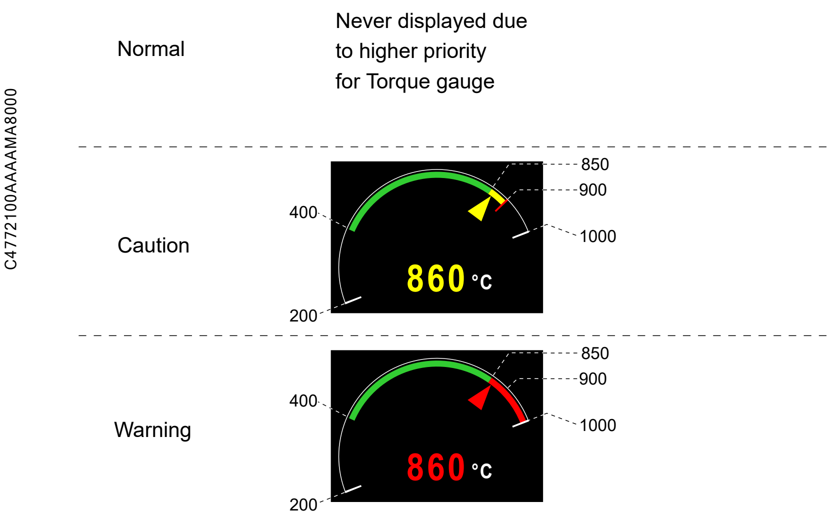


ITT (Engine running)

Table 2.8.14 - ITT [Engine running] – Criteria Definition

Range (°C)	Time condition	Criterion
≤ 850 °C	None	Normal
850 < °C ≤ 900	< 20 seconds	Caution
> 850 °C	≥ 20 seconds	Warning
> 900 °C	None	Warning

Figure 2.8.4 - ITT [Engine running] – Gauge Display



Propeller RPM (Np)

Table 2.8.15 - Propeller RPM (Np) – Criteria Definition

Range (RPM)	Time condition	Criterion
< 1,905	None	White digits
1,955 < Np ≤ 2,030	None	
1,905 ≤ Np ≤ 1,955	None	Normal
2,030 < Np < 2,100	< 20 seconds	Caution
> 2,030	≥ 20 seconds	Warning
≥ 2,100	None	

NOTE

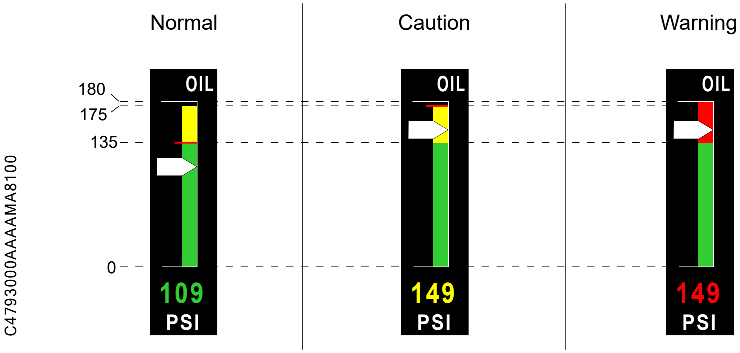
Propeller RPM (Np) is only presented as a digital indicator.

Oil Pressure (Engine start or commanded shutdown)

Table 2.8.16 - Oil Pressure [Engine start or commanded shutdown] – Criteria Definition

Range (psi)	Time condition	Criterion
0 ≤ psi ≤ 135	None	Normal
135 < psi ≤ 175	≤ 20 seconds	Caution
135 < psi ≤ 175	> 20 seconds	Warning
> 175 psi	None	Warning

Figure 2.8.5 - Oil Pressure [Engine start or commanded shutdown] – Gauge Display



Oil Pressure (Engine running)

Table 2.8.17 - Oil Pressure [Engine running] – Criteria Definition

Range (psi)	Time condition	Criterion
100 ≤ psi ≤ 135	None	Normal
40 ≤ psi < 60	≤ 20 seconds	Caution
60 ≤ psi < 100 and Ng ≤ 72%	None	Caution

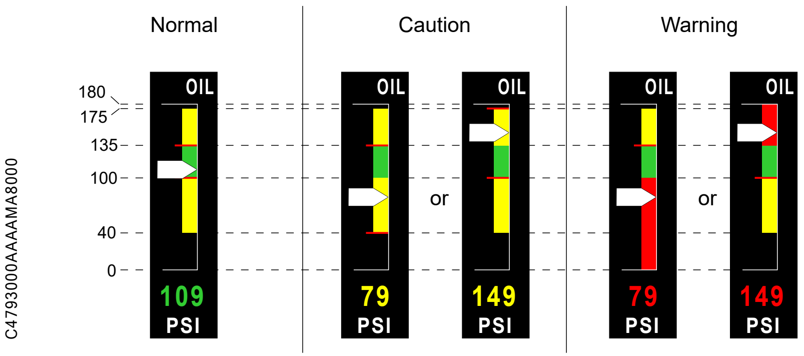
Continue ►

► *Continuing*

Table 2.8.17 - Oil Pressure [Engine running] – Criteria Definition

Range (psi)	Time condition	Criterion
60 ≤ psi < 100 and Ng > 72%	≤ 20 seconds	
135 < psi ≤ 175	≤ 20 seconds	
< 40 psi	None	Warning
40 ≤ psi < 60	> 20 seconds	
60 ≤ psi < 100 and Ng > 72%	> 20 seconds	
135 < psi ≤ 175	> 20 seconds	
> 175 psi	None	

Figure 2.8.6 - Oil Pressure [Engine running] – Gauge Display



Oil Temperature

Table 2.8.18 - Oil Temperature – Criteria Definition

Range (°C)	Time condition	Criterion
15 ≤ °C ≤ 104	None	Normal

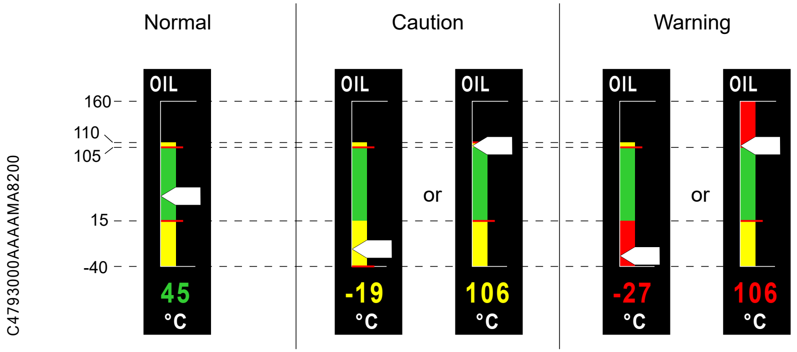
Continue ►

► *Continuing*

Table 2.8.18 - Oil Temperature – Criteria Definition

Range (°C)	Time condition	Criterion
-40 ≤ °C < 15	None	Caution
104 < °C ≤ 110	< 10 minutes	
< -40 °C	None	Warning
104 < °C ≤ 110	≥ 10 minutes	
> 110 °C	None	

Figure 2.8.7 - Oil Temperature – Gauge Display

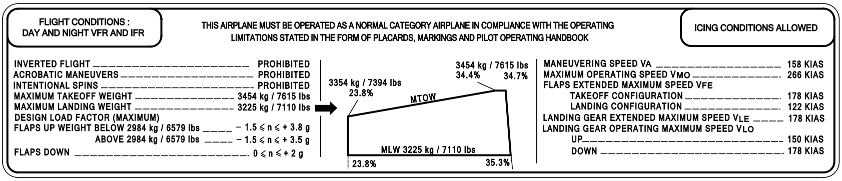


>> *All*

Intentionally left blank

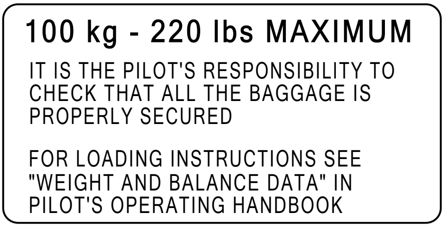
2.9 - Placards

1. Under the left front side window



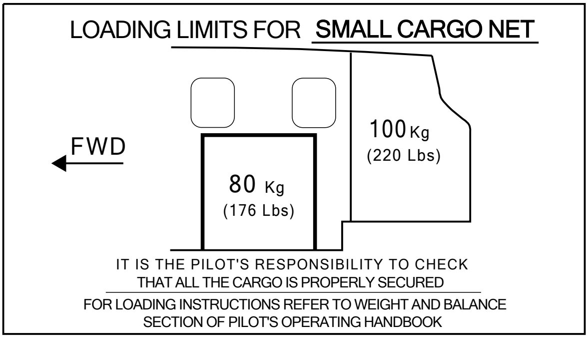
C4113004AAABMA8000

2. On the pressurized baggage compartment partition wall



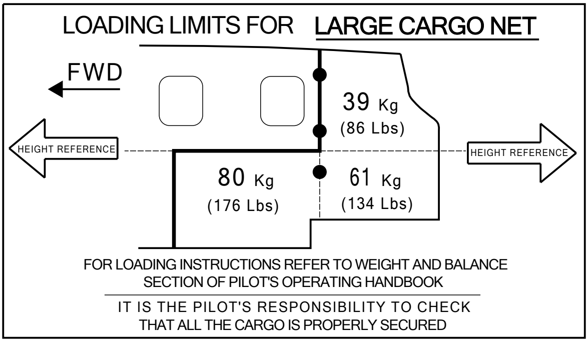
I4113500AAABMA18001

3. For the small cargo net, on the right lower upholstery panel



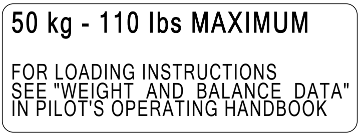
I4113500AAAAMA18000

4. For the large cargo net, on right side upholstery panel, in the rear baggage compartment



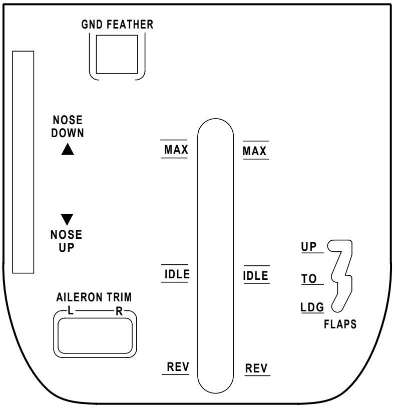
I4113500AAAAMA18100

5. On the forward baggage compartment door frame (non pressurized)



I4112001AAAFMA8000

6. On the pedestal console



C4113006AAAAMA8300

7. On the fuel selector

8. Near fuel tank caps

JET-A-FUEL

TOTAL CAPACITY 150.5 us gal - 570 l

ANTI-ICE ADDITIVE REQUIRED.SEE PILOT'S OPERATING HANDBOOK FOR OTHER APPROVED FUELS QUANTITY AND TYPE OF ADDITIVE

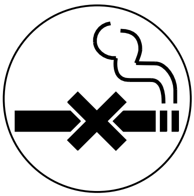
9. On internal face of left-side engine cowling

10. On the landing gear emergency control access door

I4113200AAABMA8400

11. Under the window, at left-side intermediate seat

I4113300AAAAMA8400



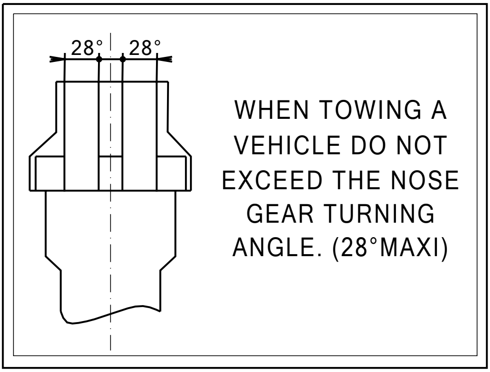
12. Above the passenger's table

I4113400AAADMA8300

13. Under the right control wheel

I4351000AAACMA8000

14. On the nose gear door



I4112001AAACMA8000

15. On the nose gear leg

NOSE LANDING GEAR

TIRE PRESSURE : 6,5 bar
94 psi

C4112001AABAMA8300

16. On main gear legs

MAIN LANDING GEAR
TIRE PRESSURE : 8,96 bar
130 psi

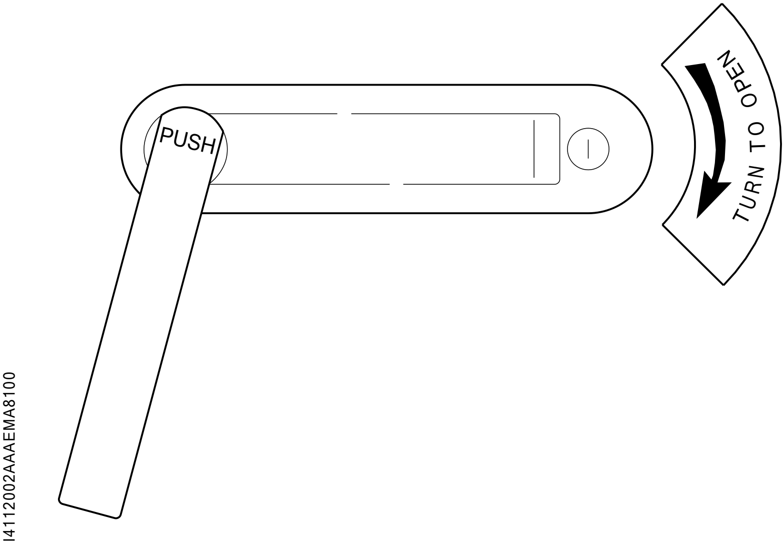
C4112001AABAMA8200

17. On the engine cowling, in front of the compartment door

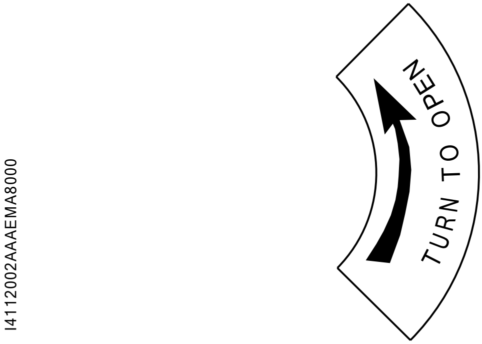
EXTERNAL POWER
28 VOLTS D.C. NOMINAL
800 AMPS
STARTING CAPACITY MIN
DO NOT EXCEED 1000 AMPS

C4112001AABAMA8100

18. On the pilot door - External side, if installed

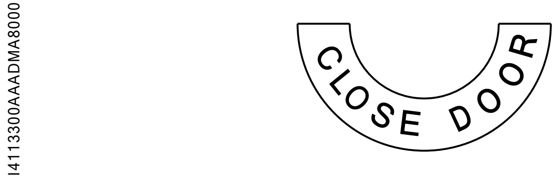


19. On the access door - External side



20. On the outer fuselage skin aft of the access door

21. In the cabin forward of the access door

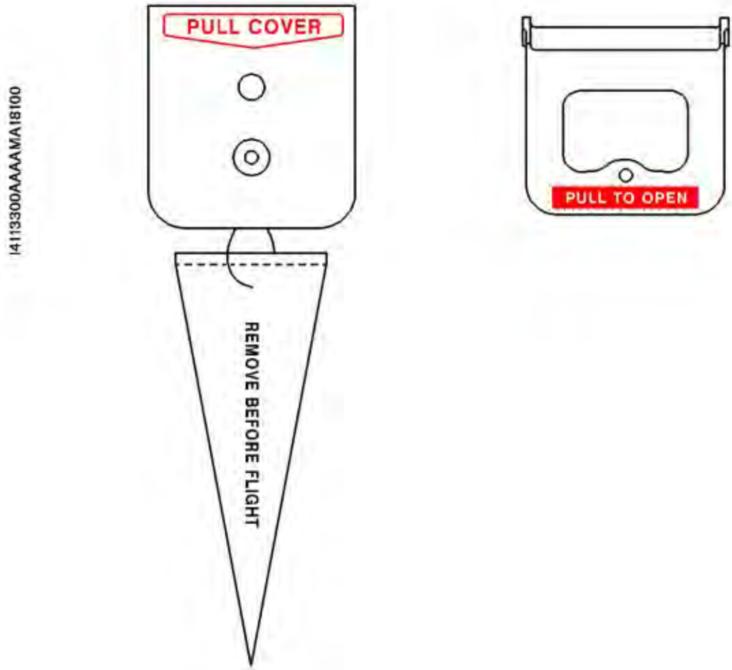


22. On the access door - Internal side

23. On the pilot door - Internal side, if installed

24. On the emergency exit handle

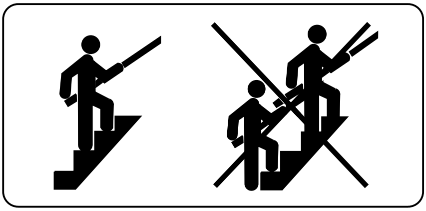
Marking on cover and marking on handle.



25. Above the emergency exit door

26. On the last step of stairs

I4113400AAADMA8100



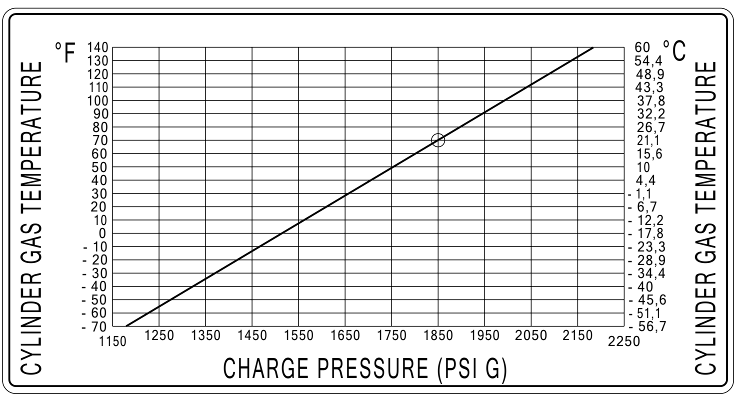
27. On the rear passenger masks containers

I4113400AAADMA8200

OXYGEN MASKS

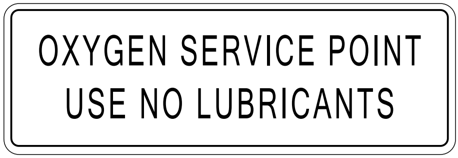
28. On internal face of the oxygen cylinder service door

I4112400AAAAMA8000



29. On the oxygen service door

I4112400AAAAMA8100

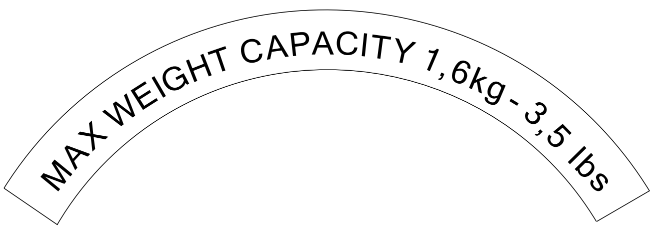


30. On the emergency locator transmitter inspection door

I4112200AAAAMA8000

31. On each coat and headset hanger

C4113200AAACMA8000



32. Above the AFCS control unit

C4113207AAAAMA8000

33. On both sides of each buckle positioner

C4112200AAABMA8000

SEAT BUCKLE POSITIONER ONLY

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Section 3

CAS messages

Table of Contents

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Section 3

Emergency Procedures

Table of Contents

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3.1 - General

This section provides the recommended procedures in the event of a major failure and/or an emergency situation.

Emergency procedures require immediate action.

Emergency procedures associated with optional or particular equipment which require Pilot's Operating Handbook supplements are provided in Section 9: Supplements.

The pilot must know procedures given in this section and be prepared to take appropriate action should an emergency arise.

Some emergency procedures are a part of pilot basic training. Although these emergencies are discussed here, this information is not intended to replace such training, but only to provide a source of reference and review.

It is important for the pilot to be familiar with standard emergency procedures to be at the optimum efficacy if necessary.

Alarm System Recall

Main failure or state modification of the different systems are provided by warning or caution messages appearing in the CAS window.

The color code philosophy for CAS messages is the following:

- the RED warning messages indicate a failure or a condition that requires an immediate action from the pilot,
- the AMBER caution messages indicate a failure or a condition that requires an action from the pilot as soon as practicable and,
- the WHITE advisory messages indicate a state of a system that does not require an action from the pilot.

The color code philosophy of the single engine indicator is the following:

Red or amber failure warnings are coupled with the lighting of:

- a red warning indication (e.g NG - 104.5%) requires immediate engine power reduction to resume operation in the normal operating range,
- an amber cautionary indication (e.g. ITT - 855 °C) requires engine power reduction, as soon as practicable, to resume operation in the normal operating range.

Red or amber failure warnings are coupled with the lighting of:

- a flashing red indicator/pushbutton

or

- a fixed amber indicator/pushbutton

Both indicators/pushbuttons are located on the upper part of the left side of the instrument panel. When either one lights up, press it once to reactivate. It will go out and is ready to signal in the case of another failure. In the CAS window, the corresponding failure message remains ON as long as the failure condition is true.

The actions associated to **RED** warning and **AMBER** caution messages are described in this section of the POH for major failure and emergency situations.

NOTE

For minor failure and/or abnormal situations, refer to Subsection General.

The information associated to the **WHITE** advisory messages are described in the Garmin Pilot's Guide.

Procedure Format

PROCEDURE TITLES

Name of the procedure 1/X

Procedure introduction or description of symptoms associated with the failure are presented like this at the beginning of the procedure.

1/X is written if the procedure extends over two pages or more.

MEMORY ITEMS

The memory items are indicated in bold font as shown hereafter:

1 - The memory items are written like this.

Through self-training, simulator, initial and recurrent training, the pilot must perfectly know these items in order to take appropriate actions without using any Check-List as soon as the emergency situation occurs and is identified

CONDITIONAL STEPS

Conditions are presented like this:

1 - With related actions to perform indented inside.

VALIDITY / EFFECTIVITY

>> *Pre/Post-MOD70-xxxx-xx*

Before procedure title, represents a specific validity / effectivity for the entire procedure below. If nothing is specified, the procedure applies to all airplanes.

>> *Validity inside a procedure is presented like this*

1 - With actions related to this validity listed under.

CONTINUATION AND ENDING

The end of the entire procedure is indicated by:

End of procedure.

Procedure completion within the body of the procedure as a result of a condition is indicated by:

End of procedure ■

Continuation of a procedure on several pages is indicated by:

Continue ► (at the bottom of the page)

► *Continuing* (at the top of the page)

FLY THE AIRPLANE DIRECTIVE

► Fly the airplane ◄ stands for a reminder of a basic flying rule. Despite the critical situation, keep focusing on control of the airplane while performing the necessary procedure.

LANDING DIRECTIVES

► Land as soon as possible ◄ means land on the nearest suitable runway.

► Land as soon as practicable ◄ means land for maintenance on the nearest suitable runway with convenient facilities.

CAS MESSAGES

Indicated as displayed in the CAS window:

- **FUEL PRESS** means FUEL PRESS warning CAS message
- **MAIN GEN** means MAIN GEN caution CAS message.
- **STARTER** means STARTER advisory CAS message.

ANNUNCIATIONS ON PFDs or MFD

Indicated as displayed in the PFD or MFD with specifying “annunciation” next to the message:

- **BOTH ON AHRS1** annunciation,
- **HDG** annunciation.

3.2 - Rejected Takeoff

Engine Failure at Takeoff Before Rotation	1 / 1

1 - THROTTLE .... IDLE

2 - Brakes .... As required

If the airplane cannot be stopped on the runway:

3 - ENGINE MODE switch .... OFF

4 - FUEL TANK SELECTOR .... OFF

5 - Crash lever .... Pull down

If necessary:

6 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure.

Rejected Takeoff for Any Other Reason 1 / 1

1 - THROTTLE .... IDLE

2 - Reverse .... As required

3 - Brakes .... As required

If the airplane cannot be stopped on the runway:

4 - ENGINE MODE switch .... OFF

5 - FUEL TANK SELECTOR .... OFF

6 - Crash lever .... Pull down

If necessary:

7 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure.

3.3 - Engine Failures

Engine Failure Before Rotation 1 / 1

1 - Perform procedure . Engine Failure at Takeoff Before Rotation in Subsection 3.2.

End of procedure.

Engine Failure After Rotation 1 / 2

► Fly the airplane ◄

If height does not allow to choose a suitable landing surface:

► Land straight ahead without changing LANDING GEAR position ◄

1 - FLAPS lever .... TO

2 - Airspeed .... Maintain above 100 KIAS

3 - THROTTLE .... IDLE

4 - ENGINE MODE switch .... OFF

5 - FUEL TANK SELECTOR .... OFF

Before touchdown:

6 - FLAPS lever .... LDG

7 - Crash lever .... Pull down

8 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure ■

Continue ►

Engine Failure After Rotation 2 / 2

► *Continuing*

If height allows to reach a suitable landing surface:

9 - LANDING GEAR lever .... DN

10 - FLAPS lever .... As required

Maintain airspeeds	
Flaps UP	**105 < KIAS < 178**
Flaps TO	**100 < KIAS < 178**
Flaps LDG	**85 < KIAS < 122**

11 - THROTTLE .... IDLE

12 - ENGINE MODE switch .... OFF

13 - FUEL TANK SELECTOR .... OFF

Before touchdown:

14 - Crash lever .... Pull down

15 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure.

Engine Failure in Flight 1 / 2

Symptoms:

- *loss of power,*
- FADEC FAIL *with engine shutdown.*

► Fly the airplane ◄

If airplane altitude is > 10,000 ft:

1 - **Oxygen masks .... Use**
Refer to procedure Oxygen Use in Subsection 3.13.

2 - **THROTTLE .... IDLE**

3 - **ENGINE MODE switch .... OFF**

4 - **FUEL TANK SELECTOR .... OFF**

If FADEC FAIL *is displayed:*

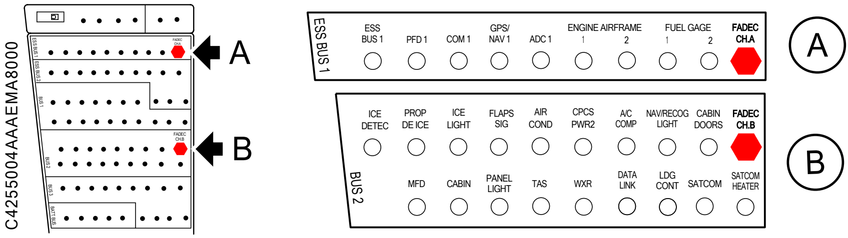
CAUTION

Only one reset of the FADEC breakers should be attempted – refer to Paragraph In-Flight Breaker Use Limits in Subsection 2.6. .

5 - **FADEC CH.A & FADEC CH.B breakers .... Pull**

6 - **FADEC CH.A & FADEC CH.B breakers .... Push**

Figure 3.3.1 - Location of FADEC Breakers



Continue ►

Engine Failure in Flight 2 / 2

► *Continuing*

7 - Air start envelope .... Check
Refer to Air Start Envelope in Subsection 3.4.

If **FADEC FAIL** *is OFF and air start is possible:*

8 - Perform procedure .... Air Start Procedure in Subsection 3.4.

End of procedure ■

If **FADEC FAIL** *is still ON or air start is not possible:*

9 - Perform procedure .... Maximum Range Descent in Subsection 3.6.

NOTE

If **FADEC FAIL** is ON, **NO DISPATCH** will be displayed when on ground – refer to procedure NO DISPATCH in Subsection 3.13. .

End of procedure.

OIL PRESS or OIL PRESS 1 / 2

The procedure applies for either low and high oil pressures.

OIL PRESS *is displayed if oil pressure is:*

- *for high pressure:*
  - *above 175 PSI, or*
  - *above 135 PSI for more than 20 seconds.*
- *for low pressure:*
  - *below 40 PSI, or*
  - *below 60 PSI for more than 20 seconds, or*
  - *below 100 PSI for more than 20 seconds when Ng > 72%.*

OIL PRESS *is displayed if oil pressure is:*

- *for high pressure:*
  - *above 135 PSI for less than 20 seconds.*
- *for low pressure:*
  - *below 60 PSI for less than 20 seconds, or*

>> preMod: MOD70-0753-00C

- *below 100 PSI for more than 5 seconds when Ng > 72%.*

>> All

>> postMod: MOD70-0753-00C

- *below 100 PSI for less than 20 seconds when NG > 72%, or*
- *below 100 PSI when NG ≤ 72%.*

>> All

NOTE

OIL PRESS and OIL PRESS are inhibited during engine start sequence.

► Fly the airplane ◄

Continue ►

OIL PRESS or OIL PRESS 2 / 2

► *Continuing*

► **Land as soon as possible** ◄

1 - Oil pressure .... Monitor

2 - THROTTLE .... Minimum power necessary for level flight at 120 KIAS

CAUTION

ENG OP DEGRADED may appear – refer to procedure ENG OP DEGRADED in Subsection 3A.3. .
Prepare for an engine stop shortly.

If engine power decreases:

If airplane altitude is > 10,000 ft:

3 - Oxygen masks .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

4 - THROTTLE .... IDLE

5 - ENGINE MODE switch .... OFF

6 - FUEL TANK SELECTOR .... OFF

7 - Perform procedure .... Maximum Range Descent in Subsection 3.6.

End of procedure.

Engine Regulation Discrepancy, THROTTLE FAIL, or FADEC FAIL without Engine Shutdown 1 / 4

Symptoms:

- *power fluctuations, or*
- THROTTLE FAIL*, or*
- FADEC FAIL *without engine shutdown, or*
- *bad autothrottle behavior if engaged.*

► Fly the airplane ◄

WARNING

If THROTTLE FAIL is displayed, the FADEC freezes throttle command (power) at the last valid throttle position.

1 - AT .... Disconnect

In case engine regulation is back to normal:

► Do not engage AT ◄

► Land as soon as practicable ◄

Inform maintenance department.

Repair before further flight.

End of procedure ■

If engine power allows for level flight at 120 KIAS or above:

CAUTION

Avoid rapid THROTTLE movements.
No faster than 10 seconds between IDLE and maximum power positions.

Continue ►

Engine Regulation Discrepancy, THROTTLE FAIL, or FADEC FAIL without Engine Shutdown 2 / 4

► *Continuing*

2 - THROTTLE .... IDLE
For 2 seconds, for possible activation of the FADEC degraded torque governing mode

3 - THROTTLE ..... Progressively adjust to minimum power necessary for level flight at 120 KIAS
If possible

► Land as soon as practicable ◄

4 - LANDING GEAR lever .... DN
Only on a glide path on final approach

5 - FLAPS lever .... LDG
Only on short final

► Do not perform a go-around ◄

When runway is assured:

6 - THROTTLE .... IDLE

7 - ENGINE MODE switch .... OFF

8 - FUEL TANK SELECTOR .... OFF

9 - Land normally.

10 - Brakes .... As required

Inform maintenance department.

Repair before further flight.

NOTE

If THROTTLE FAIL or FADEC FAIL are displayed in flight, NO DISPATCH will be displayed when on ground, refer to procedure NO DISPATCH in Subsection 3.13..

End of procedure ■

Continue ►

Engine Regulation Discrepancy, THROTTLE FAIL, or FADEC FAIL without Engine Shutdown 3 / 4

► *Continuing*

If engine power does not allow for level flight at 120 KIAS or if any engine parameter exceeds allowed value:

If airplane altitude is > 10,000 ft:

11 - Oxygen masks .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

12 - THROTTLE .... IDLE

13 - ENGINE MODE switch .... OFF

14 - FUEL TANK SELECTOR .... OFF

15 - Perform procedure ... Maximum Range Descent in Subsection 3.6.

NOTE

If THROTTLE FAIL or FADEC FAIL are displayed in flight, NO DISPATCH will be displayed when on ground, refer to procedure NO DISPATCH in Subsection 3.13. .

End of procedure ■

If power is excessive to maintain level flight below 178 KIAS:

16 - Prepare for landing as soon as possible.

When approaching appropriate chosen airfield:

17 - Airspeed .... Reduce below 178 KIAS
By setting nose-up attitude

18 - INERT SEP switch .... ON

If ITT > 850 °C:

19 - INERT SEP switch .... OFF

20 - LANDING GEAR lever .... DN

21 - FLAPS lever .... TO

Continue ►

Engine Regulation Discrepancy, THROTTLE FAIL, or FADEC FAIL without Engine Shutdown 4 / 4

► *Continuing*

22 - Long final or ILS approach .... Establish
At IAS < 178 KIAS

When runway is assured:

23 - THROTTLE .... IDLE

24 - ENGINE MODE switch .... OFF

25 - FUEL TANK SELECTOR .... OFF

26 - FLAPS lever .... LDG as required
At IAS < 122 KIAS

27 - Land normally.

28 - Brakes .... As required

Inform maintenance department.

Repair before further flight.

NOTE

If THROTTLE FAIL or FADEC FAIL are displayed in flight, NO DISPATCH will be displayed when on ground, refer to procedure NO DISPATCH in Subsection 3.13. .

End of procedure.

PROP 1 / 1

Indicates that propeller speed (Np) exceeds:

- *2,030 RPM for more than 20 seconds, or*
- *2,100 RPM.*

CAUTION

May lead to an automatic propeller feathering – refer to procedure FEATHER .

► Fly the airplane ◄

1 - Reduce power and airplane speed to avoid propeller rotation speeds higher than 2,030 RPM.

► Land as soon as possible ◄

► Do not perform a go-around ◄

NOTE

In that case, the go-around may damage the gear reduction box and the reverse efficiency might be lower than expected.

Inform maintenance department.

Repair before further flight.

End of procedure.

ITT 1 / 2

When the engine is running, indicates that ITT is more than:

- *900 °C, or*
- *850 °C for more than 20 seconds.*

During engine start, indicates that ITT is more than:

- *1,000 °C, or*
- *900 °C for more than 5 seconds, or*
- *850 °C for more than 20 seconds.*

CAUTION

Autothrottle and FADEC engine protection systems do not relieve the pilot's responsibility to monitor and control the engine ITT parameter within the limitations.

During engine start:

NOTE

During engine start, if ITT is above 945 °C, the FADEC automatically aborts start sequence.

1 **- Starting procedure .... Abort**

Refer to procedure Engine Start in Subsection 4.4.

2 - Cancel the flight.

Inform maintenance department.

End of procedure ■

After engine start:

On ground:

3 - Cancel the flight.

Inform maintenance department.

End of procedure ■

Continue ►

ITT 2 / 2

► *Continuing*

In flight:

► Fly the airplane ◄

4 - AT .... Disconnect

5 - THROTTLE .... Reduce
To get ITT in green sector

► Land as soon as possible ◄

Inform maintenance department.

End of procedure.

NG	1 / 1

Indicates that Ng is more than:

- *104.3%, or*
- *104% for more than 20 seconds.*

1 - AT .... Disconnect

2 - THROTTLE .... Reduce

To get Ng below 104%

► Land as soon as possible ◄

Inform maintenance department.

End of procedure.

OIL TEMP or OIL TEMP 1 / 2

OIL TEMP *is displayed if oil temperature is:*

- *for high temperature:*
  . *above 110 °C, or*
  . *above 104 °C for more than 10 minutes.*
- *for low temperature:*
  . *below -40 °C.*

OIL TEMP *is displayed if oil temperature is:*

- *for high temperature:*
  . *above 104 °C for less than 10 minutes.*
- *for low temperature:*

  >> preMod: MOD70-0753-00C

  . *below 15 °C when Ng > 72%.*

  >> All

  >> postMod: MOD70-0753-00C

  . *below 15 °C.*

  >> All

An oil pressure failure can be expected shortly with OIL PRESS or OIL PRESS displayed.

► Fly the airplane ◄

1 - THROTTLE .... Minimum power necessary for level flight at 120 KIAS

► Land as soon as possible ◄

CAUTION

ENG OP DEGRADED may appear – refer to procedure ENG OP DEGRADED in Subsection 3A.3. .
Prepare for an engine stop shortly.

Continue ►

OIL TEMP or OIL TEMP 2 / 2

► *Continuing*

If engine power decreases:

If airplane altitude is > 10,000 ft:

2 - Oxygen masks .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

3 - THROTTLE .... IDLE

4 - ENGINE MODE switch .... OFF

5 - FUEL TANK SELECTOR .... OFF

6 - Perform procedure .... Maximum Range Descent in Subsection 3.6.

End of procedure.

FEATHER 1 / 1

Indicates that the propeller is feathered and engine sets to idle after a FADEC system component failure.

► Fly the airplane ◄

CAUTION

May lead to engine shutdown.

1 - THROTTLE .... IDLE

NOTE

Keeping the engine running at idle enables to pressurize the cabin and to provide electrical power from main generator.

2 - FLAPS and LANDING GEAR levers .... UP

3 - Airspeed .... 120 KIAS

4 - Prepare for a forced landing.

Refer to procedure Forced Landing or Ditching in Subsection 3.7.

NOTE

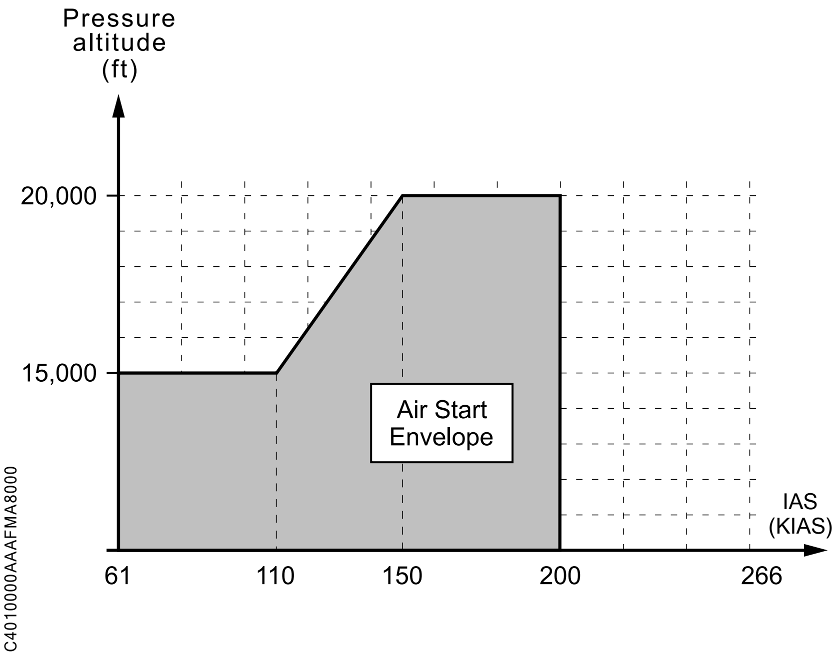
NO DISPATCH may be displayed when on ground, refer to procedure NO DISPATCH in Subsection 3.13. .

End of procedure.

3.4 - Air Start

Air Start Envelope 1 / 1

Figure 3.4.1 - Air Start Envelope



NOTE

Air start may be attempted outside of the envelope. However, above 20,000 ft or at lower speeds, ITT tends to increase during start and prudence is recommended.

End of procedure.

Air Start Procedure 1 / 2

If airplane altitude is > 10,000 ft:

1 - Oxygen masks .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

2 - SOURCE selector .... BATT

CAUTION

The starter cannot operate if the GENERATOR selector is on ST-BY.

3 - GENERATOR selector .... MAIN

4 - ESS BUS TIE switch .... NORM

CAUTION

BLEED switch set to AUTO may cause overtemperature or abnormal acceleration.

5 - BLEED switch .... OFF/RST

6 - FAN selector .... OFF

7 - Electric consumption .... Reduce

8 - FUEL TANK SELECTOR .... L or R

9 - THROTTLE .... IDLE

10 - ENGINE MODE switch .... OFF, then RUN / Guarded

11 - AUX BP switch .... AUTO

12 - **AUX BP ON** .... Check ON

13 - STARTER switch .... ON
2 seconds, then release

14 - **STARTER** .... Check ON

15 - **IGNITION** .... Check ON

Continue ►

Air Start Procedure 2 / 2

► *Continuing*

NOTE

The FADEC system introduces fuel following ignitor excitation.

CAUTION

The FADEC engine protection system is disabled during engine air start, thus there is no protection against ITT exceedances.
Acceptance of a transient ITT exceedance should be considered in such emergency situation.

16 - ITT and Ng .... Monitor

If air start is not successful:

17 - Perform procedure .... Maximum Range Descent in Subsection 3.6.

End of procedure ■

If air start is successful:

When Ng above 45%:

18 - Starter .... Check OFF automatically

19 - **STARTER** .... Check OFF

20 - Engine parameters .... Check
Oil pressure, oil temperature and ITT in green sector

21 - THROTTLE .... As required

22 - TRQ available .... Check

23 - BLEED switch .... As required

24 - Electrical equipment .... As required

► Land as soon as possible ◄

End of procedure.

Intentionally left blank

3.5 - Fire and Smoke

Engine Fire on Ground 1 / 1

Symptoms:

- *flames, smoke,*
- *uncontained engine overtemperature.*

1 - THROTTLE .... IDLE

2 - ENGINE MODE switch .... OFF

3 - FUEL TANK SELECTOR .... OFF

4 - BLEED switch .... OFF/RST

5 - FAN selector .... OFF

6 - Brakes .... As required

If necessary:

7 - Warn ground assistance.

8 - Crash lever .... Pull down

► Evacuate as soon as possible ◄

End of procedure.

Cabin Fire on Ground 1 / 1

1 - THROTTLE .... IDLE

2 - ENGINE MODE switch .... OFF

3 - FUEL TANK SELECTOR .... OFF

4 - Brakes .... As required

If necessary:

5 - Warn ground assistance.

6 - Crash lever .... Pull down

7 - Cabin fire extinguisher .... As required

► Evacuate as soon as possible ◄

End of procedure.

Engine Fire in Flight 1 / 1

Symptoms:

- *flames, smoke,*
- *uncontained engine overtemperature.*

► Fly the airplane ◄

If airplane altitude is > 10,000 ft:

1 - Oxygen masks .... Use

Refer to procedure Oxygen Use in Subsection 3.13.

2 - THROTTLE .... IDLE

3 - ENGINE MODE switch .... OFF

4 - FUEL TANK SELECTOR .... OFF

5 - AUX BP switch .... OFF

6 - BLEED switch .... OFF/RST

7 - FAN selector .... OFF

WARNING

No air start attempt after an engine fire.

If necessary:

8 - Perform an emergency descent.

Refer to procedure Maximum Rate Descent in Subsection 3.6. .

9 - Perform a forced landing.

Refer to procedure Forced Landing or Ditching in Subsection 3.7. .

End of procedure.

Cabin Electrical Fire or Smoke During Flight 1 / 2

► Fly the airplane ◄

1 - Oxygen masks and goggles .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

If the origin is known:

2 - Defective equipment breaker .... Pull

3 - Cabin fire extinguisher .... Use

If the origin is unknown:

4 - FAN selector .... OFF

5 - All unnecessary equipment .... OFF

If necessary:

6 - Perform procedure .... Smoke Elimination

If smoke or fire persists:

7 - Fly using the standby instrument.

8 - SOURCE selector .... OFF

9 - GENERATOR selector .... OFF

10 - Cabin fire extinguisher .... Use

11 - All circuit breakers .... Pull
Except FADEC CH.A on ESS BUS 1 and FADEC CH.B on BUS 2

12 - All electrical equipment .... OFF

NOTE

Check for possible fire or smoke while re-engaging necessary electrical equipment one after the other.

13 - SOURCE selector .... BATT

14 - GENERATOR selector .... MAIN

Continue ►

Cabin Electrical Fire or Smoke During Flight	2 / 2

► *Continuing*

15 - Necessary circuit breakers .... Push

16 - Necessary electrical equipment .... ON

17 - Defective equipment breaker .... Pull

18 - Not affected electrical equipment .... ON
As required

19 - Perform an emergency descent.

Refer to procedure Maximum Rate Descent in Subsection 3.6. .

► Land as soon as possible ◄

End of procedure.

Smoke Elimination 1 / 1

1 **- Oxygen masks and goggles .... Use**
Refer to procedure Oxygen Use in Subsection 3.13.

2 - BLEED switch .... OFF/RST

3 - FAN selector .... OFF

4 - DUMP switch .... Press

5 - Wait until the cabin differential pressure drops.

6 - EMERGENCY RAM AIR control knob .... Pull

If smoke decreases:

► Land as soon as possible ◄

End of procedure ■

If smoke increases:

7 - EMERGENCY RAM AIR control knob .... Push

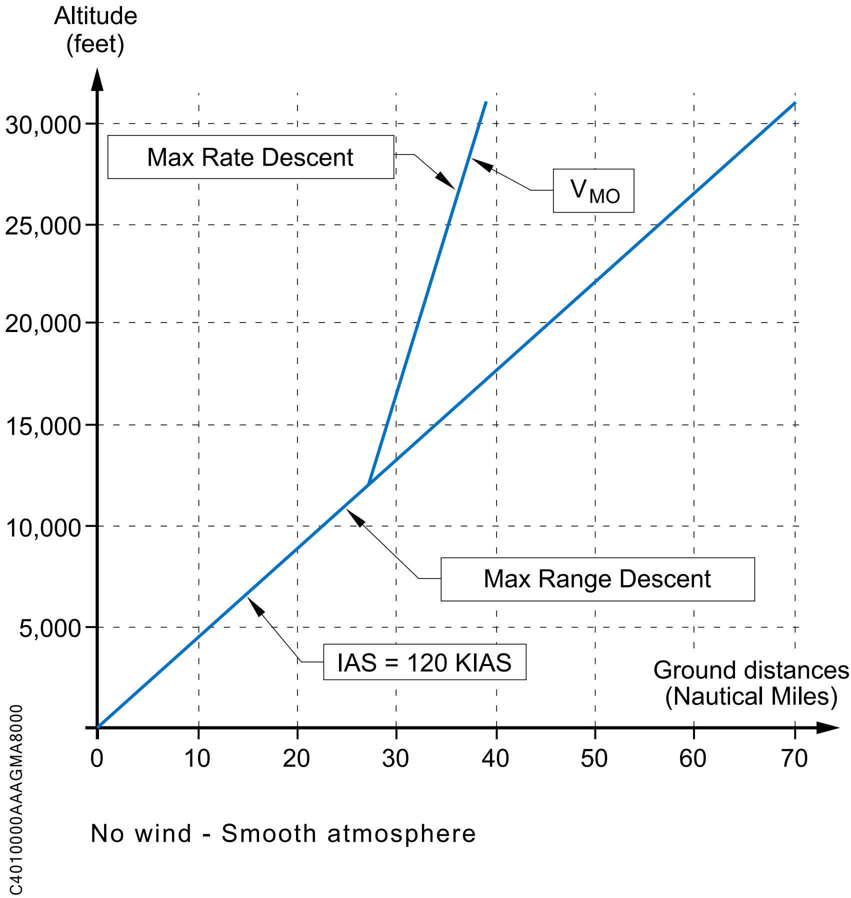
► Land as soon as possible ◄

End of procedure.

3.6 - Emergency Descents

Emergency Descents Profiles 1 / 1

Figure 3.6.1 - Emergency Descents Profiles



End of procedure.

Maximum Rate Descent 1 / 1

1 - Oxygen masks .... Use

Refer to procedure Oxygen Use in Subsection 3.13.

2 - THROTTLE .... IDLE

3 - Pitch attitude .... -10° to -20°

If smooth air:

4 - FLAPS lever .... UP

5 - LANDING GEAR lever .... UP

6 - Airspeed .... V_{MO}= 266 KIAS

If rough air or in case of structure problem:

7 - Airspeed .... Below 178 KIAS

8 - FLAPS lever .... UP

9 - LANDING GEAR lever .... DN

End of procedure.

Maximum Range Descent 1 / 2

NOTE

This procedure is designed for an airplane with propeller feathered, which can be achieved only by shuting down the engine.

CAUTION

The cabin pressurization system no longer operates with the engine shut down.

If airplane altitude is > 10,000 ft:

1 - Oxygen masks .... Use

Refer to procedure Oxygen Use in Subsection 3.13.

2 - THROTTLE .... IDLE

3 - ENGINE MODE switch .... OFF

4 - FUEL TANK SELECTOR .... OFF

5 - FLAPS lever .... UP

6 - LANDING GEAR lever .... UP

7 - Airspeed .... 120 KIAS

8 - DUMP switch .... Press

9 - EMERGENCY RAM AIR control knob .... Pull

If VMC and non icing conditions are possible:

10 - ESS BUS TIE switch .... EMER

11 - Prepare for a forced landing.

Refer to procedure Forced Landing or Ditching in Subsection 3.7. .

End of procedure ■

Continue ►

Maximum Range Descent 2 / 2

► *Continuing*

If VMC and non icing conditions are not possible:

Breakers:

12 - PFD 2 .... Pull

13 - ADC 2 .... Pull

14 - XPDR 2 .... Pull

15 - AIR COND .... Pull

Switches / pushbuttons / selectors:

16 - DE ICE SYSTEM mode .... AUTO

If icing conditions:

17 - DE ICE SYSTEM mode .... MAN
All deicing systems turn on

18 - PITOT L/R & STALL HTR .... Check ON

19 - Airspeed .... Above 135 KIAS
Configuration flaps UP

20 - AUX BP .... OFF

21 - FUEL SEL .... MAN
Status light in green

22 - Lights .... All OFF

23 - BLEED .... OFF/RST

24 - FAN .... OFF

25 - AP/TRIMS .... OFF

26 - CABIN / ACCESS .... OFF

27 - All personal electrical devices .... Disconnect

28 - Prepare for a forced landing.

Refer to procedure Forced Landing or Ditching in Subsection 3.7. .

End of procedure.

3.7 - Emergency Landings, Flaps, Gear

Forced Landing or Ditching 1 / 2

When forced landing or ditching area is chosen:

1 - THROTTLE .... IDLE

2 - ENGINE MODE switch .... OFF

3 - FUEL TANK SELECTOR .... OFF

4 - AUX BP switch .... OFF

5 - BLEED switch .... OFF/RST

6 - FAN selector .... OFF

7 - DUMP switch .... Press

8 - Gliding airspeed .... Maintain 120 KIAS
Until favorable ground approach

9 - ESS BUS TIE switch .... NORM
To have GEAR and FLAPS available

10 - AP / YD / AT .... Disconnect
Before 200 ft

If night conditions:

11 - LDG lights .... ON

For a forced landing (on ground):

If landing surface is suitable:

12 - LANDING GEAR lever .... DN

If landing surface is not suitable:

13 - LANDING GEAR lever .... Keep UP

When chosen landing surface is assured:

14 - FLAPS lever .... LDG

15 - Crash lever .... Pull down

Continue ►

Forced Landing or Ditching 2 / 2

► *Continuing*

16 - Airspeed on final approach .... 85 KIAS

17 - Land flaring out.

18 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure ■

For a ditching (on water):

CAUTION

In heavy swell with light wind, approach parallel to the swell (rollers).
In heavy wind, land facing wind.

19 - LANDING GEAR lever .... UP

20 - FLAPS lever .... LDG

21 - Airspeed .... Maintain above 85 KIAS

22 - Maintain a descent rate as low as possible when approaching the water.

23 - Crash lever .... Pull down

24 - Maintain attitude without flaring out until touchdown.

25 - Evacuate through EMERGENCY EXIT.

Refer to procedure Emergency Exit Use in Subsection 3.13.

End of procedure.

Tire Blowout during Landing 1 / 1

1 - Control direction with brakes and nose wheel steering.

2 - Reverse .... As required

3 - Stop the airplane to minimize damages.

4 - Shut down the engine.

Refer to procedure Shutdown in Subsection 4.4.

End of procedure.

FLAPS ASYM 1 / 1

Indicates a dissymmetry of flap deflection. This immediately stops the flap motor and prevents further operation of the flaps.

► Fly the airplane ◄

1 - FLAPS breaker .... Pull

2 - FLAPS lever .... UP

► Land as soon as possible ◄

3 - Maintain airspeeds:

- IAS < 178 KIAS for deflections between UP and TO positions,
- IAS < 122 KIAS for deflections greater than TO position.

At landing:

4 - Perform procedure .... Landing with Flaps Malfunction in Subsection 3A.7.

End of procedure.

3.8 - Fuel System

FUEL PRESS 1 / 2

Indicates a fuel pressure drop at HP engine pump inlet.

► Fly the airplane ◄

1 - Remaining fuel .... Check

2 - FUEL TANK SELECTOR .... Switch tanks

3 - AUX BP switch .... AUTO

If FUEL PRESS *remains ON:*

4 - AUX BP switch .... ON

5 - AUX BP ON .... Check ON

If pressure is normal again and FUEL PRESS *is OFF:*

Mechanical pump has failed.

6 - AUX BP switch .... Maintain ON

► Land as soon as practicable ◄

End of procedure ■

If FUEL PRESS *remains ON:*

7 - FUEL TANK SELECTOR .... Switch tanks

If FUEL PRESS *is OFF:*

A supply problem may have occured from the tank selected first (air vent, fuel icing, etc.).

End of procedure ■

If FUEL PRESS *remains ON:*

8 - Fullest tank .... Select

9 - Avoid high power and rapid movements of the THROTTLE.

10 - Altitude .... Below 18,000 ft

Continue ►

FUEL PRESS 2 / 2

► *Continuing*

► Land as soon as possible ◄

End of procedure.

FUEL LOW L-R 1 / 1

Indicates a level drop in the corresponding tank.

1 - Corresponding gauge .... Check

2 - Check that the other tank has been automatically selected.

If other tank not automatically selected:

3 - FUEL SEL pushbutton .... MAN
Status light in green

4 - Select tank manually .... As required

► Fly the airplane ◄

5 - Minimum fuel .... Check

6 - Take decision.

If necessary:

► Land as soon as practicable ◄

End of procedure.

FUEL CLOGGING 1 / 1

Indicates that the engine fuel filter is clogged. The fuel is no longer filtered.

In flight:

► Fly the airplane ◄

► Land as soon as possible ◄

Inform maintenance department.

Repair before further flight.

End of procedure ■

On ground:

► Do not take off ◄

Inform maintenance department.

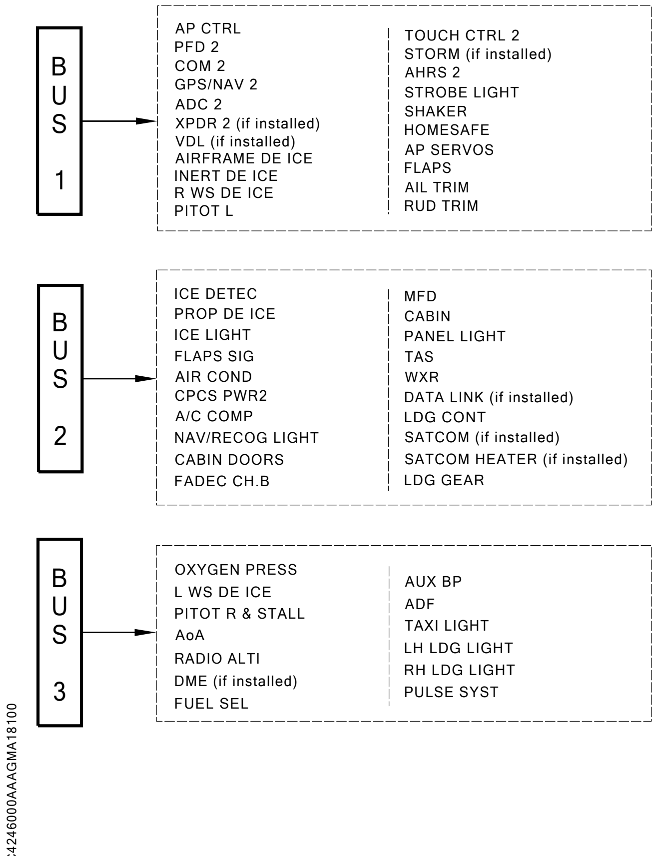
The airplane is grounded, repair before further flight.

End of procedure.

3.9 - Electrical System

BUS Bars 1 / 3

Figure 3.9.1 - BUS 1, BUS 2, BUS 3 Bars

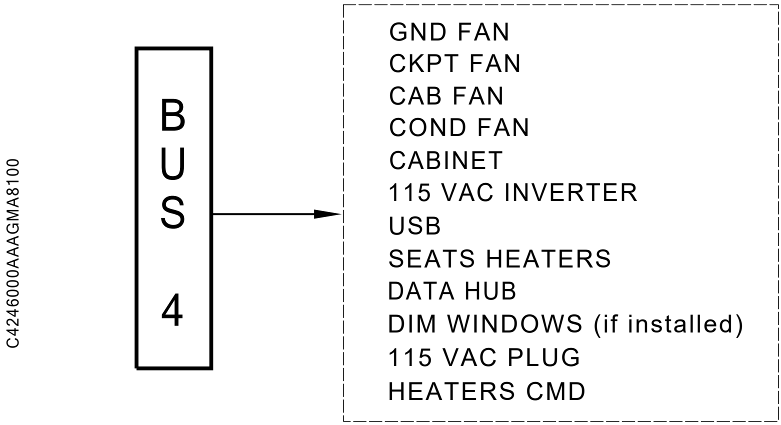


Continue ►

BUS Bars 2 / 3

► *Continuing*

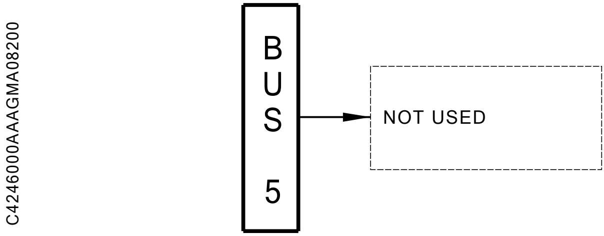
Figure 3.9.2 - BUS 4 Bar



NOTE

Breakers located on Frame C13bis and Frame C15.

Figure 3.9.3 - BUS 5 Bar

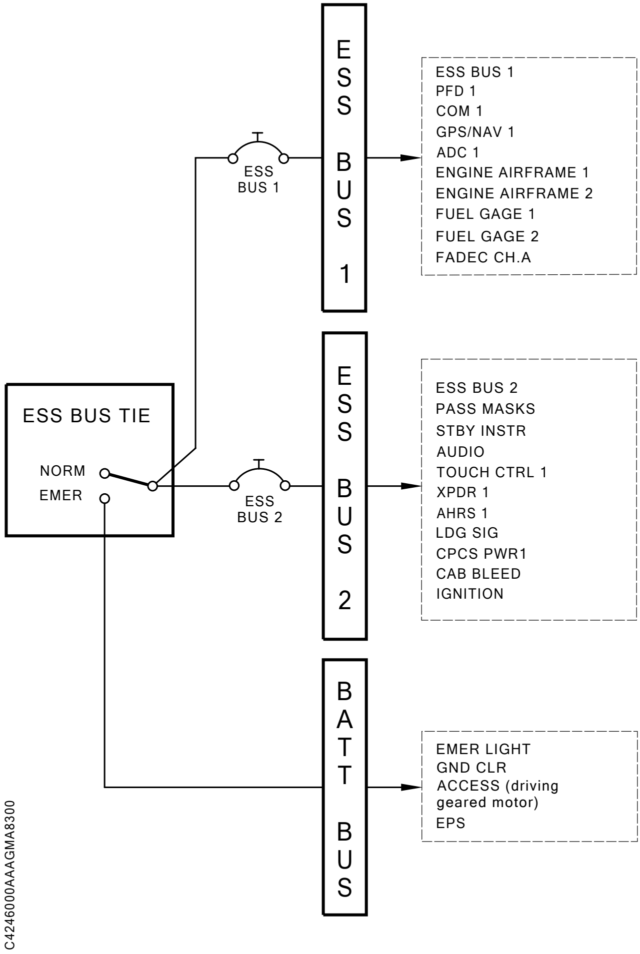


Continue ►

BUS Bars 3 / 3

► *Continuing*

Figure 3.9.4 - ESS BUS 1, ESS BUS 2, BATT BUS Bars



End of procedure.

Total Loss of Electrical Power 1 / 1

► Fly the airplane ◄

1 - Use the MD302 for:

- **attitude,**
- **airspeed,**
- **altitude, and/or**
- **heading.**

► Land as soon as possible ◄

NOTE

Airplane power is provided to the MD302 display for normal operation. Operation of the basic system is automatic. The system is powered ON while airplane power is ON.
If airplane power is lost, the internal battery will provide power to the MD302 for one hour.

End of procedure.

3.10 - Pressurization and Air Conditioning

PRESSU OFF 1 / 2

Possibly due to:

- *system malfunction,*
- *BLEED switch in OFF/RST position.*

If in flight:

If airplane altitude is > 10,000 ft:

1 - Oxygen masks .... Use

Refer to procedure Oxygen Use in Subsection 3.13.

2 - BLEED switch .... OFF/RST

3 - CPCS PWR1 and CAB BLEED (ESS BUS 2) breakers .... Check pushed

4 - CPCS PWR2 (BUS 2) breaker .... Check pushed

If possible:

5 - TRQ .... Reduce

► Fly the airplane ◄

6 - BLEED switch .... AUTO

If **PRESSU OFF** *is still ON:*

If airplane altitude is > 10,000 ft:

If necessary:

7 - Perform an emergency descent.

Refer to procedure Maximum Rate Descent in Subsection 3.6.

8 - Continue the flight.

Continue ►

PRESSU OFF 2 / 2

► *Continuing*

NOTE

If the pressure altitude is > 10,000 ft, it may be followed by CABIN ALTITUDE and USE OXYGEN MASK.

Inform maintenance department.

End of procedure ■

If on ground:

9 - BLEED switch .... OFF/RST

10 - Taxi back to apron.

11 - Shut down the engine.

Refer to procedure Shutdown in Subsection 4.4.

Inform maintenance department.

End of procedure.

CABIN ALTITUDE and USE OXYGEN MASK 1 / 1

Indicates that the cabin altitude is greater than 10,000 ft.

NOTE

CABIN ALTITUDE is followed by USE OXYGEN MASK and the *"Use oxygen mask / Use oxygen mask"* voice alert repeated three times.

1 **- Oxygen masks .... Use**

Refer to procedure Oxygen Use in Subsection 3.13.

► Fly the airplane ◄

2 - BLEED switch .... Check AUTO

3 - DUMP switch .... Check NORM / Guarded

4 - EMERGENCY RAM AIR control knob .... Check pushed

If necessary:

5 - Perform an emergency descent.

Refer to procedure Maximum Rate Descent in Subsection 3.6.

6 - Limit flight altitude to maintain cabin altitude below 10,000 ft.

Inform maintenance department before next flight.

End of procedure.

EDM 1 / 1

NOTE

EDM may come on 45 seconds after CABIN ALTITUDE and USE OXYGEN MASK.

NOTE

EDM performs a 90° left heading change and a descent to 15,000 ft.
EDM override is possible by pressing the AP/TRIM DISC pushbutton twice.
Then, AP can be re-engaged and other AP modes are usable.
AT engages automatically and reduces power.

1 - Oxygen masks .... Use

Refer to procedure Oxygen Use in Subsection 3.13.

2 - BLEED switch .... Check AUTO

3 - DUMP switch .... Check NORM / Guarded

4 - EMERGENCY RAM AIR control knob .... Check pushed

NOTE

When the airplane reaches 15,000 ft, HOMESAFE RQST is displayed for 15 seconds before HomeSafe starts the automatic landing process.

If EDM has been overridden:

► Fly the airplane ◄

If necessary:

5 - Perform an emergency descent.

Refer to procedure Maximum Rate Descent in Subsection 3.6.

6 - Limit flight altitude to maintain cabin altitude below 10,000 ft.

Inform maintenance department before next flight.

End of procedure.

CABIN DIFF PRESS 1 / 1

Indicates a cabin differential pressure over 6.4 psi ± 0.2 psi.

1 - Pressurization indicator .... Check

If cabin differential pressure is > 6.4 psi ± 0.2 psi:

2 - Oxygen masks .... Use

Refer to procedure Oxygen Use in Subsection 3.13.

3 - BLEED switch .... OFF/RST

► Fly the airplane ◄

If necessary:

4 - Perform an emergency descent.

Refer to procedure Maximum Rate Descent in Subsection 3.6.

End of procedure.

O2 CYL CLOSED 1 / 1

Indicates that the oxygen cylinder isolation valve is closed.

WARNING

Flight is prohibited with oxygen cylinder closed.

1 - Oxygen cylinder .... Open

End of procedure.

DOOR 1 / 1

Indicates that one of the door latches of the door(s) is not correctly locked.

On ground:

1 - From the airplane synoptics page on the MFD, identify the defective door(s).

2 - Check the correct locking, as well as the latches position of the door(s).

If DOOR *is still ON:*

► Do not take off ◄

End of procedure ■

In flight:

► Fly the airplane ◄

3 - Start a slow descent.

4 - Decrease cabin differential pressure .... By selecting a higher LFE
LFE between 9,500 ft and 10,000 ft

If cabin altitude increases above 10,000 ft:

5 - Oxygen masks .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

6 - BLEED switch .... OFF/RST

7 - DUMP switch .... Press

8 - THROTTLE .... IDLE

9 - Airspeed .... 120 KIAS

► Land as soon as possible ◄

End of procedure.

Intentionally left blank

3.11 - Deicing System

No Emergency Procedures

Refer to Section 3A for Abnormal Procedures.

Intentionally left blank

3.12 - Avionics Miscellaneous

Unsuccessful AT Disconnection	1 / 1

Symptoms: AT is still engaged and active after having pressed the AT DISC pushbutton on the THROTTLE.

1 - AT key on AFCS control box .... Press

If unsuccessfull to disconnect AT using AT key on AFCS control box:

2 - AP/TRIM DISC pushbutton .... Press
AP / YD also disengage
Re-engage if needed

If unsuccessfull to disconnect AT using AP/TRIM DISC pushbutton:

3 - THROTTLE .... Move back
To disengage AT by forcing the THROTTLE lever
Move forward to manage power manually

If unsuccessfull to disconnect AT by forcing the THROTTLE:

4 - AP/TRIMS switch .... AP OFF
AP / YD is also inoperative
Fly the airplane without AP

If unsuccessfull to disconnect AT:

5 - AP SERVOS breaker .... Pull
AP is also inoperative
Fly the airplane without AP

End of procedure.

Trim Runaway 1 / 1

► Fly the airplane ◄

1 - AP/TRIM DISC pushbutton .... Press and hold

NOTE

When AP/TRIM DISC pushbutton is pressed and held, AP / YD / AT are disengaged.

The three trim tabs are disconnected and runaway stops.

2 - AP/TRIMS switch .... OFF

3 - AP/TRIM DISC pushbutton .... Release

4 - Pitch trim may be used manually.

If necessary:

5 - Airspeed .... Reduce
To reduce control forces

In case of pitch trim runaway:

6 - AP/TRIMS switch .... AP OFF

The pitch trim may be used manually, the two other trim tabs may be used again electrically.

End of procedure ■

In case of rudder or aileron trim runaway:

7 - RUD TRIM or AIL TRIM breaker .... Pull
According to the defective trim

8 - AP/TRIMS switch .... ON

The two other trim tabs may be used again electrically.

End of procedure.

USP ACTIVE 1 / 1

1 - Do not disconnect AP.

2 - Manage the flight.

NOTE

Stall warning may be triggered but AP will remain ON.

End of procedure.

AURAL WRN FAIL 1 / 1

Indicates that no aural warning alerts are available.

CAUTION

No aural stall warning.
No aural overspeed warning.
No aural landing gear warning.

1 - Maintain airspeeds.

Flaps UP	**105 < KIAS < 266**
Flaps TO	**100 < KIAS < 178**
Flaps LDG	**85 < KIAS < 122**

End of procedure.

AURAL WRN 1 CHL   1 / 1

NOTE

System switches automatically on the remaining valid aural channel.

End of procedure.

ABORT APR 1 / 1

Indicates a loss of GPS navigation.

► Perform a go-around ◄

End of procedure.

HOMESAFE RQST 1 / 1

Indicates that HomeSafe is active and will take control and declare an emergency in 15 seconds.

If the pilot wants to cancel the HomeSafe request:

1 - AP/TRIM DISC pushbutton .... Press twice
AP / YD / AT also disengage

NOTE

Before reengaging AP / YD and/or AT, check that FD and AT modes are correct.

End of procedure.

HomeSafe Deactivation 1 / 2

WARNING

HomeSafe deactivation must be performed by a pilot who is:
- **fully capable of flying the airplane, and**
- **fully aware of all actions needed to be performed in reconfiguring the airplane (the flight plan in the FMS is lost, the landing gear and flap positions may not agree with the lever positions for the landing gear and flaps).**

CAUTION

HomeSafe deactivation is not recommended on final approach.

1 - AP/TRIM DISC pushbutton .... Press twice
AP / YD / AT also disengage

CAUTION

MFD reconfiguration can take up to one minute. During this time, engine instruments and CAS messages can be displayed on PFD by using DISPLAY BACKUP.

2 - L.H. DISPLAY BACKUP pushbutton .... Press

3 - LVL pushbutton .... Press

4 - Before using VHFs, set appropriate frequency and used VHF.

5 - Inform ATC that the pilot is back and flying the airplane, and ask for altimeter setting.
Inform that the pilot must reenter the flight plan in the FMS

6 - Altimeter setting .... Re-adjust
If necessary

Continue ►

HomeSafe Deactivation 2 / 2

► *Continuing*

If **ACFT CONF MISM** *is ON:*

7 - Perform procedure .... ACFT CONF MISM in Subsection 3A.7.

End of procedure.

HS CONFIG MODE 1 / 1

Indicates that HomeSafe is still in configuration mode after a maintenance operation.

HS CONFIG MODE *appears only at avionics initialization.*

1 - Do not start the engine.

Inform maintenance department.

End of procedure.

3.13 - Miscellaneous

Crack in Cockpit Window or Window Panel 1 / 1

► Fly the airplane ◄

1 **- Descend slowly.**

2 **- Cabin differential pressure .... Reduce**
By setting Landing Field Elevation to 10,000 ft

End of procedure.

Emergency Exit Use 1 / 1

WARNING

Before using emergency exit:
- **Wait for airplane complete stop,**
- **Check cabin differential pressure = 0.**

1 - Check that the anti-theft safety pin has been removed.

>> preMod: MOD70-0793-25

2 - Remove the upholstery panel of the emergency exit. Pull it firmly through the access area to the opening handle.

Refer to Paragraph Emergency Exit in Subsection 7.3.

>> All

3 - Lift up the opening handle.

4 - Pull emergency exit assembly towards oneself to release it from its recess.

5 - Put the emergency exit door inside fuselage or throw it away from the fuselage through the opening.

6 - Evacuate airplane.

End of procedure.

Emergency Beacon (ELT) Use 1 / 1

Before a forced landing or ditching:

If possible:

1 - Transmit a MAY DAY signal on COM VHF 121.5 MHz or on a known ATC frequency.

After landing:

2 - ELT remote control switch .... ON

Maintain ON until aid arrives

End of procedure.

Inadvertent Spins 1 / 1

WARNING

Voluntary spins are prohibited.

1 **- AP/TRIM DISC pushbutton .... Press and hold until recovery**

2 **- THROTTLE .... IDLE**

3 **- Aileron .... Neutral**

4 **- Rudder .... Fully opposed to the spin**

5 **- Elevator .... Neutral**

6 **- FLAPS lever .... UP**

When rotation is stopped:

7 **- Level the wings and ease out of the dive.**

► Fly the airplane ◄

End of procedure.

AP Off, Stall Warning 1 / 1

NOTE

Shaker will vibrate simultaneously with stall warning aural alert.

1 - Fly the airplane, wings levelled and nose down until stall warning stops.

2 - TRQ .... As required

3 - Return to the desired flight path.

End of procedure.

Oxygen Use 1 / 3

With or without **USE OXYGEN MASK**.

WARNING

**Smoking is strictly prohibited when the oxygen system is in use.
Before using oxygen, remove any trace of oil, grease, soap and other fatty substances (including lipstick, make-up, etc.) on the user's face.**

Continue ►

Oxygen Use 2 / 3

► *Continuing*

For front seats:

1 - Take a mask above the opposite seat (pilot: right-side mask; front passenger: left-side mask).

- **Pull the mask out of the stowage cup and fully uncoil the tube.**
- **Press the red side vanes together to inflate the harness.**
- **Put the mask on the face and release the red side vanes.**

If there is no smoke in cabin:

2 - Mask regulator control tab .... N (Normal)
100% as required

3 - Vent valve .... Closed

If there is smoke in cabin:

4 - Mask regulator control tab 100%

5 - EMERGENCY control knob .... EMERGENCY

6 - Smoke goggles .... Don and fit to the mask

7 - Vent valve .... Open

8 - Oxygen flow indicator on mask hose .... Check

9 - MICRO/MASK switch .... MASK

10 - PASSENGER OXYGEN switch .... DEPLOY

11 - Perform an emergency descent .... To the minimum enroute altitude
Refer to procedure Maximum Rate Descent in Subsection 3.6.

If possible:

12 - Perform an emergency descent .... To an altitude below 10,000 ft
Refer to procedure Maximum Rate Descent in Subsection 3.6.

Continue ►

Oxygen Use 3 / 3

► *Continuing*

For intermediate and rear seats:

13 - Take a mask.

14 - Fully uncoil the tube.

15 - Pull on the lanyard cord to pull out the lanyard pin and flow the oxygen.

16 - Put the mask on the face.

17 - Check that the green bag inflates.

End of procedure.

Flight into Severe Icing Conditions 1 / 1

Severe icing conditions, particularly freezing rain and freezing drizzle, can be identified by:

- *unusually extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice,*
- *accumulation of ice on the upper surface of the wing aft of the protected area.*

1 - Perform procedure ..... Flight into Severe Icing Conditions in Subsection 4.5.

End of procedure.

NO DISPATCH	1 / 1

Indicates that airplane takeoff is not allowed due to a FADEC system component failure.

NO DISPATCH *is only displayed while the airplane is on ground.*

► Do not take off ◄

Inform maintenance department.

The airplane is grounded, repair before further flight.

End of procedure.

Section 3A

Abnormal Procedures

Table of Contents

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3A.1 - General

This section provides the recommended procedures in cases of minor failure and abnormal situation.

Abnormal procedures associated with optional or particular equipment that require Pilot's Operating Handbook supplements are provided in Section 9: Supplements.

The pilot must know procedures given in this section and be prepared to take appropriate action should an abnormal situation occurs.

Minor failures or abnormal situations allow the pilot to use a Check-List. However, some abnormal procedures may include memory items. These items must be perfectly known by the pilot and be executed at the beginning of these procedures. They are included in some of these procedures in order to prevent the abnormal situation from becoming an emergency.

It is important for the pilot to be familiar with standard abnormal procedures.

The actions associated to the **AMBER** caution messages are described in this section of the POH for minor failure and abnormal situations.

NOTE

For major failure and/or emergency situations, refer to Subsection 3.1. General.

Refer to Subsection 3.1. General for further information about:

- Alarm system recall,
- Procedure format,

which are also applicable to Abnormal Procedures.

Intentionally left blank

3A.2 - Rejected Takeoff

No Abnormal Procedures

Refer to Section 3 for Emergency Procedures.

Intentionally left blank

3A.3 - Engine Failures

ITT HI 1 / 1

Indicates that ITT is more than 850 °C for less than 20 seconds.

CAUTION

Autothrottle engine protection system does not relieve the pilot's responsibility to monitor and control the engine ITT parameter within the limitations.

NOTE

Single engine indicator may switch to ITT or NG parameter depending on engine conditions.

1 - AT .... Disconnect

2 - THROTTLE .... Reduce
To get ITT in green sector

End of procedure.

CHIP 1 / 1

Indicates that metallic chips have been detected in the engine oil.

In flight:

► Fly the airplane ◄

Where practicable:

1 - THROTTLE .... Reduce

2 - Engine parameters .... Monitor

► Land as soon as practicable ◄

Inform maintenance department.

Repair before further flight.

End of procedure ■

On ground:

► Do not take off ◄

Inform maintenance department.

The airplane is grounded, repair before further flight.

End of procedure.

ENG PROT ACTIVE 1 / 1

Indicates that the FADEC engine protection is active on TRQ and/or Ng and limits engine power to comply with engine limitations.

NOTE

The single engine indicator may switch to NG parameter depending on engine conditions.

If after 10 seconds exceedance is still:

1 - THROTTLE .... Reduce
To get parameter in green sector

End of procedure.

FEATHER MISMATCH 1 / 1

Indicates that the propeller is not feathered after a pilot request.

In flight:

Indication is normal. Manual feathering is not possible in flight.

1 - GND FEATHER switch .... OFF

End of procedure ■

On ground:

Indication is normal if:

- engine is not running, or
- THROTTLE is out of IDLE position.

2 - GND FEATHER switch .... OFF

Inform maintenance department.

End of procedure.

SET PWR TO IDLE 1 / 1

Indicates that throttle is out of idle position when engine is ready for start procedure.

CAUTION

If engine start is performed with THROTTLE out of IDLE position, the FADEC will command a normal start sequence to reach idle, then Ng will immediately increase to reach the power commanded by the THROTTLE (including reverse range).

1 - THROTTLE .... IDLE

2 - Continue start procedure normally.

End of procedure.

ENG OP DEGRADED 1 / 1

Indicates that an engine failure affects engine operation.

► Fly the airplane ◄

1 - TRQ parameter .... Check

CAUTION

Avoid rapid THROTTLE movements.
No faster than 10 seconds between IDLE and maximum power positions.

2 - THROTTLE .... IDLE
For 2 seconds, for possible activation of the FADEC degraded torque governing mode

3 - THROTTLE .... As required
To acceptable TRQ level

► Land as soon as practicable ◄

► Do not engage AT ◄

► Do not perform a go-around ◄

NOTE

NO DISPATCH may be displayed when on ground, refer to procedure NO DISPATCH in Subsection 3.13. .

End of procedure.

FADEC FAULT 1 / 1

Indicates a FADEC system component fault.

A possible impact is inability for the engine to switch from Flight IDLE to Ground IDLE at touchdown with THROTTLE at IDLE.

► Fly the airplane ◄

1 - Check for other possible engine-related CAS messages.

► Land as soon as practicable ◄

NOTE

Idle power may not switch from Flight IDLE to Ground IDLE after wheels touch. Landing distances given in Subsection Landing Distances are not impacted.

NOTE

NO DISPATCH may be displayed when on ground, refer to procedure NO DISPATCH in Subsection 3.13. .

End of procedure.

FADEC COM 1 CHL 1 / 1

Indicates that the communication between one FADEC channel and avionics is lost.

In flight:

► Fly the airplane ◄

► Land as soon as practicable ◄

Inform maintenance department.

Repair before further flight.

End of procedure ■

On ground:

► Do not take off ◄

Inform maintenance department.

The airplane is grounded, repair before further flight.

End of procedure.

NP 2000 MAX 1 / 1

Indicates that the FADEC commands a high Np (PROP RPM) due to:

- *an avionics failure, or*
- *an overtorque, or*
- *a FCU runaway (fuel metering valve fully open).*

► Fly the airplane ◄

CAUTION

The FADEC commands Np (PROP RPM) at 2,000 RPM and maximum torque is reduced to around 96% to comply with engine power limitations.

In flight:

► Do not engage AT ◄

1 - THROTTLE .... Reduce
To acceptable TRQ level

► Land as soon as practicable ◄

Inform maintenance department.

Repair before further flight.

End of procedure ■

On ground:

► Do not take off ◄

Inform maintenance department.

The airplane is grounded, repair before further flight.

End of procedure.

Intentionally left blank

3A.4 - Air Start

No Abnormal Procedures

Refer to Section 3 for Emergency Procedures.

Intentionally left blank

3A.5 - Fire and Smoke

No Abnormal Procedures

Refer to Section 3 for Emergency Procedures.

Intentionally left blank

3A.6 - Emergency Descents

No Abnormal Procedures

Refer to Section 3 for Emergency Procedures.

Intentionally left blank

3A.7 - Emergency Landings, Flaps, Gear

LDG GEAR UP 1 / 1

Indicates that the landing gear is not down-locked when:

- *THROTTLE is close to IDLE, and/or*
- *flaps are close to LDG position.*

Associated with:

- *the "Landing gear / Landing gear" voice alert above 800 ft AGL, or*
- *the "Check gear / Check gear" voice alert below 800 ft AGL.*

Depending on the flight phase:

1 - Check if the landing gear needs to be extended.

If necessary:

2 - LANDING GEAR lever .... DN

NOTE

Pressing the MASTER CAUTION pushbutton mutes the *"Landing gear / Landing gear"* voice alert above 800 ft AGL.

End of procedure.

Flaps Malfunction 1 / 1

In case of blockage of flaps or inoperative FLAPS control lever between UP and LDG positions, without **FLAPS ASYM***:*

1 - FLAPS breaker .... Pull

2 - FLAPS lever .... UP

► Land as soon as possible ◄

3 - Maintain airspeeds:

- IAS < 178 KIAS for deflections between UP and TO positions,
- IAS < 122 KIAS for deflections greater than TO position.

At landing:

4 - Perform procedure .... Landing with Flaps Malfunction

End of procedure.

Landing with Flaps Malfunction 1 / 1

For flaps deflections between UP and TO:

Proceed as for a normal landing with 105 KIAS of approach airspeed.

Provide for a landing distance increased by 60%.

For flaps deflections greater than TO:

Proceed as for a normal landing with 100 KIAS of approach airspeed.

Provide for a landing distance increased by 50%.

End of procedure.

Landing Gear Retraction Discrepancy 1 / 1

Symptoms:

- GEAR UNSAFE *CAS message and* GEAR UNSAFE *red warning light are ON, or*
- *the amber light is flashing and the three green lights are OFF.*

NOTE

Symptoms have to be considered at the end of the sequence.

1 - Airspeed .... Maintain below 150 KIAS

2 - LDG GEAR breaker .... Pull

If GEAR UNSAFE *CAS message and* GEAR UNSAFE *red warning light are OFF:*

3 - The flight may be continued without any restriction.

For landing gear extension:

4 - Perform procedure .... Emergency Gear Extension

End of procedure ■

If not:

5 - LDG GEAR breaker .... Push

6 - Perform procedure .... Emergency Gear Extension

End of procedure.

Landing Gear Extension Discrepancy 1 / 1

Symptoms:

- **GEAR UNSAFE** *CAS message and* **GEAR UNSAFE** *red warning light are ON, or*
- *the amber light is flashing and zero to three green lights are OFF.*

NOTE

Symptoms have to be considered at the end of the sequence.

1 - Airspeed .... Maintain below 150 KIAS

2 - Perform procedure .... Emergency Gear Extension

End of procedure.

Emergency Gear Extension 1 / 3

NOTE

Follow this procedure in case of any doubt about the gear extension.

CAUTION

Do not enter icing conditions. This could adversely increase drag and weight due to ice accumulation, and lock wheels and struts.
Climb performance will be degraded by 50%.
Cruise IAS speed will be reduced compared to a clean airplane, because of the drag. This should be taken into account when calculating the airplane range.

1 - Airspeed .... Maintain below 150 KIAS

2 - LANDING GEAR lever .... DN

3 - LDG GEAR breaker .... Pull

4 - Floor hatch .... Open

5 - Bypass selector .... Fully pull / Locked

CAUTION

Depending on the airplane's altitude, the landing gear's full extension and locking requires up to 110 cycles of the hand pump. During the final pumping cycles, increased pressure must be felt while actuating the hand pump to confirm its proper operation in extending and locking the landing gear.

6 - Landing gear emergency pump handle .... Actuate
With maximum amplitude until pump hardening

7 - MASTER WARNING pushbutton .... Press
To reset the GEAR UNSAFE

Continue ►

Emergency Gear Extension 2 / 3

► *Continuing*

If:

- GEAR UNSAFE *red warning light is OFF, and*
- GEAR UNSAFE *is OFF, and*
- *the three green lights are ON:*

8 - Exit and/or remain outside icing conditions.

Continue flight at airspeed < 178 KIAS.

► Land as soon as practicable ◄

End of procedure ■

If:

- GEAR UNSAFE *red warning light is ON, and*
- GEAR UNSAFE *is ON, and*
- *zero to three green lights are ON:*

9 - LDG GEAR breaker .... Push

10 - CHECK DOWN pushbutton .... Press

If:

- *hardening of the pump is marked, and*
- *three green lights are ON, or*
- *three green lights are ON and flickering while pressing the CHECK DOWN pushbutton:*

11 - Land.

End of procedure ■

If:

- *emergency pump remains soft, or*
- *one (or more) green light(s) is(are) not ON and/or flickering while pressing the CHECK DOWN pushbutton:*

A gear unlock condition is confirmed.

Continue ►

Emergency Gear Extension 3 / 3

► *Continuing*

Recycle the landing gear as follows:

12 - Bypass selector .... Unlock / Push

13 - Wait for one minute.

14 - LANDING GEAR lever .... UP
At airspeed < 150 KIAS

15 - Perform landing gear extension attempts in the normal mode while applying positive load factors during the maneuver as well as skidding.

In case of failure:

16 - Perform procedure .... Landing with Unlocked Main Landing Gear
or Landing with Defective Nose Landing Gear (Down Unlocked or Not Down)

CAUTION

If one main landing gear is not down, it is recommended to land with landing gear up – refer to procedure Landing with Gear Up .

End of procedure.

Landing with Unlocked Main Landing Gear 1 / 2

NOTE

If one main landing gear is not down, it is recommended to land with landing gear up – refer to procedure Landing with Gear Up.

1 - Ask ATC or another airplane to visually check the landing gear position.

If defective gear is down but unlocked:

2 - BLEED switch .... OFF/RST

3 - DUMP switch .... Press

4 - FUEL TANK SELECTOR .... Maintain on defective landing gear side
To lighten the corresponding wing (maximum fuel imbalance is 15 USG)

5 - Choose a runway with headwind or crosswind blowing from the defective gear side.

6 - Align the airplane to land on the runway edge opposite to the defective landing gear.

7 - Perform a normal approach.

8 - FLAPS lever .... LDG
At airspeed = 90 KIAS

9 - AP / YD / AT .... Disconnect
Before 200 ft

10 - Land and set nose gear immediately on ground to assure lateral control.

11 - Use full aileron during roll-out to lift the wing with the defective landing gear.

If landing gear drags during landing:

12 - THROTTLE .... IDLE

13 - ENGINE MODE switch .... OFF

14 - FUEL TANK SELECTOR .... OFF

15 - Crash lever .... Pull down

Continue ►

Landing with Unlocked Main Landing Gear 2 / 2

► *Continuing*

16 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure ■

If landing gear does not drag during landing:

17 - Preferably do not use reverse.

18 - Complete taxiing with a slight turn towards the defective landing gear.

19 - THROTTLE .... IDLE

20 - ENGINE MODE switch .... OFF

21 - FUEL TANK SELECTOR .... OFF

22 - Shut down the engine.

Refer to procedure Shutdown in Subsection 4.4.

23 - Evacuate.

End of procedure.

Landing with Defective Nose Landing Gear (Down Unlocked or Not Down) 1 / 1

1 - Ask ATC or another airplane to visually check the landing gear position.

If necessary:

2 - Transfer passengers to the rear.

3 - Perform a normal approach.

4 - FLAPS lever .... LDG

5 - Airspeed .... Maintain 90 KIAS

6 - AP / YD / AT .... Disconnect
Before 200 ft

7 - Land with nose-up attitude. Keep nose high.

8 - THROTTLE .... IDLE

9 - ENGINE MODE switch .... OFF

10 - FUEL TANK SELECTOR .... OFF

11 - Touch down slowly with nose wheel and keep elevator at nose-up stop.

12 - Brakes .... Apply moderately

13 - Crash lever .... Pull down

14 - Evacuate the airplane after coming to complete stop.
Do not unfasten seat belts before complete stop

End of procedure.

Landing with Gear Up 1 / 1

1 - Perform a standard final approach.

2 - FLAPS lever .... LDG

3 - Airspeed .... Maintain 85 KIAS

4 - BLEED switch .... OFF/RST

5 - DUMP switch .... Press

6 - AP / YD / AT .... Disconnect

Before 200 ft

When runway is assured:

7 - THROTTLE .... IDLE

8 - ENGINE MODE switch .... OFF

9 - FUEL TANK SELECTOR .... OFF

10 - Flare out.

After touchdown:

11 - Crash lever .... Pull down

12 - Evacuate the airplane after coming to complete stop.

Do not unfasten seat belts before complete stop

End of procedure.

Landing without Elevator Control 1 / 1

1 - LANDING GEAR lever .... DN

2 - FLAPS lever .... LDG

3 - Airspeed .... Maintain 95 KIAS

4 - TRQ .... As required
To maintain airspeed according to an easy approach slope ≈ 300 ft/min

5 - Adjust elevator by using the manual pitch trim wheel.

When ground approaches:

6 - Slope .... Decrease progressively

7 - TRQ .... Reduce progressively

End of procedure.

ACFT CONF MISM 1 / 1

With or without **GEAR UNSAFE**.

Indicates that the flaps and/or landing gear positions do not agree with the FLAPS and LANDING GEAR levers positions.

1 - Flaps and landing gear configuration .... Check

2 - FLAPS lever .... Set to agree with flaps position

3 - LANDING GEAR lever .... Set to agree with landing gear position

Maximum airspeeds:	
Flaps TO	178 KIAS
Flaps LDG	122 KIAS
Landing gear down	178 KIAS
Landing gear extension	178 KIAS
Landing gear retraction	150 KIAS

If **GEAR UNSAFE** *is ON:*

4 - Perform procedure .... Landing Gear Extension Discrepancy

End of procedure.

HS ABN BRAKES 1 / 1

Indicates that the HomeSafe auto-brake servo is operating.

When possible, and at the latest before 200 ft on final:

1 - AP/TRIM DISC pushbutton .... Press twice
AP / AT also disengage

End of procedure.

Intentionally left blank

3A.8 - Fuel System

AUX BP ON 1 / 1

Indicates that the auxiliary booster pump is running.

► Fly the airplane ◄

If AUX BP switch is in ON position:

Indication is normal.

End of procedure ■

If AUX BP switch is in AUTO position:

1 - Reset AUX BP switch to .... ON

2 - Then, AUX BP switch to .... AUTO

If **AUX BP ON** *goes OFF:*

3 - Continue the flight.

End of procedure ■

If **AUX BP ON** *remains ON:*

Mechanical booster pump has failed.

4 - AUX BP switch .... ON

5 - Avoid high power and rapid movements of the THROTTLE.

► Land as soon as possible ◄

End of procedure.

AUTO SEL 1 / 1

Indicates that there is no more automatic control mode running.

► Fly the airplane ◄

1 - FUEL SEL pushbutton .... Check AUTO
Status light in blue

If FUEL SEL pushbutton already on AUTO:

Failure is confirmed.

2 - FUEL SEL pushbutton .... MAN
Status light in green

3 - Select tanks manually .... As required

CAUTION

Maximum fuel imbalance is 15 USG.

End of procedure.

FUEL IMBALANCE 1 / 1

Indicates that fuel tanks are imbalanced by more than 15 USG for more than 30 seconds.

If FUEL SEL pushbutton is on AUTO (status light in blue):

1 - Fullest tank .... Select
By pressing the SHIFT pushbutton

If FUEL SEL pushbutton is on MAN (status light in green):

2 - Fullest tank .... Select
By shifting FUEL TANK SELECTOR manually

► Fly the airplane ◄

CAUTION

Maximum fuel imbalance is 15 USG.

End of procedure.

LOW LVL FAIL L-R 1 / 1

Indicates a failure of fuel low level sensor.

1 - Remaining fuel in tanks .... Check

2 - Take decision.

If any doubt:

► Land as soon as practicable ◄

► Fly the airplane ◄

On the ground:

Inform maintenance department.

End of procedure.

FUEL CLOGGING 1 / 1

Indicates an imminent clogging of the engine fuel filter.

In flight:

► Fly the airplane ◄

► Land as soon as practicable ◄

Inform maintenance department.

Repair before further flight.

End of procedure ■

On ground:

► Do not take off ◄

Inform maintenance department.

The airplane is grounded, repair before further flight.

End of procedure.

Intentionally left blank

3A.9 - Electrical System

BAT AMP 1 / 1

Indicates that battery current is over 50 A while on ground.

After starting the engine with airplane power, a battery charge over 50 A is normal.

CAUTION

Do not take off if battery charge is over 50 A.

If this indication remains steady at a high value:

It may be due to a battery or generation system failure.

End of procedure.

BAT OFF 1 / 1

Indicates that:

- *the SOURCE selector has been positioned on OFF, or*
- *the battery plug is disconnected.*

► Fly the airplane ◄

1 - SOURCE selector .... OFF

2 - SOURCE selector .... BATT

If warning persists:

► Land as soon as possible ◄

3 - Airplane mains voltage .... Monitor

End of procedure.

MAIN GEN 1 / 1

Indicates that the GENERATOR selector has been positioned to OFF or ST-BY, or the main generator is cut off.

1 - GENERATOR selector .... Check / Correct
If necessary

If warning persists:

Main generator switching is confirmed.

2 - MAIN GENERATOR RESET pushbutton .... Press

In case of failure:

► Fly the airplane ◄

3 - Keep the following systems connected:
- Autopilot system,
- Deicing systems,
- STROBE and NAV lights,
- Cockpit emergency lights,
- VHF 1,
- NAV/GPS 1,
- BLEED,
- LDG lights on short final.

This will allow to keep electrical consumption below maximum standby capacity

All other not necessary equipment can be disconnected.

4 - GENERATOR selector .... ST-BY

If necessary:

5 - ST-BY GENERATOR RESET pushbutton .... Press

6 - Maintain ST-BY loads below 100 A.

End of procedure.

LOW VOLTAGE 1 / 1

Normal functioning with GENERATOR selector on MAIN.

1 - Voltmeter voltages .... Check

If voltages are < 26 V:

2 - Monitor a possible voltage drop or any indication of battery discharge.

► Fly the airplane ◄

3 - Keep the following systems connected:
- Autopilot system,
- Deicing systems,
- STROBE and NAV lights,
- Cockpit emergency lights,
- VHF 1,
- NAV/GPS 1,
- BLEED,
- LDG lights on short final.

This will allow to keep electrical consumption below maximum standby capacity

All other not necessary equipment can be disconnected.

4 - GENERATOR selector .... ST-BY

If necessary:

5 - ST-BY GENERATOR RESET pushbutton .... Press

6 - Maintain ST-BY loads below 100 A.

End of procedure.

MAIN GEN and **LOW VOLTAGE** 1 / 3

With GENERATOR selector on ST-BY (after MAIN generator failure), functioning on ST-BY generator.

1 - GENERATOR selector .... MAIN

2 - MAIN GENERATOR RESET pushbutton .... Press

► Fly the airplane ◄

If MAIN GENERATOR successfully connected:

3 - Disconnect non-essential systems.

4 - Voltmeter and ammeter .... Monitor

► Land as soon as possible ◄

End of procedure ■

If MAIN GENERATOR not successfully connected:

5 - GENERATOR selector .... ST-BY

6 - ST-BY GENERATOR RESET pushbutton .... Press

If ST-BY GENERATOR successfully connected:

7 - Disconnect non-essential systems.

8 - Voltmeter and ammeter .... Monitor

► Land as soon as possible ◄

End of procedure ■

If ST-BY GENERATOR not successfully connected:

Both generators failure is confirmed.

Return to VMC conditions, if possible.

9 - GENERATOR selector .... OFF

If airplane altitude is > 10,000 ft:

10 - OXYGEN switch .... ON

Continue ►

MAIN GEN and LOW VOLTAGE 2 / 3

► *Continuing*

If VMC and non-icing conditions are possible:

11 - ESS BUS TIE switch .... EMER
The battery supplies only the ESS BUS and BATT BUS in this configuration

► Land as soon as possible ◄

If use of other than essential systems is required:

12 - ESS BUS TIE switch .... NORM

End of procedure ■

If VMC and non-icing conditions are not possible:

13 - Manually disconnect systems as follows:

Breakers:

14 - PFD 2 .... Pull

15 - ADC 2 .... Pull

16 - TAS .... Pull

17 - DATA LINK .... Pull

18 - XPDR 2 .... Pull

Switches / pushbuttons / selector:

19 - DE ICE SYSTEM mode .... MAN
All deicing systems turn on

20 - ICE LIGHT .... OFF
Status light in white

21 - INERT SEP .... As required

22 - AIRFRAME DE ICE .... OFF
Status light in white

23 - PROP DE ICE .... OFF
Status light in white

Continue ►

MAIN GEN and LOW VOLTAGE 3 / 3

► *Continuing*

24 - WINDSHIELD .... OFF
Status light in white

25 - TAXI/LDG lights .... OFF

26 - PULSE .... OFF

27 - STROBE .... OFF

28 - BLEED .... OFF/RST

29 - FAN .... OFF

30 - AUX BP .... OFF

31 - FUEL SEL .... MAN
Status light in green

32 - AP/TRIMS .... OFF

33 - CABIN / ACCESS .... OFF

If icing conditions:

34 - PITOT L/R & STALL HTR switch .... Check ON

35 - WINDSHIELD pushbutton .... ON
Status light in green

36 - Maintain minimum recommended airspeeds into known icing conditions.

Flaps UP	> 135 KIAS
Flaps TO	> 115 KIAS
Flaps LDG	> 95 KIAS

If time permits:

37 - AIR COND breaker .... Pull

► Land as soon as possible ◄

End of procedure.

Intentionally left blank

3A.10 - Pressurization and Air Conditioning

ECS DEGRADED 1 / 1

Indicates an ECS malfunction.

1 - Shorten the flight.

Inform maintenance department before next flight.

End of procedure.

PRESSU BACKUP 1 / 1

Indicates an ECS malfunction.

The cabin altitude reference is set to the default value of 9,800 ft, instead of LFE.

► Fly the airplane ◄

1 - Continue the flight.

Inform maintenance department before next flight.

CAUTION

When the airplane descends below 9,800 ft, cabin descent rate coincides with airplane descent rate. The pilot should take into account the airplane descent profile in order to avoid pressure annoyance.

End of procedure.

Cabin Not Depressurized After Landing 1 / 1

If cabin differential pressure remains > 0:

1 - DUMP switch .... Press

2 - BLEED switch .... OFF/RST

If necessary:

3 - EMERGENCY RAM AIR control knob .... Pull

4 - Wait for complete cabin depressurization before opening any door.

End of procedure.

VACUUM LOW 1 / 1

Low vacuum may lead to malfunctioning of leading edge deicing.

1 - Monitor the normal functioning of leading edge deicing.

If necessary:

2 - Altitude .... Below 10,000 ft

► Return to VMC conditions as soon as possible. ◄

► Fly the airplane ◄

3 - BLEED switch .... OFF/RST

End of procedure.

Defog Malfunction 1 / 1

NOTE

The demisting function is automatically switched OFF 10 minutes after the DEFOG pushbutton has been set to ON.

If moisture starts to quickly cover the inside of the windscreen with the DEFOG pushbutton already ON (status light in green):

1 - DEFOG pushbutton .... Press twice
Status light in green

If moisture continues:

2 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

3 - WINDSHIELD pushbutton .... Check ON
Status light in green

If there is no improvement and if the flight safety is engaged:

4 - Altitude .... Below 10,000 ft

5 - BLEED switch .... OFF/RST

CAUTION

In flight, the cabin will quickly depressurize. Therefore, the cabin vertical speed indicator and altimeter indications will rapidly meet those of respectively the airplane VSI and altimeter.

End of procedure.

Intentionally left blank

3A.11 - Deicing System

AFRM DEICE FAIL 1 / 1

Symptoms: failure on one of the two pneumatic deicing pulses:

- *ice on wing outboard sections,*
- *or, ice on wing inboard sections and stabilizers,*
- *AIRFRAME DE ICE status light lit in red.*

► Leave icing conditions as soon as possible ◄

1 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

2 - AIRFRAME DE ICE pushbutton .... OFF
Status light in white

End of procedure.

PROP DEICE FAIL 1 / 1

Symptoms:

- *PROP DE ICE status light lit in red,*
- *propeller vibrations.*

1 - AT .... Disconnect

2 - TRQ .... Reduce

► Fly the airplane ◄

3 - THROTTLE .... Actuate

To vary RPM within operating range

► Leave icing conditions as soon as possible ◄

4 - DE ICE SYSTEM mode switch .... MAN

All deicing systems turn on

5 - PROP DE ICE pushbutton .... OFF

Status light in white

End of procedure.

INERT SEP FAIL 1 / 1

Symptoms:

- **INERT SEP ON** *is not displayed within 50 seconds following INERT SEP switch setting ON,*
- *inertial separator is not retracted after 50 seconds following INERT SEP switch setting OFF,*
- *INERT DE ICE breaker triggered.*

► **Leave icing conditions as soon as possible** ◄

► Fly the airplane ◄

End of procedure.

Windshield Deicing Failure 1 / 1

Symptoms:

- *windshield being covered uniformly by ice,*
- *no perception of heat when touching deiced section.*

If symptoms result from overheat:

1 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

2 - WINDSHIELD pushbutton .... OFF / ON
When necessary

In case of total failure:

3 - TEMP selector .... Max warm

4 - DEFOG pushbutton .... ON
Status light in green

NOTE

The demisting function is automatically switched OFF 10 minutes after the DEFOG pushbutton has been set to ON.

Before landing:

5 - Wait for a sufficient visibility.

End of procedure.

Windshield Misting or Internal Icing 1 / 2

Symptoms: mist or ice on windshield internal face.

1 - TEMP selector .... Set to 12 o'clock position

2 - DEFOG pushbutton .... ON
Status light in green

NOTE

The demisting function is automatically switched OFF 10 minutes after the DEFOG pushbutton has been set to ON.

3 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

4 - WINDSHIELD pushbutton .... Check ON
Status light in green

If unsuccessful, to get sufficient visibility:

5 - TEMP selector .... Max warm

6 - DEFOG pushbutton .... ON
Status light in green

7 - Manually clean a sufficient visibility area.

If necessary:

CAUTION

In case of sideslip approach with pedal on the right during a long period, select the right-side fuel tank.

CAUTION

Maximum sideslip duration is 30 seconds.

8 - Clean the left-side window.

9 - Perform a sideslip approach with rudder pedals to the right.
To get sufficient landing visual references

Continue ►

Windshield Misting or Internal Icing 2 / 2

► *Continuing*

For landing:

10 - FLAPS lever .... LDG

11 - Airspeed .... Maintain above 95 KIAS

End of procedure.

PITOT NO HT L-R 1 / 1

Indicates that:

- *corresponding pitot tube heating has failed, or*
- *PITOT L/R & STALL HTR switch is not ON while the engine is running.*

If **PITOT NO HT L** *is ON:*

Icing conditions may alter airspeed indications provided by ADC 1.

1 - Avoid icing conditions.

► Fly the airplane ◄

If not possible:

2 - Perform moderate descent or climb attitudes.

V_{MO} overshoot and stall warning system are always operating.

End of procedure ■

If **PITOT NO HT R** *is ON:*

V_{MO} overshoot warning may be altered by icing conditions.

► Fly the airplane ◄

3 - Airspeed .... Monitor below 266 KIAS

End of procedure.

STALL NO HEAT 1 / 1

Indicates that:

- *stall warning vane heating has failed, or*
- *PITOT L/R & STALL HTR switch is not ON while the engine is running.*

Correct operation of the aural stall warning may be altered by severe or prolonged icing.

1 - Airspeed .... Monitor

Maintain minimum airspeed according to airplane configuration and icing conditions

► Fly the airplane ◄

End of procedure.

ICE DETECTED 1 / 1

Indicates that icing conditions have been detected by the ice detector and all deicing systems have been automatically activated.

NOTE

ICE DETECTED will only be displayed in AUTO mode.

1 - DE ICE SYSTEM mode switch .... MAN

2 - All deicing systems .... Check ON

When **NO ICE DETECTED** *comes ON:*

Icing conditions are no longer detected by the ice detector.

3 - DE ICE SYSTEM mode switch .... As required

End of procedure.

ICE DETECTION FAIL 1 / 1

Indicates a failure of the ice detector or of the DE ICE SYSTEM panel printed circuit.

1 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

NOTE

In case of failure of the DE ICE SYSTEM panel printed circuit, INERT SEP / AIRFRAME DE ICE / PROP DE ICE / WINDSHIELD systems will be forced to ON for the remainder of the flight. There is no time limitation to the use of deicing systems.

End of procedure.

3A.12 - Avionics Miscellaneous

ESP FAIL 1 / 1

Indicates that pitch, roll, high speed and AoA protections are inoperative.

Autothrottle, including engine protection system, may also be inoperative.

► Fly the airplane ◄

1 - Maintain the airplane inside the flight envelope.

Flaps UP	**105 < KIAS < 266**
Flaps TO	**100 < KIAS < 178**
Flaps LDG	**85 < KIAS < 122**

2 - Continue the flight.

Inform maintenance department.

End of procedure.

ESP DEGRADED IAS 1 / 1

Indicates that the high speed protection is inoperative.

Autothrottle, including engine protection system, may also be inoperative.

► Fly the airplane ◄

1 - Airspeed .... Maintain below 266 KIAS

2 - Continue the flight.

Inform maintenance department.

End of procedure.

ESP DEGRADED AOA 1 / 1

Indicates that the AoA protection at low speed is inoperative.

► Fly the airplane ◄

1 - Airspeed .... Maintain above 1.3Vs

Flaps UP	**105 < KIAS < 266**
Flaps TO	**100 < KIAS < 178**
Flaps LDG	**85 < KIAS < 122**

2 - Continue the flight.

Inform maintenance department.

End of procedure.

Airspeed Indicating System Failure 1 / 1

Symptoms: erroneous indication in flight.

1 - PITOT L/R & STALL HTR switch .... Check ON

If symptoms persist:

2 - ALTERNATE STATIC SOURCE selector .... Pull thoroughly

3 - Use standby instrument only.

If symptoms persist, as well as on the electronic standby instrument on the left-side instrument panel:

4 - Perform a precautionary approach maintaining an adequate airspeed.

End of procedure.

AP ON YD OFF 1 / 1

Indicates that the autopilot is ON while Yaw Damper is OFF, so no automatic rudder trim is available.

1 - Yaw Damper status .... Check

If necessary:

2 - Yaw Damper status .... Correct

End of procedure.

Autopilot or Electric Pitch Trim Malfunction 1 / 1

CAUTION

When disconnecting the autopilot after a pitch trim malfunction, hold the control wheel firmly. Up to 30 pounds of force on the control wheel may be necessary to hold the airplane level.

1 - AP/TRIM DISC pushbutton .... Press and hold

NOTE

When AP/TRIM DISC pushbutton is pressed and held, autothrottle also disengages.

2 - AP/TRIMS switch .... OFF

3 - AP/TRIM DISC pushbutton .... Release

If necessary:

4 - Control wheel .... Retrim

End of procedure.

Dual GPS/SBAS failure (DR or GPS LOI annunciation on HSI) 1 / 2

Indicates a loss of GPS/SBAS navigation data.

When both GPS/SBAS receivers are inoperative or GPS navigation information is not available or invalid, the Garmin system will enter one of two modes:

- Dead Reckoning mode (DR), or
- Loss Of Integrity mode (LOI).

The mode is indicated on the HSI by an amber **DR** or **GPS LOI**.

Which mode is active depends on the distance from the destination airport in the active flight plan.

If the **GPS LOI** annunciation is displayed, revert to an alternate means of navigation appropriate to the route and phase of flight.

In Dead Reckoning mode, the MAP–NAVIGATION MAP will continue to be displayed with a ghosted airplane icon in the center and an amber **DR** overwriting the icon. Airplane position will be based upon the last valid GPS position, then estimated by Dead Reckoning methods. Changes in true airspeed, altitude, or winds aloft can affect the estimated position substantially. Dead Reckoning is only available in Enroute mode; Terminal and Approach modes do not support DR. Course deviation information will be displayed as an amber CDI on both PFDs and will remain for up to 20 minutes after GPS position data has been lost. The autopilot and/or flight director may be coupled in GPS mode while the system is in Dead Reckoning mode.

Refer to the Garmin Pilot's Guide for further information.

Revert to an alternate means of navigation appropriate to the route and phase of flight.

If alternate navigation sources (ILS, LOC, VOR, DME, ADF) are available:

1 - Navigation .... Use alternate sources

If no alternate navigation sources are available:

Dead Reckoning (DR) Mode - Active when the airplane is greater than 30NM from the destination airport:

2 - Navigation ...... Use the airplane symbol, magenta course line on the map display and the amber CDI for course information

Continue ►

Dual GPS/SBAS failure (DR or GPS LOI annunciation on HSI) 2 / 2

► *Continuing*

NOTE

All information normally derived from GPS turns amber. All of this information will become less accurate over time.
TAWS is inoperative.
DR mode uses heading, true airspeed, last known wind data, and the last known GPS position to estimate the airplane's current position. DR information will be available for a maximum of 20 minutes.
MAP – TRAFFIC MAP display is not dependent on GPS information.
The position of displayed traffic relative to the airplane symbol on the map is still accurate.

Loss Of Integrity (LOI) Mode - Active when the airplane is within 30 NM of departure airport (as calculated from the previous GPS or DR position):

3 - Navigation .... Fly towards known visual conditions, use ATC or other information sources as possible

NOTE

All information derived from GPS or DR will be removed from the displays.
TAWS is inoperative.
The airplane symbol is removed from all maps. The map will remain centered at the last known position. NO GPS POSITION will be annunciated in the center of the map.

End of procedure.

APR DWNGRADE 1 / 1

Indicates that the Garmin system downgrades the approach upon navigation system integrity failure during a GPS LPV, LNAV/VNAV.

This may be also indicated by an annunciation change on the HSI.

1 - System will automatically downgrade to LNAV/VNAV or LNAV.

2 - Update minimums as appropriate.

NOTE

In some cases, the approach may be downgraded without **APR DWNGRADE** being displayed to the crew. Please consider the HSI approach annunciation as the primary mean to identify the current mode of operation.

NOTE

For more details on the approach downgrading process, refer to Paragraph Garmin Integrated Flight Deck (GIFD) Approaches in Subsection 7.15. .

End of procedure.

PIT in AP Vertical Mode during FD Approach with Vertical Guidance 1 / 1

Indicates the loss of vertical integrity signal during LPV or LNAV/VNAV.

This may be indicated by an annunciation change on the HSI.

Symptoms:

- *AP mode from GP flashing 5 seconds to* **PIT***,*
- *VDI is flagged and indicates* **NO GP***.*

► Fly the airplane ◄

Actions:

If automatic downgrade to LNAV:

1 - Update minimums as appropriate.

If not:

► Perform a go-around ◄

End of procedure.

VDI or VDI on Approach 1 / 1

Symptoms:

- *VDI or VDI at bottom of VDI window.*

► Fly the airplane ◄

If possible:

1 - Use LNAV minimums.

If not:

► Perform a go-around ◄

End of procedure.

Left PFD Failure 1 / 1

► Fly the airplane ◄

1 - L.H. DISPLAY BACKUP .... Engage

TAS system is lost.

2 - AT .... Disconnect

3 - XFR button (on AFCS) .... Press / to right side then left side

4 - AT .... As required

End of procedure.

AHRS Failure 1 / 2

Symptoms: Autopilot is disconnected.

- *On PFD(s) comparator window:*

  HDG *and/or* **PIT** *and/or* **ROL** *annunciation(s),*
- *On PFD(s) reversionary sensor window:*

  BOTH ON AHRS1 *or* **BOTH ON AHRS2** *annunciation.*

Lost systems:

- AHRS1 or AHRS2,
- Autopilot (AP).

Systems still operative:

- Flight Director (FD), when engaged again,
- Autothrottle remains engaged or may be engaged.

Actions:

Autopilot is not operative.

1 - AHRS1 and/or AHRS2 breaker .... Check pushed

If **BOTH ON AHRS1** *or* **BOTH ON AHRS2** *annunciation is associated to* **HDG** *and/or* **PIT** *and/or* **ROL** *annunciation(s):*

2 - Fly the airplane manually.

If pilot wishes:

3 - FD default mode .... Engage
PIT and ROL

4 - FD specific modes .... Engaged as desired
HDG, NAV, ALT, etc

5 - Fly the airplane manually to follow Command Bars.

End of procedure ■

Continue ►

AHRS Failure 2 / 2

► *Continuing*

If all annunciations, **HDG** *and/or* **PIT** *and/or* **ROL** *go off, refer to following condition:*

If **BOTH ON AHRS1** *or* **BOTH ON AHRS2** *annunciation is not associated to* **HDG** *and/or* **PIT** *and/or* **ROL** *annunciation(s):*

6 - PFD1 and PFD2 SENSOR softkeys .... Press

7 - AHRS1 on PFD1 and/or AHRS2 on PFD2 .... Reset

8 - **BOTH ON AHRS1** or **BOTH ON AHRS2** annunciation .... Check OFF

9 - FD .... Use normally
As desired

End of procedure.

ADC Failure 1 / 1

Symptoms:

- *On PFD(s) comparator window:*

  IAS *and/or* **ALT** *annunciation(s).*
- *On PFD(s) reversionary sensor window:*

  BOTH ON ADC1 *or* **BOTH ON ADC2** *annunciation.*

Lost systems:

- ADC1 or ADC2.

Actions:

Autopilot and autothrottle are still operative.

1 - ADC1 and/or ADC2 breaker .... Check pushed

If **BOTH ON ADC1** *or* **BOTH ON ADC2** *annunciation is associated to* **IAS** *and/or* **ALT** *annunciation(s):*

2 - No action required.

End of procedure ■

If all annunciations, **IAS** *and* **ALT** *go off, refer to following condition:*

If **BOTH ON ADC1** *or* **BOTH ON ADC2** *annunciation not associated to* **IAS** *and/or* **ALT** *annunciation(s):*

3 - PFD1 and PFD2 SENSOR softkeys .... Press

4 - ADC1 on PFD1 and/or ADC2 on PFD2 .... Reset

5 - **BOTH ON ADC1** or **BOTH ON ADC2** annunciation Check OFF

NOTE

AT may be possibly disengaged.

End of procedure.

MFD Failure 1 / 1

NOTE

If PFD 2 is in full screen mode, it will be splitted a few seconds after MFD failure.

Lost systems:

- MFD.

Actions:

1 - L.H. DISPLAY BACKUP button .... Press

2 - MFD breaker .... Check pushed

End of procedure.

XPDR1 FAIL or XPDR2 FAIL 1 / 1

Indicates that transponder 1 [or transponder 2] is inoperative.

► Fly the airplane ◄

If transponder 2 [or transponder 1] is available:

1 - Set transponder 2 [or transponder 1] as active.

2 - Continue the flight.

Inform maintenance department.

End of procedure ■

If transponder 2 [or transponder 1] is unavailable:

3 - Inform Air Traffic Control of the loss of the second transponder.

4 - Leave controlled airspace.

5 - Continue the flight.

Inform maintenance department.

End of procedure.

XPDR1 ADS-B FAIL or XPDR2 ADS-B FAIL 1 / 1

Indicates that ADS-B OUT function of transponder 1 [or transponder 2] is inoperative.

Other functions may remain available.

► Fly the airplane ◄

If transponder 2 [or transponder 1] is available:

1 - Restore ADS-B OUT function by setting transponder 2 [or transponder 1] as active.

2 - Continue the flight.

Inform maintenance department.

End of procedure ■

If transponder 2 [or transponder 1] is unavailable:

3 - Inform Air Traffic Control.

4 - Leave ADS-B OUT airspace.

5 - Continue the flight.

Inform maintenance department.

End of procedure.

GWX FAIL 1 / 1

Indicates that GWX weather radar is inoperative.

NOTE

No real time weather data available.

► Fly the airplane ◄

1 - WXR breaker .... Check pushed

2 - Continue the flight by using other weather data source, and adjust flight route.

Inform maintenance department.

End of procedure.

TCAS FAIL 1 / 1

Indicates that Traffic Advisory System is inoperative.

NOTE

No active traffic available, but ADS-B IN traffic may still be displayed.

► Fly the airplane ◄

Inform maintenance department.

End of procedure.

TRAFFIC FAIL 1 / 1

Indicates that Traffic Advisory System is inoperative.

NOTE

No active traffic available, but ADS-B IN traffic may still be displayed.

► Fly the airplane ◄

Inform maintenance department.

End of procedure.

EXCEEDANCE 1 / 1

Indicates that the avionics has recorded:

- *an exceedance of at least one engine parameter,*
- *an airspeed exceedance (> V_{MO}).*

EXCEEDANCE *is only displayed at engine shutdown.*

Inform maintenance department before next flight.

End of procedure.

3A.13 - Miscellaneous

CARGO DOOR 1 / 1

Indicates that front cargo door is open.

On ground:

1 - Check and close the door.

In flight:

► Fly the airplane ◄

2 - Airspeed .... Reduce
To minimum available

► Land as soon as practicable ◄

End of procedure.

GPU DOOR 1 / 1

Indicates that GPU door is open.

On ground:

1 - Check and close the door.

In flight:

► Fly the airplane ◄

2 - Airspeed .... Reduce
To minimum available

► Land as soon as practicable ◄

End of procedure.

IGNITION 1 / 1

Indicates that ignition exciter is running.

1 - IGNITION pushbutton .... Check status

If weather permits:

2 - IGNITION pushbutton .... AUTO
Status light in blue

► Fly the airplane ◄

NOTE

IGNITION pushbutton may be left ON for a long period.

End of procedure.

LMTD DISPATCH 1 / 1

Indicates that a minor FADEC system component fault occured.

LMTD DISPATCH *is only displayed while the airplane is on ground.*

Airplane dispatch is allowed.

The failure must be repaired within 50 flight hours after the message's first appearance. The full duration of the flight after which **LMTD DISPATCH** first appeared must be counted when calculating the 50-flight-hour time period.

Calculating the 50-flight-hour time period is the pilot's responsibility.

Inform maintenance department to anticipate maintenance action.

End of procedure.

Section 4

Normal Procedures

Table of Contents

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4.1 - General

This section provides procedures for the conduct of normal operation of TBM airplane.

The first part of this section lists the normal procedures required as a check list.

The amplified procedures are developed in the second part of the section.

The normal procedures for optional systems are given in Section 9: Supplements of the POH.

Intentionally left blank

4.2 - Airspeeds for Normal Operation

Conditions:

- Takeoff weight: 7,615 lbs (3,454 kg)
- Landing weight: 7,110 lbs (3,225 kg)

Operation	Configuration	Airspeed (KIAS)
Rotation airspeed (V_R)	Flaps TO	90
Best rate of climb speed (V_Y)	Landing gear and flaps UP	124
Best angle of climb speed (V_X)	Landing gear and flaps UP	100
Maximum airspeed	Flaps TO Flaps LDG	178 122
Maximum airspeed landing gear down	Landing gear DN	178
Maximum landing gear operating airspeeds	Extension Retraction	178 150
Approach airspeed	Flaps LDG	85
Maximum operating speed (V_{MO})	Landing gear and flaps UP	266
Glide airspeed (maximum L/D ratio)	Landing gear and flaps UP	120

Intentionally left blank

4.3 - Checklist Procedures

Inside Inspection 1 / 2

Initial inside inspection and outside inspection performed. Oxygen cylinder open.

1 - Cabin door and pilot door, if installed .... Closed / Locked

2 - Baggage .... Stowed

3 - EMERGENCY EXIT pin .... Removed

4 - Seats, pedals, harness .... Adjust / Lock

5 - PASSENGER OXYGEN .... STBY

6 - OXYGEN .... ON

7 - Crew oxygen masks .... Test

8 - EXT LIGHTS .... All OFF

9 - INT LIGHTS .... All OFF

10 - Crash lever .... Down

11 - ENGINE MODE .... OFF

12 - AUX BP .... OFF

13 - STARTER .... Check OFF

14 - AP/TRIMS .... OFF

15 - ELT .... ARM/OFF

>> Up to S/N 1463

16 - SEATS HTRS MASTER .... OFF

17 - CB LIGHT .... OFF

>> From S/N 1465

18 - SEATS HTRS MASTER .... OFF
Status light in white

19 - CB LIGHT .... OFF
Status light in white

Continue ►

Inside Inspection 2 / 2

► *Continuing*

>> *All*

20 - PARK BRAKE .... Reset / ON

21 - LANDING GEAR .... DN

22 - BLEED .... OFF/RST

23 - FAN .... OFF

24 - THROTTLE .... IDLE

25 - FUEL TANK SELECTOR .... Open / L or R

26 - ALTERNATE STATIC SOURCE .... / Pushed

27 - EMERGENCY RAM AIR .... / Pushed

28 - ESS BUS TIE .... NORM / Guarded

29 - Breakers .... All pushed

End of procedure.

Before Starting Engine 1 / 1

1 - Crash lever .... Up
2 - ATIS .... Copied
3 - Start clearance .... As required
4 - SOURCE .... BATT (battery start) or GPU (GPU start)
5 - GENERATOR .... MAIN
6 - TEST .... Press
7 - MICRO/MASK .... MICRO / Guarded
8 - DE-ICE SYSTEM mode .... AUTO
9 - PITOT L/R & STALL HTR .... OFF
10 - INERT SEP .... OFF
11 - BLEED .... OFF/RST
12 - DEFOG .... Check OFF
13 - Landing gear position indicator .... Test
14 - GND FEATHER .... Check OFF / Guarded
15 - FUEL SEL .... MAN
16 - MFD .... Initialize
17 - Fuel on board .... Check
18 - VOLTS: BAT > 24.5 V / GPU ≈ 28 V .... Check
19 - CAS .... Check
20 - FLAPS .... UP

End of procedure.

Engine Start 1 / 2

CAUTION

After aborted engine starts, wait:
1 minute / 5 minutes / 30 minutes before 2nd / 3rd / 4th new engine start.

1 - THROTTLE .... IDLE

2 - IGNITION .... Check AUTO

3 - ENGINE MODE .... RUN / Guarded

4 - AUX BP .... AUTO

5 - **AUX BP ON** .... Check ON

6 - Propeller area .... Clear

7 - STARTER .... ON
2 seconds, then release

8 - ITT, Ng, OIL °C and OIL PSI .... Monitor

Aborting start procedure:

If ITT > 850 °C:

Manually abort the start sequence as follows:

9 - STARTER .... ABORT
2 seconds, then release

CAUTION

Do not attempt another engine start after automatic or manual aborted start, except if the previous start sequence was aborted due to:
- low battery voltage,
- FUEL TANK SELECTOR in the OFF position, or
- other than engine-related reason.

For all other cases, the airplane is grounded. Inform maintenance department.

End of procedure ■

Continue ►

Engine Start 2 / 2

► *Continuing*

When Ng > 45%:

10 - Starter .... Check OFF automatically

End of procedure.

Manual Dry Motoring 1 / 1

1 - THROTTLE .... IDLE

2 - ENGINE MODE .... OFF

3 - IGNITION .... Check AUTO

4 - AUX BP .... OFF or AUTO

5 - **AUX BP ON** .... Check OFF

6 - Engine crank mode .... ON

7 - Propeller area .... Clear

8 - STARTER .... ON

Maintain ON during the motoring sequence

After 30 seconds maximum:

9 - STARTER .... OFF

10 - Engine crank mode .... OFF

End of procedure.

After Engine Start with GPU 1 / 1

1 - SOURCE .... BATT

2 - AP/TRIMS .... ON / Test OK

3 - THROTTLE .... IDLE

4 - GND FEATHER .... ON

>> postMod: MOD70-0753-00C

5 - **FEATHER SECURED** .... Check ON

>> All

When Np < 400 RPM:

6 - GPU .... Disconnect

7 - **GPU DOOR** .... Check OFF

8 - GND FEATHER .... OFF

End of procedure.

After Engine Start 1 / 1

1 - THROTTLE .... IDLE
For 2 minutes

2 - Ng .... Check

3 - OIL °C and OIL PSI .... Check

4 - AUX BP .... Check AUTO

5 - FUEL SEL .... AUTO

6 - SHIFT .... Test

7 - AP/TRIMS .... ON / Test OK

Perform generator test.

When MAIN LOAD < 80 A:

8 - GENERATOR .... ST-BY
To perform test

9 - GENERATOR .... MAIN

10 - CAS .... Check

11 - FAN .... As required

>> Up to S/N 1463

12 - SEATS HTRS MASTER .... As required

>> From S/N 1465

13 - SEATS HTRS MASTER .... As required
Check status light color

>> All

14 - BLEED .... AUTO

End of procedure.

Before Taxiing 1 / 1

1 - Standby instruments .... Check

2 - DE ICE SYSTEM mode .... MAN

3 - All deicing systems .... Check ON

4 - Visually check functioning of deicer boots during one total cycle.

5 - DE ICE SYSTEM mode .... AUTO

6 - INERT SEP .... ON

7 - Flight controls .... Check

Perform AP / TRIMS test.

8 - FLAPS .... UP

MFD

If requested:

9 - FPL .... Set

10 - LFE .... Set / Check

11 - WX radar .... STBY

12 - EIS .... Check

13 - CAS .... Check

14 - TAXI lights .... ON

End of procedure.

Before Line Up 1 / 2

1 - LDG lights .... ON
2 - NAV .... ON
3 - STROBE .... ON
4 - IGNITION .... AUTO
5 - AUX BP .... AUTO
6 - FUEL SEL .... AUTO
7 - DE ICE SYSTEM mode .... As required
8 - PITOT L/R & STALL HTR .... ON
9 - TRIMS .... TO
10 - FLAPS .... TO
11 - FAN .... As required
12 - BLEED .... AUTO
13 - LFE .... Check
14 - Fuel gauges .... Check imbalance
15 - BATT AMPS .... Check below 50 AMPS
16 - EIS .... Check
17 - CAS .... Check
18 - Altimeters setting .... Set / Check
19 - Instruments departure setting .... Check
20 - SID (PROC) .... Set
21 - ALT SEL .... Set
22 - XPDR squawk .... Set

Continue ►

Before Line Up 2 / 2

► *Continuing*

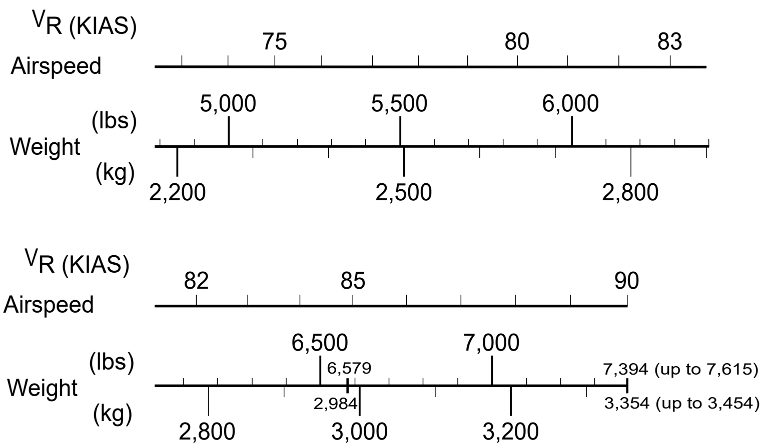
CAUTION

Setting the INERT SEP switch to ON may result in maximum available TRQ being lower than 100%, depending on runway elevation and outside temperature – refer to Subsection 5.9. Takeoff Distances.

23 - Takeoff distances .... Check
Refer to Subsection 5.9. Takeoff Distances

24 - INERT SEP .... As required
Depending on external conditions and takeoff performance

25 - Rotation airspeed (V_R) .... Check



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End of procedure.

Normal Takeoff 1 / 1

1 - ADI / HSI / headings .... Check

2 - AT .... As required

3 - Apply brakes and increase engine power.

4 - Brakes .... Release

5 - THROTTLE .... Full forward

6 - Max TRQ .... Check
Corresponding to takeoff performance tables

CAUTION

Do not engage AT below 1,000 ft (300 m) AGL in case of takeoff without autothrottle.

7 - Rotate at V_R.

8 - Attitude .... 10° Up

When vertical speed is positive:

9 - Brakes .... Apply

10 - LANDING GEAR .... UP

When airspeed above 115 KIAS:

11 - FLAPS .... UP

End of procedure.

Short Takeoff 1 / 1

1 - ADI / HSI / headings .... Check

2 - AT .... OFF

3 - Apply brakes and increase engine power.

4 - THROTTLE .... Full forward

5 - Max TRQ .... Check
Corresponding to takeoff performance tables

6 - Brakes .... Release

7 - Rotate at V_R.

Weight < 6,579 lbs (2,984 kg):

8 - Attitude .... 15° Up

Weight > 6,579 lbs (2,984 kg):

9 - Attitude .... 12.5° Up

When vertical speed is positive:

10 - Brakes .... Apply

11 - LANDING GEAR .... UP

When airspeed above 115 KIAS:

12 - FLAPS .... UP

End of procedure.

After Takeoff 1 / 1

1 - LANDING GEAR .... Check UP
2 - FLAPS .... Check UP
3 - TRQ .... Check 100% max.
4 - EIS .... Check
5 - CAS .... Check
6 - DE ICE SYSTEM .... As required
7 - INERT SEP .... As required

End of procedure.

Climb 1 / 1

1 - ALT SEL .... Check
2 - Altimeters setting .... As required
3 - AP / YD .... Check
4 - AT .... As required
5 - TRQ adjustment / ITT / Ng .... Check
6 - EIS .... Check
7 - CAS .... Check
8 - WX radar .... As required
9 - Pressurization .... Check
10 - Fuel gauges .... Check
11 - AMPS / VOLTS .... Check
12 - DE ICE SYSTEM .... As required
13 - INERT SEP .... As required
14 - LDG lights .... As required

End of procedure.

Cruise 1 / 1

1 - Altimeters setting .... Check
2 - AP / YD .... Check
3 - AT .... As required
4 - TRQ adjustement / ITT / Ng .... Check
5 - EIS .... Check
6 - CAS .... Check
7 - Pressurization .... Check
8 - Fuel gauges .... Check
9 - AMPS / VOLTS .... Check
10 - DE ICE SYSTEM .... As required
11 - INERT SEP .... As required
12 - LDG lights .... As required
13 - Top of descent .... Computed

End of procedure.

Before Descent 1 / 1

1	- Before approach briefing	Completed
2	- Altimeters setting	Check
3	- Pressurization	Check
4	- LFE	Check
5	- Fuel gauges	Check
6	- AMPS / VOLTS	Check
7	- DE ICE SYSTEM mode	As required
8	- INERT SEP	As required

End of procedure.

Approach 1 / 1

1 - Altimeters setting (QNH) .... Set / Check

2 - Minimums .... Set / Check

3 - COM / NAV / GPS .... Set / Check

4 - Pressurization .... Check

5 - LFE .... Check

6 - Fuel gauges .... Check

7 - AMPS / VOLTS .... Check

8 - DE ICE SYSTEM mode .... As required

9 - INERT SEP .... ON

When below FL 100:

10 - LDG lights .... ON

End of procedure.

Final Approach (in GS) or Downwind Leg (VMC) 1 / 1

1 - LDG lights .... ON

2 - LANDING GEAR .... DN
Check three green

3 - FLAPS .... TO

End of procedure.

Short Final (Around 500 ft) 1 / 1

1 - LANDING GEAR .... Check
DN and three green

2 - FLAPS .... LDG

3 - AP / YD / AT .... Disconnect

End of procedure.

Runway Clear 1 / 1

1 - THROTTLE .... Adjust
To get minimum TRQ for taxiing

2 - TAXI lights .... ON

3 - NAV .... ON

4 - STROBE .... OFF

5 - DE ICE SYSTEM mode .... AUTO

6 - TRIMS .... Reset to TO

7 - FLAPS .... UP

8 - FAN .... As required

9 - XPDR .... Check

10 - WX radar .... Check STANDBY

End of procedure.

Shutdown 1 / 2

1 - PARK BRAKE .... Set ON
2 - EXT LIGHTS .... All OFF
3 - INT LIGHTS .... As required
4 - OXYGEN .... OFF
5 - FUEL SEL .... MAN
6 - AP/TRIMS .... OFF

>> Up to S/N 1463

7 - SEATS HTRS MASTER .... OFF

>> From S/N 1465

8 - SEATS HTRS MASTER .... OFF
Status light in white

>> All

9 - FAN .... OFF
10 - BLEED .... OFF/RST
11 - THROTTLE .... IDLE
Verify 2 min cool down
12 - ENGINE MODE .... OFF

After automatic dry motoring if any:

13 - FUEL TANK SELECTOR .... OFF
14 - INERT SEP .... OFF
15 - **AUX BP ON** .... Check ON
16 - AUX BP .... OFF
17 - GENERATOR .... OFF

After inertial separator retraction, about 40 seconds:

18 - SOURCE .... OFF
19 - Crash lever .... Pull down

Continue ►

Shutdown 2 / 2

► *Continuing*

20 - Standby instruments .... OFF

End of procedure.

Outside Check after Shutdown 1 / 1

1 - Oxygen cylinder (right wing fairing) .... Close

CAUTION

Wait for exhaust stubs to cool temperature before installing covers.

2 - Install air inlet and static port plugs, and exhaust and pitot covers.

NOTE

Check oil level within 15 to 20 minutes following engine shutdown.

End of procedure.

4.4 - Amplified Procedures

Preflight Inspection 1 / 16

The preflight inspection procedure is based on a scanning method.

It is divided in 6 subparts to cover all items of the preflight – see Figure 4.4.1.

I - Initial inside inspection

II - Cabin

III - Left-side wing

IV - Fuselage forward section

V - Right-side wing

VI - Fuselage rear section / Empennages

WARNING

During outside inspection, visually check inspection doors and airplane general condition. Check for systems and parts attachments / deflections / leaks / cracks / deteriorations / non-obstructions / nicks / numbers / free movements / position.
In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces.
In case of night flight, check good operation of all navigation lights, landing lights, strobe lights and make sure that an emergency lamp is on board.
If icing conditions are foreseen, particularly check good functioning of all electrical and pneumatic ice protection systems.
Check that type and quantity of fuel used for refueling are correct.
Remove covers on: pitots (2), static ports (2), static dischargers (2), engine air inlet (1), air inlets (2), exhaust cover and propeller locks (2).

WARNING

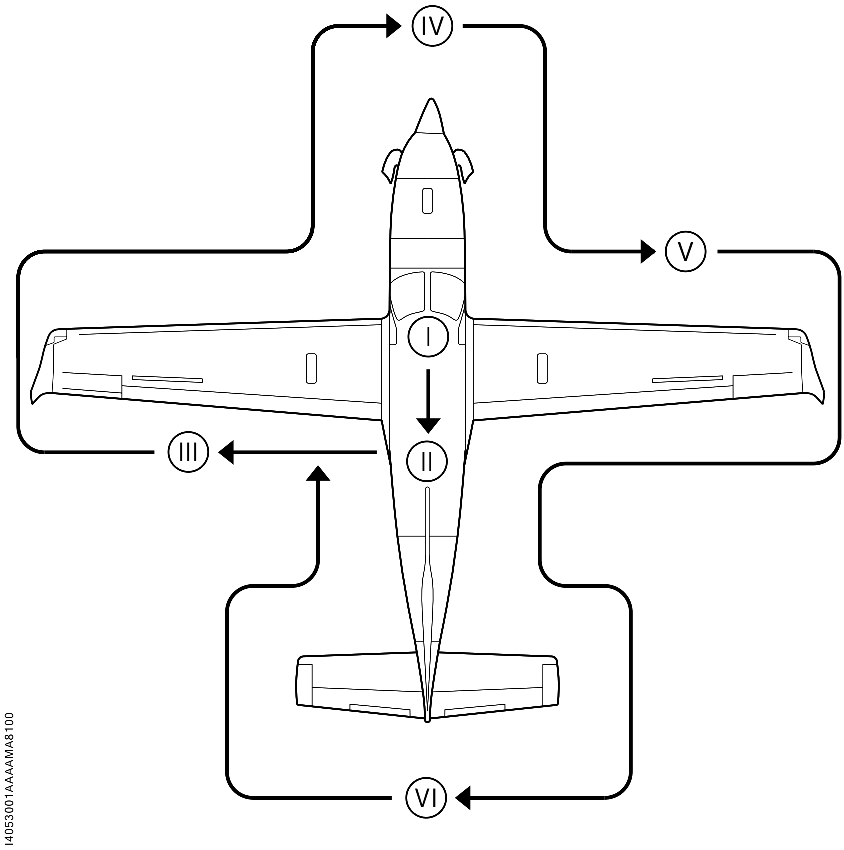
Remove tie-downs.
For quantities, products and specifications of products and materials currently used, refer to Paragraph Maintenance in Subsection 8.7. .

Continue ►

Preflight Inspection 2 / 16

► *Continuing*

Figure 4.4.1 - Preflight Inspection



Initial inside inspection

Cockpit - I

Continue ►

Preflight Inspection 3 / 16

► *Continuing*

Left instrument panel

>> Up to S/N 1463

1 - SEATS HTRS MASTER switch .... OFF

>> From S/N 1465

2 - SEATS HTRS MASTER pushbutton .... OFF
Status light in white

>> All

3 - Flight controls lock .... Removed / Stowed

NOTE

The flight controls lock is normally stowed in the front cargo compartment with the towing bar and the blanking covers.

4 - Flight controls deflections .... Check

5 - PARK BRAKE .... ON

6 - LANDING GEAR lever .... DN

ECS and PRESSURIZATION panels

7 - BLEED switch .... OFF/RST

8 - FAN selector .... OFF

9 - FLAPS lever .... UP

10 - THROTTLE .... IDLE

11 - FUEL TANK SELECTOR .... L or R

Open door of emergency landing compartment to check LANDING GEAR emergency control.

12 - Lever .... Pushed down

13 - Bypass selector .... Fully depressed

14 - Door .... In place

Continue ►

Preflight Inspection 4 / 16

► *Continuing*

NOTE

The bypass selector must be pushed at its maximum stop, so as to have the door in place.

Right instrument panel

15 - ALTERNATE STATIC SOURCE selector .... Pushed

16 - EMERGENCY RAM AIR control knob .... Pushed

17 - Breakers panel .... All breakers checked

Upper panel

18 - ELT switch .... ARM/OFF

19 - AP/TRIMS switch .... OFF

ENGINE / FUEL panel

20 - STARTER switch .... Check OFF

21 - AUX BP switch .... OFF

22 - ENGINE MODE switch .... OFF

ELECTRIC POWER panel

23 - Crash lever .... Up

24 - GENERATOR selector .... MAIN

25 - SOURCE selector .... OFF

LIGHTS panels

26 - ACCESS lighting .... Check

To ensure that the fuse of the BATT BUS operates correctly

27 - INT LIGHTS panel .... All OFF

28 - EXT LIGHTS panel .... All OFF

Continue ►

Preflight Inspection 5 / 16

► *Continuing*

Overhead panel

29 - OXYGEN switch .... OFF

30 - PASSENGER OXYGEN switch .... STBY

31 - Emergency lighting .... Check

ELECTRIC POWER panel

32 - SOURCE selector .... BATT or GPU

ENGINE / FUEL panel

33 - IGNITION pushbutton .... Check AUTO
Status light in blue

34 - FUEL SEL pushbutton .... Check AUTO
Status light in blue

Instrument panel

35 - Standby instrument battery indicator symbol .... Not displayed

If a battery symbol appears on the standby instrument display, airplane takeoff is not allowed until the situation is resolved. Refer to the battery details in the standby instrument Pilot's Guide for further information.

If BATT source:

36 - Voltage .... Check > 24.5 Volts

NOTE

If not, use a GPU or charge battery. This minimum voltage is not an absolute guarantee for a correctly charged battery. It is recommended to use a GPU in cold weather, when airplane has been stopped more than three hours at a temperature below -10 °C (+14 °F).

Continue ►

Preflight Inspection 6 / 16

► *Continuing*

If GPU source:

CAUTION

Low voltage (around 24.5 V) may indicate that only the battery is powering the airplane and not the pair GPU + battery. Make sure that a GPU is connected and powering the airplane.

37 - Voltage .... Check ≈ 28 Volts

NOTE

If using a GPU, ensure that it provides a 28-Volts regulated voltage, with negative on earth, as well as it supplies 800 A minimum and 1,000 A maximum. See placard located near ground power receptacle door.

EXT LIGHTS panel

38 - TAXI/LDG lights .... OFF

39 - STROBE switch .... ON

40 - NAV switch .... ON

DE-ICE SYSTEM panel

CAUTION

When the engine is shutdown, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.

41 - DE-ICE SYSTEM mode switch .... Check AUTO

42 - ICE LIGHT pushbutton .... ON
Status light in green

43 - PITOT L/R & STALL HTR switch .... OFF

Continue ►

Preflight Inspection 7 / 16

► *Continuing*

44 - From outside the airplane, check operation of all lights and stall warning alert.

Reentering the airplane

EXT LIGHTS panel

45 - EXT LIGHTS panel .... All OFF

Instrument panel, MFD

46 - CAS display .... Check

47 - Left and right fuel quantities .... Check

Pedestal

48 - FLAPS lever .... LDG

LANDING GEAR panel

49 - Warning lights .... Check three green ON

50 - LIGHT TEST pushbutton .... Press
Check all lights flashing

DE-ICE SYSTEM panel

WARNING

Do not touch pitots nor stall warning vane. They could be hot enough to burn skin.

51 - ICE LIGHT pushbutton .... OFF
Status light in white

52 - PITOT L/R & STALL HTR switch .... ON

53 - **PITOT HT ON L-R** .... Check ON

54 - **STALL HEAT ON** .... Check ON

Continue ►

Preflight Inspection 8 / 16

► *Continuing*

NOTE

Correct operation of pitot (PITOT L and R) tube heating elements and of stall aural warning system (STALL HTR) is indicated by display of corresponding CAS message, when control switches are ON.

55 - PITOT L/R & STALL HTR switch .... OFF

ELECTRIC POWER panel

56 - Crash lever .... Pull down

Cabin - II

57 - Cabin fire extinguisher .... Pressure / Attachment

58 - Seats / belts .... Check

59 - Windows .... General condition / No crack

60 - Emergency exit .... Closed / Locked

61 - Anti-theft safety pin .... Removed / Stowed

62 - Baggage compartment .... Straps in place

>> *6-seat accommodation*

63 - Partition net .... General condition / In place

>> *4-seat accommodation and baggage transportation*

64 - Large net or small net .... General condition / In place

>> *All*

65 - Doors operation .... Check

66 - Stairs condition .... Condition / Play

Outside inspection

The preflight inspection described in Figure 4.4.1 is recommended before each flight.

Continue ►

Preflight Inspection 9 / 16

► *Continuing*

NOTE

If a preflight inspection is performed just after the engine shutdown, be careful because the leading edge of engine air inlet, as well as exhaust stubs may be very hot.

If the airplane was in long term storage or if it has undergone major maintenance or if it has been used from emergency airfields, a thorough outside inspection is recommended.

When the airplane is stored outside, the use of the flight control lock and blanking covers is recommended. Propeller should be tied down to prevent rotation without oil pressure.

When the airplane is stored for extended periods of time, a thorough preflight inspection is recommended. Particular attention should be paid to possible blockages in airspeed sensing lines, foreign objects in engine intake and exhaust stubs and water contamination of the fuel system.

Left-side wing - III

67 - Flap .... Condition / Play
Also inspect the lower surface, as well as flap fairing, where pebbles (and even ice in case of slush on the runway) may have accumulated.

68 - Aileron and trim / Spoiler .... Condition / Free movement / Deflection

NOTE

Ensure there are no foreign objects in the spoiler recess. When ailerons are in the neutral position, it is normal that spoilers are lightly extended at upper surface.

69 - Trailing edge static discharger .... Condition / Number / Attachment

70 - Winglet / nav. lights / strobe / landing light /recognition light / taxi light .... Condition

71 - OAT probe .... Condition

72 - Fuel tank cap .... Closed / Locked

Continue ►

Preflight Inspection 10 / 16

► *Continuing*

NOTE

Fuel tank caps must be tight (which is characterized by a consequent exertion to lock and unlock them) to avoid water infiltration in case of rain on ground, and to avoid fuel loss in flight.

73 - Fuel tank air vent .... Unobstructed

NOTE

Air vent is not likely to be obstructed by ice or water, as it is located in a wing lower surface recess.

74 - Left-side pitot .... Condition

Wing lower surface

75 - Wing lower surface .... No leak

76 - Check fuel tank access doors for leaks.

77 - Check for surface damage.

78 - Wing deicer boots .... Condition / Attachment

NOTE

Care must be taken when refuelling the airplane to avoid damaging the wing deicer boots. A protective apron should be used if possible.

79 - Fuel tank drain (two on each wing) .... Drain
Fuel free of water and contamination

Continue ►

Preflight Inspection 11 / 16

► *Continuing*

NOTE

If water and/or contamination is present, repeatedly take samples from all of the fuel tank drain valves until water and/or contamination has been removed. A long term storage of the airplane causes water accumulation in fuel, which absorbs additive. This phenomenon occurs when an excessive quantity of water accumulates in fuel tank sumps. For servicing operations relative to fuel additives, refer to Paragraph Fuel in Subsection 8.7. .

Left-side main LANDING GEAR

80 - Shock absorber .... Check

81 - Doors .... Check

82 - Tire .... Check

83 - Wheel well .... Check

NOTE

If airplane has been used from muddy airfields or in snow, check wheel wells to make sure they are clean and not obstructed.
Check frequently all landing gear retraction mechanism components, shock-absorbers, tires and brakes. This is particularly important for airplanes used from hilly fields.
Improperly serviced or worn shock-absorbers may result in excessive loads being transmitted to the airplane structure during ground operations. Without passengers and baggages on board, the unpainted surface of the main gear shock absorber tube must be visible about:
- 55 mm (2.17 in) of minimum height with half tank,
- 40 mm (1.57 in) of minimum height with full tanks.

Fuselage forward section - IV

Forward compartment

84 - Inside .... Check

85 - Door .... Close / Lock

Continue ►

Preflight Inspection 12 / 16

► *Continuing*

86 - GPU door .... Closed
If not used

87 - Fuel circuit drain .... Drain
Fuel free of water and contamination

WARNING

If the clogging indicator is extended, red collar visible, the flight is not authorized.

NOTE

If water and/or contamination is present, repeatedly take samples from all of the fuel tank drain valves until water and/or contamination has been removed.

88 - Filter contamination indicator (clogging indicator) .... Check

89 - Left-side exhaust stub .... Condition / No cracks

NOTE

Inspect if possible pressure port located inside exhaust stub. A missing port or a cracked port may hinder correct operation of continuous heating of air inlet lip.

90 - Upper engine cowls .... Open

For the first flight of the day:

91 - Oil cap .... Closed / Locked

92 - Engine oil level .... Check

93 - Fuel pipes .... No leak, deterioration, wear

94 - Engine cowls .... Condition
Closed / Locked

Air inlets

95 - Main .... No cracks / Unobstructed

Continue ►

Preflight Inspection 13 / 16

► *Continuing*

NOTE

Check for no cracks, which are sometimes put in evidence by traces of soot resulting from exhaust gases.

96 - Lateral / upper .... Unobstructed

NOTE

Lateral air inlets, which supply air conditioning system and oil cooler, are provided with blanking covers. It is not the case for upper air inlets of RAM AIR system (circular grille located in front of right-side windshield) and of vapor cycle cooling system (two rectangular grilles located forward of the circular grille).

97 - Propeller and spinner .... No nicks, cracks or oil leaks / Attachment

NOTE

In case of operation from contaminated runways, it is necessary to carefully examine propeller blades, where traces of abrasion may be found. Propeller damage may reduce blade life time and degrade performance. Any propeller damage should be referred to maintenance personnel.

Nose gear

98 - Shock absorber .... Check

99 - Doors .... Check

100 - Tire .... Check

101 - Wheel well .... Check

Continue ►

Preflight Inspection 14 / 16

► *Continuing*

NOTE

Without passengers and baggages on board, the unpainted surface of the nose gear shock absorber tube must be visible about:
- 57 mm (2.24 in) of minimum height with full tanks,
- 63 mm (2.48 in) of minimum height with half tank.

NOTE

Crush or relieve the shock absorber one time or twice before the inspection to remove possible sticking.

In case of doubt, request a check of the shock absorber pressure.

102 - Right-side exhaust stub .... Condition / No cracks

Right-side wing - V

Additional remarks are identical to those of left-side wing.

103 - Fuel tank drain (two on each wing) .... Drain
Fuel free of water and contamination

NOTE

If water and/or contamination is present, repeatedly take samples from all of the fuel tank drain valves until water and/or contamination has been removed.

Right-side main LANDING GEAR

104 - Shock absorber .... Check

105 - Doors .... Check

106 - Tire .... Check

107 - Wheel well .... Check

108 - Wing deicer boots .... Condition / Attachment

Continue ►

Preflight Inspection 15 / 16

► *Continuing*

109 - Stall warning .... Condition / Deflection

110 - Wing lower surface .... No leaks

111 - Fuel tank cap .... Closed / Locked

112 - Fuel tank air vent .... Unobstructed

113 - Right-side pitot .... Condition

114 - Winglet / nav. light / strobe / landing light /recognition light / taxi light .... Condition

115 - Trailing edge static discharger .... Condition / Number / Attachment

116 - Aileron / spoiler .... Condition / Free movement / Deflection

117 - Flap .... Condition / Play

Right-side wing fairing

- 118 - Oxygen cylinder .... Open
- 119 - Oxygen pressure .... Check

120 - Confirm oxygen quantity in regards with the expected flight.

121 - Oxygen pressure .... Check

Fuselage rear section / empennages - VI

Check that outside handle of emergency exit is flush with door skin.

122 - ELT .... ARM/OFF

123 - ELT door .... Closed / Locked

NOTE

> Access to ELT is possible through an inspection door located on the right side of fuselage rear section.

124 - Static pressure ports .... Clean

125 - Ventral fins .... Condition / Attachments

Continue ►

Preflight Inspection 16 / 16

► *Continuing*

NOTE

Ventral fins are made of two parts (one fixed part and one removable part with rear lower inspection door). Check that these two parts are connected by the locking roller.

126 - Inspection door under fuselage .... Attachments / Closed

127 - Horizontal stabilizer deicer boots (right side) .... Condition / Attachments

128 - Elevator and trim .... Condition / Deflection free movement /Trim position

NOTE

To check the deflection, hold the two half-elevators near fuselage, inside both elevator trims to avoid stresses.

129 - Static dischargers .... Condition

130 - Vertical stabilizer deicer boots .... Condition / Attachments

131 - Rudder and trim .... Condition / Trim position

132 - Static dischargers .... Condition

133 - Tail cone / nav. lights / strobe .... Condition

134 - Static pressure ports .... Clean

End of procedure.

Inside Inspection 1 / 4

After completion of preflight inspection.

Initial inside inspection and outside inspection performed. Oxygen cylinder open.

1 - Cabin door and pilot door, if installed .... Closed / Locked

2 - Baggage .... Stowed

3 - EMERGENCY EXIT pin .... Removed

4 - Seats, pedals, harness .... Adjust / Lock

CAUTION

It is recommended to set the seat to the highest position before adjusting the front seats fore or aft. Otherwise, moving the seat may damage the upholstery on the side panels.

Adjust pilot seat and right-side front seat, if occupied:

NOTE

Adjust seats and harnesses to ensure access to flight controls. The pilot at left-side position must be able to easily reach ECS and PRESSURIZATION panels.

5 - Height adjustment .... Max. UP

6 - Fore and aft adjustment .... Adjust and check locking

7 - Height adjustment .... Adjust

8 - Left-side and right-side pedals .... Adjust

9 - Pilot's and passengers' belts and harnesses .... Fasten

Ensure correct positioning of front seat occupiers' safety belt buckles by using the buckle positioners

Continue ►

Inside Inspection 2 / 4

► *Continuing*

NOTE

Check for the correct locking of belt buckles for the pilot and passengers; as well as automatic locking of shoulder harness by exerting a rapid pull on the harness.
Unoccupied seat belts need to be strapped. It is prohibited to fly with these belts unstrapped.

NOTE

Inform passengers that HomeSafe emergency function is intended to automatically land the airplane in case of pilot's incapacitation and that the activation button is located on top of instrument panel.
Ensure that the HomeSafe language is set in accordance with passengers' language.

10 - PASSENGER OXYGEN switch .... STBY

11 - OXYGEN switch .... ON

NOTE

Make sure to set on STBY the PASSENGER OXYGEN switch before setting the OXYGEN switch to ON to avoid passengers mask deployment.

12 - Crew oxygen masks .... Test

NOTE

Press pushbutton PRESS TO TEST: the blinker shall turn red momentarily, then turns transparent.

13 - EXT LIGHTS panel .... All OFF

14 - INT LIGHTS panel .... All OFF

15 - CABIN switch .... OFF

16 - ACCESS switch .... OFF

Continue ►

Inside Inspection 3 / 4

► *Continuing*

17 - PANEL rheostat .... Fully turned to the left

18 - All lights .... OFF

19 - Crash lever .... Down

20 - ENGINE MODE switch .... OFF

21 - AUX BP switch .... OFF

22 - STARTER switch .... Check OFF

23 - AP/TRIMS switch .... OFF

24 - ELT switch .... ARM/OFF

>> Up to S/N 1463

25 - SEATS HTRS MASTER switch .... OFF

26 - CB LIGHT switch .... OFF

>> From S/N 1465

27 - SEATS HTRS MASTER pushbutton .... OFF
Status light in white

28 - CB LIGHT pushbutton .... OFF
Status light in white

>> All

29 - PARK BRAKE .... Reset / ON

30 - LANDING GEAR lever .... DN

31 - BLEED switch .... OFF/RST

32 - FAN selector .... OFF

33 - Pitch trim wheel .... Check

34 - THROTTLE .... IDLE

35 - FUEL TANK SELECTOR .... Open / L or R

36 - ALTERNATE STATIC SOURCE selector .... Normal / Pushed

Continue ►

Inside Inspection 4 / 4

► *Continuing*

37 - EMERGENCY RAM AIR .... Closed / Pushed

38 - ESS BUS TIE switch .... NORM / Guarded

39 - Breakers .... All pushed

End of procedure.

Before Starting Engine 1 / 3

NOTE

Check that the weight and balance are within the correct limits. The maximum takeoff weight depends on C.G. position.

Brief passengers about use of seat belts and the emergency oxygen system, as well as opening the access door and the emergency exit.

1 - Preflight inspection .... Completed

2 - Crash lever .... Up

3 - ATIS .... Copied

4 - Start clearance .... As required

5 - SOURCE selector .... BATT (battery start) or GPU (GPU start)

If one screen (left-side or right-side PFD, or MFD) is missing:

6 - SOURCE selector .... OFF

7 - Wait for 30 seconds.

8 - SOURCE selector .... BATT (battery start) or GPU (GPU start)

If GPU use:

9 - **GPU DOOR** .... Check ON

10 - Voltmeter .... Check 28 Volts ± 0.5 Volt

NOTE

Voltage is higher than 24.5 V which corresponds to the voltage in case of battery use.

If battery use:

11 - Battery voltage .... Check > 24.5 Volts

If battery voltage < 24.5 V:

12 - Ask for a GPU and be ready to a GPU start.

13 - GENERATOR selector .... MAIN

Continue ►

Before Starting Engine 2 / 3

► *Continuing*

14 - **MAIN GEN** .... Check ON

15 - **O2 CYL CLOSED** .... Check OFF

If **O2 CYL CLOSED** *is ON:*

16 - Open isolation valve of the oxygen cylinder in right wing fairing.

17 - Oxygen quantity .... Check
Verify quantity available for the planned flight
See table in procedure In-Flight Available Oxygen Quantity (Crew oxygen masks in NORMAL mode) , and depending on the conditions, see Table 7.11.1, Table 7.11.2 or Table 7.11.3

18 - TEST pushbutton .... Press
Audio / lights / stick shaker

19 - MICRO/MASK switch .... MICRO / Guarded

20 - DE-ICE SYSTEM mode switch .... AUTO

21 - PITOT L/R & STALL HTR switch .... OFF

22 - INERT SEP switch .... OFF

23 - DUMP switch .... NORM / Guarded

24 - BLEED switch .... OFF/RST

25 - DEFOG pushbutton .... Check OFF
Status light in white

26 - Landing gear position indicator .... Test
LIGHT TEST and CHECK DOWN pushbuttons

27 - GND FEATHER switch .... Check OFF / Guarded

28 - FUEL SEL pushbutton .... MAN
Status light in green

29 - MFD .... Initialize

30 - Fuel on board .... Check
Check quantity

Continue ►

Before Starting Engine 3 / 3

► *Continuing*

31 - Fullest tank .... Select

32 - VOLTS: BAT > 24.5 V / GPU ≈ 28 V .... Check

33 - CAS display .... Check

34 - FLAPS lever .... UP

35 - PARK BRAKE .... Check ON
Last check before proceeding to engine start

36 - **PARK BRAKE** .... Check ON

NOTE

PARK BRAKE appearance does not indicate that parking brake is set. For that, press on brake pedals before turning brake selector to the right.

End of procedure.

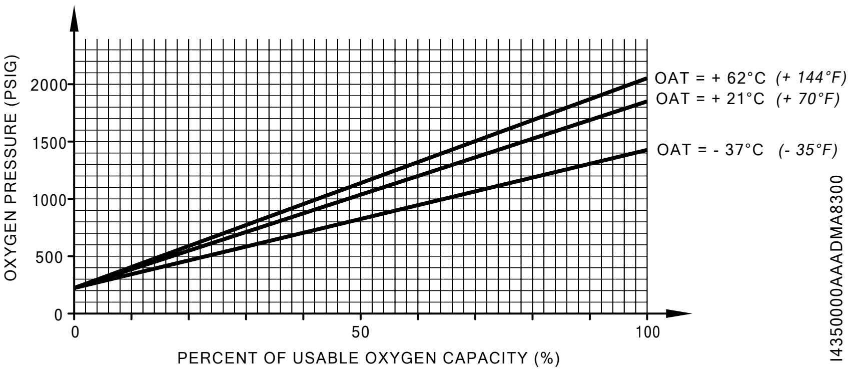
In-Flight Available Oxygen Quantity (Crew oxygen masks in NORMAL mode) 1 / 1

1 - Oxygen pressure .... Read

2 - Outside air temperature (OAT) .... Read

3 - Determine the usable oxygen percent using the chart of Figure 4.4.2.

Figure 4.4.2 - Usable Oxygen



4 - Determine the oxygen duration in minutes by multiplying the values read in Table 4.4.1 by the percent obtained with the chart of Figure 4.4.2.

Table 4.4.1 - Oxygen Duration

Number of passengers	Duration: Passengers, plus 1 pilot	Duration: Passengers, plus 2 pilots
0	226	113
1	162	94
2	127	81
3	104	71
4	88	65

End of procedure.

Engine Start 1 / 3

CAUTION

After aborted engine starts, wait:
1 minute / 5 minutes / 30 minutes before 2nd / 3rd / 4th new engine start.

1 - STROBE switch .... ON

2 - DISPLAY BACKUP button .... Press
Composite mode

NOTE

If there is a loss of MFD during start up sequence, that sequence will be ended using the left-side PFD in composite mode.

3 - THROTTLE .... IDLE

NOTE

If THROTTLE is not set to IDLE, **SET PWR TO IDLE** is displayed.

4 - IGNITION pushbutton .... Check AUTO
Status light in blue

5 - ENGINE MODE switch .... RUN / Guarded

6 - AUX BP switch .... AUTO

7 - **AUX BP ON** .... Check ON

8 - **FUEL PRESS** .... Check OFF

9 - Propeller area .... Clear

CAUTION

Starter operation is bound by limitations – refer to Subsection 2.4. Starter Operation Limits.

10 - STARTER switch .... ON
2 seconds, then release

Continue ►

Engine Start 2 / 3

► *Continuing*

11 - **STARTER** .... Check ON

12 - **MAIN GEN** .... Check ON

When Ng > 8%:

13 - **IGNITION** .... Check ON

NOTE

The FADEC system introduces fuel following ignitor excitation.

14 - ITT, Ng, OIL °C and OIL PSI .... Monitor

Aborting start procedure:

The FADEC automatically aborts starting procedure if:

- light-up is not detected within 13 seconds after fuel has been injected into combustion chamber,
- Ng does not increase after light-up,
- ITT exceeds 945 °C.

If ITT > 850 °C:

Manually abort the start sequence as follows:

15 - STARTER switch .... ABORT
2 seconds, then release

After an aborted start, the FADEC automatically commands a dry motoring run for 30 seconds:

CAUTION

If the start sequence is aborted by setting the ENGINE MODE switch to OFF, the FADEC will not command an automatic dry motoring. In this case, perform a manual dry motoring after engine shutdown – refer to procedure Manual Dry Motoring .

16 - **ABORTING START** .... Check ON

17 - **AUX BP ON** .... Check OFF

Continue ►

Engine Start 3 / 3

► *Continuing*

18 - **IGNITION** .... Check OFF

After 30 seconds:

19 - Starter .... Check OFF automatically

20 - **STARTER** .... Check OFF

CAUTION

Do not attempt another engine start after automatic or manual aborted start, except if the previous start sequence was aborted due to:

- low battery voltage,
- FUEL TANK SELECTOR in the OFF position, or
- other than engine-related reason.

For all other cases, the airplane is grounded. Inform maintenance department.

End of procedure ■

When Ng > 45%:

21 - Starter .... Check OFF automatically

22 - **STARTER** .... Check OFF

23 - **AUX BP ON** .... Check OFF

When Ng > 55%:

24 - **IGNITION** .... Check OFF

25 - Engine parameters .... Check

NOTE

In ISA conditions at sea level, Ng ≈ 58.5%.
Ng may vary between 55% and 63% depending on external conditions.

End of procedure.

Manual Dry Motoring 1 / 2

To drain fuel accumulated inside the combustion chamber, the FADEC automatically performs a 30-second dry motoring run following an aborted start, before complete engine shutdown.

During engine shutdown in high OAT, the FADEC may automatically perform a 15-second dry motoring run before complete engine shutdown.

NOTE

There is no Wet Motoring procedure in the POH.

1 - THROTTLE .... IDLE

2 - ENGINE MODE switch .... OFF

3 - IGNITION pushbutton .... Check AUTO
Status light in blue

4 - **IGNITION** .... Check OFF

5 - FUEL TANK SELECTOR .... OFF

6 - AUX BP switch .... OFF or AUTO

7 - **AUX BP ON** .... Check OFF

8 - **FUEL PRESS** .... Check ON

9 - Engine crank mode .... ON
To activate the engine crank mode in the dedicated GTC sub-menu, press: MFD Home, Aircraft Systems, Engine Crank and then press the crank mode button

10 - Propeller area .... Clear

11 - STARTER switch .... ON
Maintain ON during the motoring sequence

Simultaneously:

12 - Timer clock .... Start

13 - **STARTER** .... Check ON

Continue ►

Manual Dry Motoring 2 / 2

► *Continuing*

If ignition symptoms occur (ITT increasing):

14 - STARTER switch .... OFF

Dry motoring sequence is stopped.

End of procedure ■

After 30 seconds maximum:

15 - STARTER switch .... OFF

16 - **STARTER** .... Check OFF

17 - Engine crank mode .... OFF

To deactivate the engine crank mode, press again the crank mode button in the dedicated GTC sub-menu

NOTE

It is recommended to avoid more than two consecutive motoring between two engine starts, to minimize potential leakages of the bearing #1 lab seal.

End of procedure.

After Engine Start with GPU 1 / 2

1 - SOURCE selector .... BATT

2 - GENERATOR selector .... MAIN

3 - **MAIN GEN** .... Check OFF

NOTE

MAIN GEN normally goes off as soon as **STARTER** goes off.

If **MAIN GEN** *does not go off:*

4 - Ng .... Increase over 70%
To start main generator

5 - Electrical network .... Check

6 - AP/TRIMS switch .... ON / Test OK
To secure the feather position

7 - THROTTLE .... IDLE

8 - GND FEATHER switch .... ON
To allow ground personel to reach GPU plug

>> postMod: MOD70-0753-00C

9 - **FEATHER SECURED** .... Check ON

>> All

When Np < 400 RPM:

10 - GPU .... Disconnect
Performed by ground personnel

11 - **GPU DOOR** .... Check OFF

12 - GND FEATHER switch .... OFF
When ground personnel is cleared from propeller area

13 - Generator and battery AMPS .... Check charge
On EIS of MFD

14 - Battery and ESS. bus VOLTS .... Check voltage ≈ 28 Volts
On EIS of MFD

Continue ►

After Engine Start with GPU 2 / 2

► *Continuing*

15 - CAS display .... Check

16 - FAN selector .... As required

17 - BLEED switch .... AUTO

When ground personnel is cleared from propeller area:

18 - Perform procedure .... After Engine Start

End of procedure.

After Engine Start 1 / 3

CAUTION

Generator load < 200 A.

1 - THROTTLE .... IDLE
For 2 minutes

2 - Ng .... Check

NOTE

In ISA conditions at sea level, Ng ≈ 58.5%.
Ng may vary between 55% and 63% depending on external conditions.

3 - OIL °C and OIL PSI .... Check

4 - AUX BP switch .... Check AUTO

5 - FUEL SEL pushbutton .... AUTO
Status light in blue

6 - SHIFT pushbutton .... Test
Verify rotation of FUEL TANK SELECTOR

7 - AP/TRIMS switch .... ON / Test OK
This initializes the AP and AT systems

8 - PFD 1, MFD and PFD 2 .... NORMAL mode

Perform generator test.

9 - GENERATOR selector .... Check MAIN

10 - AMPS / VOLTS .... Check

When MAIN LOAD < 80 A:

11 - GENERATOR selector .... ST-BY
To perform test

12 - AMPS / VOLTS .... Check

Continue ►

After Engine Start 2 / 3

► *Continuing*

If the ST-BY generator is not connected after 10 seconds (voltage < 27 V is a possible cue):

13 - GENERATOR RESET ST-BY pushbutton .... Press
To reset ST-BY generator

14 - AMPS / VOLTS .... Check
The indicated voltage should be in the green range

15 - GENERATOR selector .... MAIN

PFD 1, MFD and PFD 2

NOTE

Detailed control procedures of the avionics system are described in the Garmin Integrated Flight Deck Pilot's Guide.

16 - Brightness .... Adjust

17 - DISPLAY BACKUP pushbutton .... Check
Then return to NORMAL mode

18 - CAS .... Check
Check engine parameters

19 - FAN selector .... As required

20 - TEMP selector .... Adjust

>> Up to S/N 1463

21 - SEATS HTRS MASTER switch .... As required

>> From S/N 1465

22 - SEATS HTRS MASTER pushbutton .... As required
Check status light color

>> All

23 - BLEED switch .... AUTO

24 - DEFOG pushbutton .... As required

Continue ►

After Engine Start 3 / 3

► *Continuing*

NOTE

The demisting function is automatically switched OFF 10 minutes after the DEFOG pushbutton has been set to ON.

End of procedure.

Before Taxiing 1 / 3

1 - Standby instruments .... Check

2 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

3 - All deicing systems .... Check ON

NOTE

Flight into known icing conditions is authorized only when all ice protection equipment are operating correctly. This equipment may be activated before takeoff, even during taxiing, in case of icing conditions on ground.
For more details, refer to procedure Flight into Known Icing Conditions in Subsection 4.5. .

NOTE

Illumination in green of the PROP DE ICE status light shows that electric power is supplied to blade root electric resistors. It is advised to wait at least a whole half cycle (90 seconds) to check that both blade heating systems are correctly supplied with electric power.

4 - Visually check functioning of deicer boots during one total cycle.

NOTE

The cycle lasts 67 seconds. Check both inflation impulses:
- the first impulse inflates the external and middle wing boots,
- the second impulse inflates the leading edge boots of empennages and inner wing.

5 - DE ICE SYSTEM mode switch .... AUTO

6 - INERT SEP switch .... ON
Keep ON while taxiing in order to avoid ingestion of particles by the engine

7 - Flight controls .... Check
Proper operation from stop to stop, full deflection

Continue ►

Before Taxiing 2 / 3

► *Continuing*

Perform AP / TRIMS test.

8 - AP / TRIMS .... Check

NOTE

Detailed control procedures of autopilot and electrical pitch trim are described in the Garmin Integrated Flight Deck Pilot's Guide.

9 - Pitch trim .... UP / DN

10 - Pitch trim .... Adjust in green range
Graduated from 12 to 37%

11 - Yaw trim .... L / R

12 - Yaw trim .... Adjust in green range
Takeoff range

13 - Roll trim .... L / R

14 - Roll trim .... Adjust at neutral position

15 - FLAPS lever .... UP

Perform MFD flight management

16 - Weight computing .... Set / Check

17 - FOB synchronization .... Set

If requested:

18 - FPL .... Set

19 - LFE selection .... Set / Check
Landing Field Elevation selection is done on the touchscreen controller using either:
- an automatic entry of the destination airport from the flight plan in the FMS, or
- a manual entry by pressing: HOME, AIRCRAFT SYSTEMS, LFE and then MANUAL

20 - VHF / VOR / GPS .... Adjust / Test

Continue ►

Before Taxiing 3 / 3

► *Continuing*

21 - WX radar .... Adjust / Test

22 - WX radar .... STBY

23 - Stormscope / TAS / TAWS / radio altimeter, if installed .... Adjust / Test

24 - ADI / HSI on PFD 1 / PFD 2 .... Check

25 - Altimeter setting .... Set / Check

26 - EIS .... Check

27 - CAS display .... Check

28 - Passenger briefing .... As required

29 - TAXI lights .... ON

30 - PARK BRAKE .... OFF

Make sure that chocks are removed, if used

31 - PARK BRAKE .... Check OFF

End of procedure.

Taxiing 1 / 1

CAUTION

Generator load < 200 A.

CAUTION

Avoid using reverse during taxiing.

NOTE

Operation in the reverse range is not restricted during ground operations. However, foreign particles (dust, sand, grass, gravel, etc.) may be blown into the air, ingested by the engine (above all if INERT SEP switch is turned OFF) and cause damage to the propeller.

1 - TAXI lights .... Check ON

2 - THROTTLE .... As required

NOTE

Ground IDLE is not powerful enough to taxi. Increasing power may be required.
After initial acceleration, avoid excessive THROTTLE movements in order to keep a constant ground speed.

3 - Brakes .... Test

4 - Nose wheel steering .... Check

Check that the control wheel moves (roll) in the same direction as the rudder pedals due to the rudder / aileron interconnect

5 - Flight instruments .... Check

Check navigation and communication systems before or during taxiing, check gyroscopic instruments on PFDs 1 / 2 and standby indicator during ground turns

End of procedure.

Before Line Up 1 / 4

CAUTION

Generator load < 200 A.

1 - PARK BRAKE .... ON

2 - PARK BRAKE .... Check ON

3 - THROTTLE .... IDLE

4 - LDG lights .... ON

5 - NAV switch .... ON

6 - STROBE switch .... ON

7 - IGNITION pushbutton .... AUTO
Status light in blue

8 - AUX BP switch .... AUTO

9 - FUEL SEL pushbutton .... AUTO
Status light in blue

10 - DE ICE SYSTEM mode switch .... As required
AUTO or MAN

11 - PITOT L/R & STALL HTR switch .... ON

If icing conditions are foreseen:

12 - Perform procedure .... Flight into Known Icing Conditions in Subsection 4.5.

13 - TRIMS .... TO

Trims adjustment for takeoff

14 - Pitch .... TO
Adjust inside green index sector, depending on the current balance condition

15 - Yaw .... TO
Adjust inside green index sector

Continue ►

Before Line Up 2 / 4

► *Continuing*

16 - Roll .... TO
Adjust at neutral position

17 - FLAPS lever .... TO

18 - Flight controls .... Check
Check again for proper operation from stop to stop, full deflection

19 - FAN selector .... As required

20 - BLEED switch .... AUTO

21 - LFE .... Check

22 - Fuel gauges .... Check quantity and imbalance

CAUTION

Do not take off if **BAT AMP** is displayed.

NOTE

After starting engine with airplane power, a battery charge above 50 A is normal. If this indication remains steady at a high value, it may be then a battery or generation system failure. Do not take off in these conditions.

23 - BATT AMPS .... Check below 50 AMPS

24 - **BAT AMP** .... Check OFF

25 - EIS .... Check

26 - CAS display .... Check
All messages OFF, except **PARK BRAKE** and, if used **INERT SEP ON**

27 - Altimeters setting .... Set / Check

28 - Instruments departure setting .... Check

29 - SID (PROC) .... Set

30 - ALT SEL .... Set

Continue ►

Before Line Up 3 / 4

► *Continuing*

31 - XPDR squawk .... Set

32 - VHF / VOR / GPS / XPDR .... Adjust / Check

33 - Stormscope / TAS / TAWS / ADF, if installed .... Adjust / Check

34 - WX radar .... Adjust / Check

On ground, maintain weather radar on STBY in order not to generate radiations prejudicial to outside persons

35 - Radio altimeter, if installed .... Adjust / Check

36 - Transponder code .... Adjust / Check

CAUTION

Setting the INERT SEP switch to ON may result in maximum available TRQ being lower than 100%, depending on runway elevation and outside temperature – refer to Subsection 5.9. Takeoff Distances.

37 - Takeoff distances .... Check

Refer to Subsection 5.9. Takeoff Distances

38 - INERT SEP switch .... As required

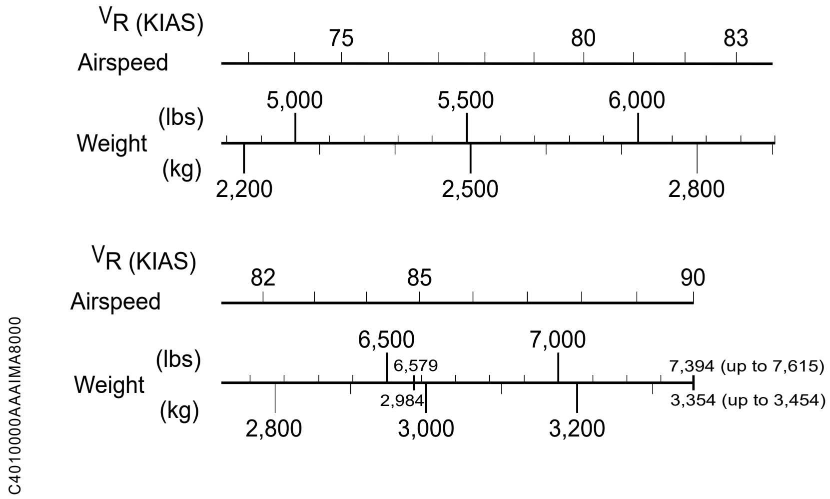
Depending on external conditions and takeoff performance

39 - Rotation airspeed (V_R) .... Check

Continue ►

Before Line Up 4 / 4

► *Continuing*



40 - Pilot's / Passengers' belts .... Check

41 - Passengers' table .... Stowed

42 - Engine instruments .... Check

All engine parameters must be in green range, except propeller RPM

43 - PARK BRAKE .... OFF

44 - **PARK BRAKE** .... Check OFF

End of procedure.

Normal Takeoff 1 / 3

When lined up, on brakes:

CAUTION

If heavy precipitation, set IGNITION pushbutton and INERT SEP switch to ON.
If icing conditions are foreseen – refer to procedure Flight into Known Icing Conditions in Subsection 4.5. .

1 - ADI / HSI / headings .... Check

2 - Horizon .... Check attitude ≈ +2°

NOTE

Horizon has been set so as to indicate a 2° nose up attitude, when airplane center of gravity is at a middle average.

3 - HSI - Heading - Standby instrument heading .... Check

4 - LDG lights .... ON

5 - AT .... As required

6 - Engine instruments .... Check
ITT in green sector

7 - CAS display .... Check
All messages OFF, except **IGNITION** and **INERT SEP ON**, if used

8 - Apply brakes and increase engine power.
To get PROP RPM in green sector

9 - Brakes .... Release

10 - THROTTLE .... Full forward

11 - Max TRQ .... Check
Corresponding to takeoff performance tables

Continue ►

Normal Takeoff 2 / 3

► *Continuing*

CAUTION

Do not engage AT below 1,000 ft (300 m) AGL in case of takeoff without autothrottle.

NOTE

If AT is enabled, it will engage automatically when TRQ > around 75%.
When AT is enabled, THROTTLE may slightly move to reach AT position.

12 - Rotate at V_R.

13 - Attitude .... 10° Up

When vertical speed is positive:

14 - Brakes .... Apply
Briefly

15 - LANDING GEAR lever .... UP
Airspeed < 150 KIAS

NOTE

During the sequence:

- the amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the three landing gears are up locked. GEAR UNSAFE red warning light ON and GEAR UNSAFE indicate an anomaly – refer to procedure Landing Gear Retraction Discrepancy in Subsection 3A.7. ,
- it is possible that the three landing gear position green indicator lights flash unevenly then go off at the end of the sequence.

Continue ►

Normal Takeoff 3 / 3

► *Continuing*

16 - GEAR UNSAFE red warning light and GEAR UNSAFE .... Check OFF
At the end of the sequence

In case of initial climb at V_X:

WARNING

It is recommended not to retract FLAPS to UP before 500 ft AGL.

17 - Airspeed .... 100 KIAS

When airspeed above 115 KIAS:

18 - FLAPS lever .... UP

End of procedure.

Short Takeoff 1 / 3

When lined up, on brakes:

CAUTION

If heavy precipitation, set IGNITION pushbutton and INERT SEP switch to ON.
If icing conditions are foreseen – refer to procedure Flight into Known Icing Conditions in Subsection 4.5. .

1 - ADI / HSI / headings .... Check

2 - Horizon .... Check attitude ≈ +2°

NOTE

Horizon has been set so as to indicate a 2° nose up attitude, when airplane center of gravity is at a middle average.

3 - HSI - Heading - Standby instrument heading .... Check

4 - LDG lights .... ON

5 - AT .... OFF

6 - Engine instruments .... Check
ITT in green sector

7 - CAS display .... Check
All messages OFF, except **IGNITION** and **INERT SEP ON**, if used

8 - Apply brakes and increase engine power.
To get PROP RPM in green sector

9 - THROTTLE .... Full forward

10 - Max TRQ .... Check
Corresponding to takeoff performance tables

11 - Brakes .... Release

NOTE

On short runway, maximum torque will be applied before brakes release.

Continue ►

Short Takeoff 2 / 3

► *Continuing*

12 - Rotate at V_R.

Weight < 6,579 lbs (2,984 kg):

13 - Attitude .... 15° Up

Weight > 6,579 lbs (2,984 kg):

14 - Attitude .... 12.5° Up

When vertical speed is positive:

15 - Brakes .... Apply
Briefly

16 - LANDING GEAR lever .... UP
Airspeed < 150 KIAS

NOTE

During the sequence:

- the amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the three landing gears are up locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly – refer to procedure Landing Gear Retraction Discrepancy in Subsection 3A.7. ,
- it is possible that the three landing gear position green indicator lights flash unevenly then go off at the end of the sequence.

17 - GEAR UNSAFE red warning light and **GEAR UNSAFE** .... Check OFF
At the end of the sequence

Continue ►

Short Takeoff 3 / 3

► *Continuing*

In case of initial climb at V_X:

WARNING

It is recommended not to retract FLAPS to UP before 500 ft AGL.

18 - Airspeed .... 100 KIAS

When airspeed above 115 KIAS:

19 - FLAPS lever .... UP

End of procedure.

After Takeoff 1 / 1

1 - LANDING GEAR lever .... Check UP

2 - FLAPS lever .... Check UP

3 - TRQ .... Check 100% max.

4 - Climb airspeed .... As required
124 KIAS or 170 KIAS / M 0.40

5 - EIS .... Check

6 - CAS display .... Check

7 - DE ICE SYSTEM panel .... As required

8 - INERT SEP switch .... As required

End of procedure.

Climb 1 / 2

1 - ALT SEL .... Check

2 - Altimeters setting .... As required

3 - AP / YD .... Check

Autopilot status and yaw damper ON

4 - AT .... As required

5 - TRQ adjustment / ITT / Ng .... Check

NOTE

The FADEC automatically adjusts the maximum climb power torque setting (MXCL) in accordance with engine operation tables – refer to Subsection 5.8. Engine Operation – without manual adjustment of the THROTTLE.
If not, adjust climb power manually.

6 - Climb airspeed .... 124 KIAS or 170 KIAS

To consult performance tables concerning climb:

- at 124 KIAS – refer to Paragraph MXCL – Vertical Speeds (IAS = 124 KIAS) in Subsection 5.10. ,
- at 170 KIAS / M 0.40 – refer to Paragraph MXCL – Vertical Speeds (IAS = 170 KIAS / M 0.40) in Subsection 5.10.

7 - EIS .... Check

8 - CAS display .... Check

9 - WX radar .... As required

10 - Pressurization .... Check

11 - TEMP selector .... Adjust

12 - Fuel gauges .... Check

Verify fuel quantity and imbalance, correct if necessary

13 - AMPS / VOLTS .... Check

Continue ►

Climb 2 / 2

► *Continuing*

CAUTION

If heavy precipitation, set IGNITION pushbutton and INERT SEP switch to ON.

14 - DE ICE SYSTEM panel .... As required

Depending on external conditions, refer to procedure:
Flight under Heavy Precipitations in Subsection 4.5. , or
Flight into Known Icing Conditions in Subsection 4.5. , or
Flight into Severe Icing Conditions in Subsection 4.5.

15 - INERT SEP switch .... As required

16 - LDG lights .... As required

End of procedure.

Cruise 1 / 2

1 - Altimeters setting .... Check

2 - AP / YD .... Check

Autopilot status and yaw damper ON

3 - AT .... As required

4 - TRQ adjustement / ITT / Ng .... Check

NOTE

Engine operation tables give TRQ to be applied according to OAT, in order not to exceed authorized maximum power.
For maximum cruise, the FADEC automatically limits the maximum TRQ available in accordance with the associated performance tables – refer to Subsection 5.8. Engine Operation.
MXCR power tables are introduced depending on INERT SEP ON/OFF status and bleed status.

5 - EIS .... Check

6 - CAS display .... Check

7 - Pressurization .... Check

Refer to Subsection 5.4. Cabin Pressurization Envelope

8 - Fuel gauges .... Check

Regularly check fuel gauges for:

9 - Consumption.

10 - Expected fuel at destination.

11 - Tank automatic change every 5 minutes.

12 - Imbalance.

Maximum imbalance 15 USG

When the cruise parameters are stabilized, after 4 minutes minimum:

13 - AMPS / VOLTS .... Check

Continue ►

Cruise 2 / 2

► *Continuing*

CAUTION

If heavy precipitation, set IGNITION pushbutton and INERT SEP switch to ON.

14 - DE ICE SYSTEM panel .... As required

Depending on external conditions, refer to procedure:
Flight under Heavy Precipitations in Subsection 4.5. , or
Flight into Known Icing Conditions in Subsection 4.5. , or
Flight into Severe Icing Conditions in Subsection 4.5.

15 - INERT SEP switch .... As required

16 - LDG lights .... As required

17 - Top of descent .... Computed

End of procedure.

Before Descent 1 / 1

1 - Before approach briefing .... Completed

2 - Altimeters setting .... Check

3 - Pressurization .... Check

4 - LFE .... Check

5 - Fuel gauges .... Check
Check for quantity and imbalance

6 - Fullest tank .... Select

7 - AMPS / VOLTS .... Check

CAUTION

If heavy precipitation, set IGNITION pushbutton and INERT SEP switch to ON.

8 - DE ICE SYSTEM mode switch .... As required
Depending on external conditions, refer to procedure:
Flight under Heavy Precipitations in Subsection 4.5. , or
Flight into Known Icing Conditions in Subsection 4.5. , or
Flight into Severe Icing Conditions in Subsection 4.5.

Prior to descent in moist conditions and to avoid canopy misting:

9 - DEFOG pushbutton .... ON
Status light in green

NOTE

The demisting function is automatically switched OFF 10 minutes after the DEFOG pushbutton has been set to ON.

If misting continues:

10 - Perform procedure .... Windshield Misting or Internal Icing in Subsection 3A.11.

11 - INERT SEP switch .... As required

End of procedure.

Approach 1 / 2

1 - Altimeters setting (QNH) .... Set / Check

2 - Minimums .... Set / Check

3 - COM / NAV / GPS .... Set / Check

4 - Pressurization .... Check

5 - LFE .... Check

6 - Fuel gauges .... Check
Check for quantity and imbalance

7 - Fullest tank .... Select

8 - AMPS / VOLTS .... Check

CAUTION

If heavy precipitation, set IGNITION pushbutton and INERT SEP switch to ON.

9 - DE ICE SYSTEM mode switch .... As required
Depending on external conditions, refer to procedure:
Flight under Heavy Precipitations in Subsection 4.5. , or
Flight into Known Icing Conditions in Subsection 4.5. , or
Flight into Severe Icing Conditions in Subsection 4.5.

Prior to descent in moist conditions and to avoid canopy misting:

10 - DEFOG pushbutton .... ON
Status light in green

NOTE

The demisting function is automatically switched OFF 10 minutes after the DEFOG pushbutton has been set to ON.

If misting continues:

11 - Perform procedure .... Windshield Misting or Internal Icing in Subsection 3A.11.

12 - INERT SEP switch .... ON

Continue ►

Approach 2 / 2

► *Continuing*

When below FL 100:

13 - LDG lights .... ON

14 - Passenger's briefing .... As required

15 - Seats, belts, harnesses .... Locked

16 - Passenger's table .... Stowed

End of procedure.

Final Approach (in GS) or Downwind Leg (VMC) 1 / 2

Long final:

1 - Altimeters .... Check

2 - Fuel gauges .... Check
Check for quantity and imbalance

3 - Fullest tank .... Select
Maximum tolerated imbalance is 15 USG

When below FL 100:

4 - LDG lights .... ON

5 - INERT SEP switch .... ON

6 - SPD knob .... MAN

When airspeed is below 178 KIAS:

7 - LANDING GEAR lever .... DN
Check three green

8 - GEAR UNSAFE red warning light .... Check OFF

9 - GEAR UNSAFE .... Check OFF

10 - Amber light .... Check OFF

Continue ►

Final Approach (in GS) or Downwind Leg (VMC) 2 / 2

► *Continuing*

NOTE

During the sequence:

- the amber caution light flashes. It indicates that the landing gear pump is running. It goes off when the three landing gears are down locked. GEAR UNSAFE red warning light ON and **GEAR UNSAFE** indicate an anomaly – refer to procedure Landing Gear Extension Discrepancy in Subsection 3A.7. ,
- it is possible that the three landing gear position green indicator lights flash unevenly then go off at the end of the sequence.

11 - FLAPS lever .... TO
Airspeed < 178 KIAS

12 - WX radar mode .... STBY

End of procedure.

Short Final (Around 500 ft) 1 / 1

Stabilized approach

1 - LANDING GEAR lever .... Check
DN and three green

When airspeed is below 122 KIAS:

2 - FLAPS lever .... LDG

NOTE

However, when autopilot is engaged, in APR mode, with coupled GS/GP, flaps must be extended in LDG position before crossing the OUTER MARKER/FAF.

Without AP engaged:

3 - Approach airspeed .... 85 KIAS

With AP engaged:

4 - Approach airspeed .... Above 85 KIAS

NOTE

This is to avoid any vertical deviation in case of late FLAPS extension to LDG position in short final.

5 - AP / YD / AT .... Disconnect
Before 200 ft

NOTE

Disconnect the yaw damper at DH/MDA. Otherwise, pilot will be pushing rudder pedals against the servo. This is particularly significant when landing in a crosswind.

End of procedure.

Landing 1 / 1

WARNING

Reduce power smoothly.
Quickly pulling power to idle during the flare will cause sudden deceleration which may lead to a drop down of the airplane.

1 - THROTTLE .... IDLE

NOTE

Land with a positive flight attitude about 3° nose high with main landing gear first.

After wheels touch:

NOTE

Idle power switches from flight IDLE to ground IDLE.

CAUTION

Do not use reverse below 40 KIAS.

2 - Reverse .... As required

Reverse may be applied as soon as the wheels touch the ground

3 - Brakes .... As required

NOTE

Wheels may lock if applying maximum braking at speeds higher than 40 KIAS.

End of procedure.

Go-Around with AP OFF 1 / 1

1 - Go-Around pushbutton .... Press
It causes Flight Director bars climb to +10°

Simultaneously:

If AT is engaged:

The THROTTLE will advance to full forward.

If AT is not engaged:

2 - THROTTLE .... Advance manually to full forward

NOTE

The airplane will tend to yaw to the left when power is applied. Use right rudder pressure to maintain coordinated flight until the rudder trim is adjusted.

3 - Attitude .... 10° Up

4 - FLAPS lever .... TO

If airspeed has been maintained at 85 KIAS or more and TRQ 100%, select FLAPS to TO position as soon as the 10° Up attitude has been attained.

When rate of climb is positive and airspeed is at or above 90 KIAS:

5 - LANDING GEAR lever .... UP
All warning lights OFF

When airspeed is at or above 115 KIAS:

6 - FLAPS lever .... UP

7 - Climb airspeed .... As required

8 - TRQ .... As required

End of procedure.

Go-Around with AP ON 1 / 1

1 - Go-Around pushbutton .... Press
It causes Flight Director bars climb to +10°
AP remains ON

Simultaneously:

If AT is engaged:

The THROTTLE will advance to full forward.

If AT is not engaged:

2 - THROTTLE .... Advance manually to full forward

3 - FLAPS lever .... TO

If airspeed has been maintained at 85 KIAS or more and TRQ 100%, select FLAPS to TO position as soon as the 10° Up attitude has been attained.

When rate of climb is positive and airspeed is at or above 90 KIAS:

4 - LANDING GEAR lever .... UP
All warning lights OFF

When airspeed is at or above 115 KIAS:

5 - FLAPS lever .... UP

6 - Climb airspeed .... As required

7 - TRQ .... As required

End of procedure.

Touch and Go 1 / 2

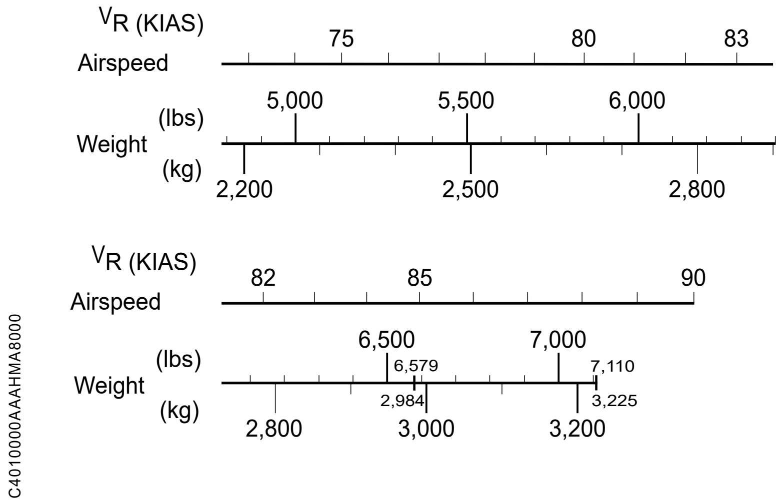
Before deciding to perform a touch and go:

WARNING

AT engagement is prohibited for touch and go.
Reduce power smoothly.
Quickly pulling power to idle during the flare will cause sudden deceleration which may lead to a drop down of the airplane.

1 - Runway length .... Check
Considering rolling and takeoff phases
Refer to Subsection 5.9. Takeoff Distances.

2 - Rotation airspeed (V_R) .... Checked



After wheels touch:

3 - FLAPS lever .... TO

Continue ►

Touch and Go 2 / 2

► *Continuing*

4 - Elevator trim .... Green sector

It is faster to use manual elevator trim control than electric one

Ensure that runway length is sufficient to complete this sequence

WARNING

Confirm that flaps have reached the TO position before increasing power. Do not increase power with full flaps, as airplane may lift off prematurely at low speed.

5 - THROTTLE .... Full forward

If normal takeoff:

6 - Attitude .... 10° Up

If short takeoff:

If weight < 6,579 lbs (2,984 kg):

7 - Attitude .... 15° Up

Weight > 6,579 lbs (2,984 kg):

8 - Attitude .... 12.5° Up

NOTE

The POH does not supply distances for touch and go. The pilot must decide whether the runway length is sufficient.

NOTE

Do not engage AT below 1,000 ft (300 m) AGL.

End of procedure.

Runway Clear 1 / 1

Runway clear - airplane stopped

CAUTION

Generator load < 200 A.

1 - THROTTLE .... Adjust
To get minimum TRQ for taxiing

NOTE

A two minutes minimum cool down period is required prior to engine shutdown. It starts when exiting the runway and ends at shutdown. Taxi time can be accounted provided that Ng never exceeds 70% and reverse is not used.

2 - TAXI lights .... ON

3 - NAV switch .... ON

4 - STROBE switch .... OFF

5 - DE ICE SYSTEM mode switch .... AUTO

6 - INERT SEP switch .... Check ON

7 - PITOT L/R & STALL HTR switch .... OFF

8 - TRIMS .... Reset to TO

9 - FLAPS lever .... UP

10 - FAN selector .... As required

11 - XPDR .... Check GND

12 - WX radar .... Check STANDBY
The weather radar automatically sets to STANDBY upon touchdown

End of procedure.

Shutdown 1 / 3

1 - PARK BRAKE .... Set ON

2 - **PARK BRAKE** .... Check ON

3 - EXT LIGHTS panel .... All OFF

4 - INT LIGHTS panel .... As required

5 - OXYGEN switch .... OFF

6 - FUEL SEL pushbutton .... MAN
Status light in green

7 - AP/TRIMS switch .... OFF

>> Up to S/N 1463

8 - SEATS HTRS MASTER switch .... OFF

>> From S/N 1465

9 - SEATS HTRS MASTER pushbutton .... OFF
Status light in white

>> All

10 - FAN selector .... OFF

11 - BLEED switch .... OFF/RST

12 - Check for cabin depressurization (cabin differential pressure = 0 psi).

13 - THROTTLE .... IDLE
Verify 2 min cool down

14 - ENGINE MODE switch .... OFF

NOTE

During engine shutdown in high OAT, the FADEC may automatically perform a 15-second dry motoring run before complete engine shutdown.

Continue ►

Shutdown 2 / 3

► *Continuing*

WARNING

During automatic dry motoring run, the propeller continues turning. Remain clear of propeller area.

After automatic dry motoring if any:

15 - FUEL TANK SELECTOR .... OFF

16 - INERT SEP switch .... OFF

17 - **AUX BP ON** .... Check ON

Wait for AUX BP to activate to confirm it works when fuel pressure decreases

18 - AUX BP switch .... OFF

19 - GENERATOR selector .... OFF

After inertial separator retraction, about 40 seconds:

20 - SOURCE selector .... OFF

21 - Crash lever .... Pull down

22 - PARK BRAKE .... As required

23 - Standby instruments .... OFF

MD302 normal turn off procedure:

24 - No pilot action is required to turn the MD302 off. It will automatically turn off within 60 seconds following electrical power switch-off.

MD302 manual turn off procedure:

NOTE

The MD302 can be manually turned off when operating on internal battery to conserve battery power.

25 - Press and hold the control knob for approximately two seconds.

Continue ►

Shutdown 3 / 3

► *Continuing*

26 - Turn the control knob to select POWER OFF on the menu and press the control knob to turn the standby attitude module off.

End of procedure.

Outside Check after Shutdown 1 / 1

1 - Oxygen cylinder (right wing fairing) .... Close

CAUTION

Wait for exhaust stubs to cool temperature before installing covers.

2 - Install air inlet and static port plugs, and exhaust and pitot covers.

NOTE

Check oil level within 15 to 20 minutes following engine shutdown.
Refer to Paragraph Engine Oil in Subsection 8.7. .

End of procedure.

Intentionally left blank

4.5 - Particular Procedures

NOTE

The procedures and procedure elements given in this subsection Particular Procedures supplement the normal procedures or complete certain elements of the normal procedures described in Subsection(s) 4.3 and/or 4.4.

Flight into Known Icing Conditions 1 / 4

CAUTION

The stall warning system does not function properly in icing conditions and should not be relied upon to provide adequate stall warning in icing conditions and after leaving icing conditions, if ice accretion remains on the airplane. Moreover, the ESP and USP functions may not be correctly engaged.

General

Icing conditions exist when the OAT on the ground or in flight is +5 °C or below, and visible moisture in any form is present (clouds, fog with visibility of one mile (1.6 km) or less, rain, snow, sleet or ice crystals).

Icing conditions also exist when the OAT on the ground is +5 °C or below and when operating on ramps, taxiways or runways where surface snow, ice, standing water or slush may be ingested by the engine or freeze on engine or cowlings.

NOTE

To convert OAT to SAT in flight, refer to Subsection 5.5. SAT - OAT Conversions.
SAT = OAT - 2 °C on the ground.

Flight into known icing conditions is authorized when all airplane equipment provided for ice protection is operating correctly. This includes:

- Pneumatic deice system for inboard and outboard wing, for stabilizers and for elevator horns,
- Propeller electrical deice system,
- Electrical heating system for both pitots and for the stall warning incidence sensor,
- Windshield electrical deice system, and

Continue ►

Flight into Known Icing Conditions 2 / 4

► *Continuing*

- Inertial separator.

For description of deice systems, refer to Subsection Ice Protection Equipment.

Ice accumulation thickness is monitored by the pilot on the left-side wing leading edge.

At night, a leading edge icing inspection light located on the fuselage left side, activated by the ICE LIGHT pushbutton, is provided.

Boots are automatically cycling at the optimum time to assure proper ice removal. Correct operation of the system can be checked observing the illumination in green of the status light around AIRFRAME DE ICE pushbutton. If correct operation cannot be confirmed, do not enter or leave as soon as possible icing conditions.

If **AFRM DEICE FAIL** is displayed, perform procedure AFRM DEICE FAIL in Subsection 3A.11. .

Ice Protection Procedures

CAUTION

Should conditions require it, apply these directives from beginning of taxi onwards.

Prior to entering IMC if OAT < 5 °C and as long as under icing conditions (IMC and OAT < 5 °C) or if **ICE DETECTED** *is displayed, whichever comes first:*

1 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

NOTE

Inertial separator position affects engine parameters, particularly TRQ and ITT. The FADEC automatically adjusts the maximum power available depending on the inertial separator position and in accordance with engine operation tables – refer to Subsection 5.8. Engine Operation – without manual adjustment of the THROTTLE.
If not, adjust engine power manually.

2 - All deicing systems .... Check ON

Continue ►

Flight into Known Icing Conditions 3 / 4

► *Continuing*

3 - IGNITION pushbutton .... ON
Status light in green

NOTE

IGNITION pushbutton may be left ON for a long period.

NOTE

The INERT SEP switch must be left ON while the airplane remains in icing conditions.

CAUTION

If airplane leaves icing conditions, maintain INERT SEP switch to ON as long as ice thickness on non-deiced visible parts exceeds 15 mm (or ½ in).

This will avoid ice fragments coming from propeller spinner and being ingested by engine.

Procedures for holding, approach and landing in icing conditions:

- Minimum recommended airspeeds are:

	Weight	
	< 6,579 lbs (2,984 kg)	> 6,579 lbs (2,984 kg)
Flaps UP	130 KIAS	135 KIAS
Flaps TO	110 KIAS	115 KIAS
Flaps LDG	90 KIAS	95 KIAS

Continue ►

Flight into Known Icing Conditions 4 / 4

► *Continuing*

- If there is ice on the unprotected surfaces of the airplane, during flight end phase, conduct holding with the flaps up. Use flaps as required for final approach and landing at minimum airspeeds noted above.

Ice accumulation effects

When ice has accumulated on the unprotected surfaces of the airplane, aerodynamic characteristics may be changed.

Particularly stall airspeeds may increase by up to:

FLAPS UP	20 KIAS
FLAPS TO	15 KIAS
FLAPS LDG	10 KIAS

In case of severe or prolonged icing, an ice concretion due to refreezing around the heated stall warning may appear. Above-recommended airspeeds take into account, on one side, the stall airspeed increase due to profile shape deterioration and, on the other side, the weight increase of the iced-up airplane, taking as a basis the airplane maximum weight when not iced-up.

Rate of climb values with ice accumulation on the unprotected surfaces are to be decreased by 10%.

Cruise airspeeds may be decreased by 10%.

Cruise airspeeds decrease may be more if engine power is limited.

Because of the higher landing airspeed, landing distances will be increased. In the landing configuration, using 90 KIAS approach airspeed increases landing distance by 20% – refer to Subsection Landing Distances.

End of procedure.

Flight into Severe Icing Conditions 1 / 1

The following weather conditions may be conducive to severe in-flight icing:

- **Visible rain at temperatures below 0 °C ambient air temperature,**
- **Droplets that splash or splatter on impact at temperatures below 0 °C ambient air temperature.**

Severe icing conditions, particularly freezing rain and freezing drizzle, can be identified by:

- *unusual extensive ice accumulation on the airframe and windshield in areas not normally observed to collect ice,*
- *accumulation of ice on the upper surface of the wing aft of the protected area.*

Procedures for exiting freezing rain or freezing drizzle conditions:

1 - Inform ATC to exit severe icing conditions by changing the route or the altitude.

2 - Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.

► Do not engage AP ◄

If the autopilot is engaged:

3 - Hold the control wheel firmly and disengage the autopilot.

If an unusual roll response or uncommanded roll control movement is observed:

4 - Angle-of-attack .... Reduce

► Do not extend flaps when holding in icing conditions ◄

Operation with flaps extended can result in a reduced wing angle-of-attack, with the possibility of ice forming on the upper surface further aft on the wing than normal, possibly aft of the protected area.

If the flaps are extended:

5 - Do not retract flaps until the airframe is clear of ice.

End of procedure.

Flight under Heavy Precipitations 1 / 1

1 - IGNITION pushbutton .... ON
Status light in green

NOTE

This action is intended, in highly improbable case of an engine flameout further to an important ingestion, to ensure immediate restarting without action of the pilot.

2 - INERT SEP switch .... ON

End of procedure.

Utilization on Runways Covered with Water 1 / 1

If takeoff or landing must be performed on a runway covered with water:

1 - IGNITION pushbutton .... ON
Status light in green

2 - INERT SEP switch .... ON

End of procedure.

Utilization on Runways Covered with Melting or Not Tamped Snow 1 / 3

If required:

Refer to procedure Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) .

CAUTION

When the engine is shutdown, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.

Preflight inspection:

1 - Remove any snow or ice from the wings, stabilizers and movable surfaces, landing gear wells and gear doors, as well as flap tracks, actuators and their fairings.

2 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces) and in the landing gear wells, shortly before takeoff.

Taxiing:

3 - INERT SEP switch .... ON

4 - **INERT SEP ON** .... Check ON

5 - FLAPS lever .... UP

6 - Taxi airspeed .... Max. 5 KIAS

7 - Brakes .... Apply occasionally
To maintain the brake pads warm, this will prevent any subsequent locking due to freezing after takeoff

Before line up:

If the runway is long enough:

8 - FLAPS lever .... UP
Takeoff distances increased by 15%

9 - Rotation airspeed .... Increased by 5 KIAS

Continue ►

Utilization on Runways Covered with Melting or Not Tamped Snow 2 / 3

► *Continuing*

NOTE

Takeoff distances must be increased to take into account the flap position (+ 15% compared to the takeoff position) and the runway condition.
The ground roll may be multiplied by three in some melting or not tamped snow cases.

10 - IGNITION pushbutton .... ON
Status light in green

11 - **IGNITION** .... Check ON

12 - INERT SEP switch .... ON

13 - **INERT SEP ON** .... Check ON

Takeoff:

During takeoff run:

14 - Lightly lift up nose wheel.

In order to reduce the forward resistance due to snow accumulation against the wheel

After takeoff:

15 - Normally retract the landing gear, then perform a complete cycle (extension/retraction) at IAS < 150 KIAS.

Before landing:

16 - IGNITION pushbutton .... ON
Status light in green

17 - **IGNITION** .... Check ON

18 - INERT SEP switch .... ON

19 - **INERT SEP ON** .... Check ON

Continue ►

Utilization on Runways Covered with Melting or Not Tamped Snow 3 / 3

► *Continuing*

Touch and Go:

WARNING

Touch and Go is prohibited.

On the ramp, after landing or taxiing:

20 - Do not use the parking brake to prevent brake lock.

21 - Use chocks and/or tie-down the airplane.

End of procedure.

Utilization on Icy or Covered with Tamped Snow Runways
1 / 3

If required:

Refer to procedure Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) .

CAUTION

When the engine is shutdown, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.

Preflight inspection:

1 - Remove any snow or ice from the wings, stabilizers and movable surfaces, landing gear wells and gear doors, as well as flap tracks, actuators and their fairings.

2 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shortly before takeoff.

Taxiing:

3 - INERT SEP switch .... ON

4 - **INERT SEP ON** .... Check ON

5 - Taxi airspeed .... Max. 5 KIAS
Apply very smooth variations using THROTTLE

6 - Steer the airplane using the rudder.

NOTE

Make turns at a very low airspeed, engine torque tends to make the airplane turn to the left.

7 - Use brakes only at very low airspeed and progressively.

Before line up:

8 - IGNITION pushbutton .... ON
Status light in green

9 - **IGNITION** .... Check ON

Continue ►

Utilization on Icy or Covered with Tamped Snow Runways 2 / 3

► *Continuing*

10 - INERT SEP switch .... ON

11 - **INERT SEP ON** .... Check ON

Takeoff:

12 - After takeoff, normally retract the landing gear, then perform a complete cycle (extension/retraction) at IAS < 150 KIAS.

Before landing:

13 - IGNITION pushbutton .... ON
Status light in green

14 - **IGNITION** .... Check ON

15 - INERT SEP switch .... ON

16 - **INERT SEP ON** .... Check ON

Landing:

After wheels touch:

17 - Use reverse only if necessary and very progressively by monitoring the airplane behavior.

NOTE

The engine torque tends to make the airplane turn to the left.

18 - Taxi airspeed .... Max. 5 KIAS
Apply very smooth variations using THROTTLE

19 - Steer the airplane using the rudder.

NOTE

Make turns at a very low airspeed, engine torque tends to make the airplane turn to the left.

20 - Use brakes only at very low airspeed and progressively.

Continue ►

Utilization on Icy or Covered with Tamped Snow Runways
3 / 3

► *Continuing*

On the ramp, after landing or taxiing:

21 - Do not use the parking brake to prevent brake lock.

22 - Use chocks and/or tie-down the airplane.

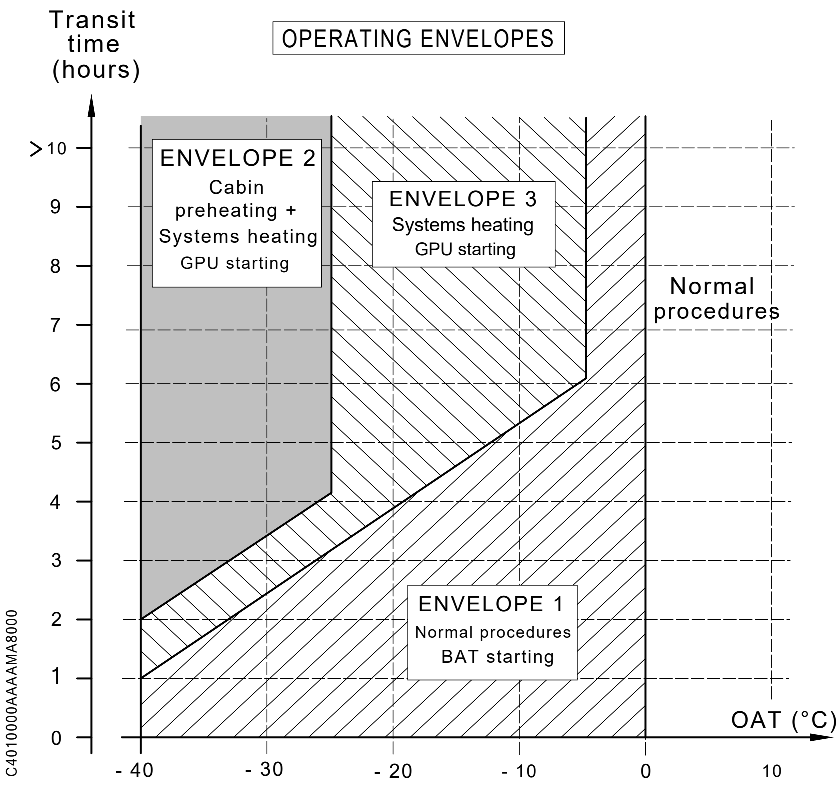
End of procedure.

Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) 1 / 1

NOTE

The procedure hereafter supplements the normal procedures for the airplane use when operating under temperatures between 0 °C and -40 °C on ground.

Figure 4.5.1 - Operating Envelopes in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C)



End of procedure.

Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) – Envelope 1 1 / 3

NOTE

The procedure hereafter supplements the normal procedures for the airplane use when operating in the Envelope 1 defined in Figure 4.5.1.

Preflight inspection:

1 - Remove any snow or ice from the wings, stabilizers and movable surfaces.

Depending on the condition of runways and taxiways:

2 - Perform procedure .... Utilization on Runways Covered with Melting or Not Tamped Snow

or

3 - Perform procedure ..... Utilization on Icy or Covered with Tamped Snow Runways

4 - Carry out a complete rotation of the propeller to check its free rotation.

5 - If the airplane is operating permanently under negative temperatures, fuel draining will have to be performed with a maximum interval of once a week after having parked the airplane in a heated hangar.

6 - Remove chocks and/or release ties from the airplane.

7 - Check the free deflection of the flight controls and of the elevator trim.

Before starting engine / Engine start / After engine start:

8 - Perform normal procedures defined in Subsection(s) 4.3 and/or 4.4.

Before taxiing / Taxiing / Before line up / Takeoff:

DE ICE SYSTEM panel

9 - DE ICE SYSTEM mode switch .... MAN
All deicing systems turn on

10 - INERT SEP switch .... Check ON

11 - **INERT SEP ON** .... Check ON

Continue ►

Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) – Envelope 1 2 / 3

► *Continuing*

12 - PITOT L/R & STALL HTR switch .... ON

13 - Perform normal procedures defined in Subsection(s) 4.3 and/or 4.4.

Depending on the condition of runways and taxiways:

14 - Perform procedure .... Utilization on Runways Covered with Melting or Not Tamped Snow

or

15 - Perform procedure ..... Utilization on Icy or Covered with Tamped Snow Runways

Landing / After landing:

16 - Perform normal procedures defined in Subsection(s) 4.3 and/or 4.4.

Depending on the condition of runways and taxiways:

17 - Perform procedure .... Utilization on Runways Covered with Melting or Not Tamped Snow

or

18 - Perform procedure ..... Utilization on Icy or Covered with Tamped Snow Runways

Shutdown:

19 - PARK BRAKE .... OFF

20 - **PARK BRAKE** .... Check OFF

NOTE

Use of the parking brake in cold or very cold weather is not recommended in order to prevent the brakes from sticking.

21 - Perform normal procedures defined in Subsection(s) 4.3 and/or 4.4.

22 - Use chocks and/or tie-down the airplane using anchor points on ground.

Continue ►

Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) – Envelope 1 3 / 3

► *Continuing*

23 - Install air inlet and static port plugs, and exhaust and pitot covers.

End of procedure.

Utilization in Cold Weather (0 °C to - 25 °C) and Very Cold Weather (- 25 °C to - 40 °C) – Envelope 2 and 3 1 / 6

NOTE

The procedures hereafter supplement or replace the normal procedures for the airplane use when operating in the Envelope 2 or 3 defined in Figure 4.5.1.

Preflight inspection:

When operating in Envelope 2:

1 - Preheat the cabin.

NOTE

Preheating during at least 30 minutes is necessary using a heater (70 °C mini).
Hot air pipes must be installed in the cabin by half-opening the door.

2 - Remove any snow or ice from the wings, stabilizers and movable surfaces.

Depending on the condition of runways and taxiways:

3 - Perform procedure .... Utilization on Runways Covered with Melting or Not Tamped Snow

or

4 - Perform procedure ..... Utilization on Icy or Covered with Tamped Snow Runways

5 - Spray anti-icing fluid on the wings, stabilizers and movable surfaces (upper and lower surfaces), shorthly before takeoff.

6 - Carry out a complete rotation of the propeller to check its free rotation.

7 - Do not perform a fuel draining. If the airplane is operating permanently under negative temperatures, drainings will have to be performed once a week after having parked the airplane in a heated hangar.

8 - Remove chocks and/or release ties from the airplane.

Continue ►

Utilization in Cold Weather (0 °C to - 25 °C) and Very Cold Weather (- 25 °C to - 40 °C) – Envelope 2 and 3 2 / 6

► *Continuing*

9 - Check the free deflection of the flight controls and of the elevator trim.

10 - ENGINE MODE switch .... OFF

11 - AUX BP switch .... OFF or AUTO

12 - **AUX BP ON** .... Check OFF

13 - IGNITION pushbutton .... ON
During 30 seconds
Status light in green

14 - **IGNITION** .... Check ON

Then:

15 - IGNITION pushbutton .... AUTO
Status light in blue

16 - **IGNITION** .... Check OFF

NOTE

This enables to preheat spark igniters before starting the engine.

Before starting engine:

17 - Perform normal procedures defined in Subsection(s) 4.3 and/or 4.4.

Engine start:

CAUTION

The starting must be mandatorily performed using an external power source (GPU).

18 - Ground power unit .... Connected

19 - SOURCE selector .... GPU

20 - **GPU DOOR** .... Check ON

Continue ►

Utilization in Cold Weather (0 °C to - 25 °C) and Very Cold Weather (- 25 °C to - 40 °C) – Envelope 2 and 3 3 / 6

► *Continuing*

21 - Battery and ESS. bus VOLTS .... Check voltage ≈ 28 Volts
On EIS of MFD

22 - THROTTLE .... IDLE

23 - GND FEATHER switch .... Check OFF / Guarded

24 - ENGINE MODE switch .... RUN / Guarded

25 - AUX BP switch .... AUTO

26 - **AUX BP ON** .... Check ON

27 - **FUEL PRESS** .... Check OFF

28 - IGNITION pushbutton .... ON
Status light in green

29 - **IGNITION** .... Check ON

30 - Propeller area .... Clear

31 - STARTER switch .... ON
2 seconds, then release

32 - **STARTER** .... Check ON

NOTE

Starter limits and checks of starting sequence are unchanged.

When Ng > 45%:

33 - Starter .... Check OFF automatically

34 - **STARTER** .... Check OFF

35 - Engine parameters .... Check

NOTE

Ng depends on external conditions.

36 - **AUX BP ON** .... Check OFF

Continue ►

Utilization in Cold Weather (0 °C to - 25 °C) and Very Cold Weather (- 25 °C to - 40 °C) – Envelope 2 and 3 4 / 6

► *Continuing*

37 - SOURCE selector .... BATT

38 - **BAT OFF** .... Check OFF

39 - IGNITION pushbutton .... AUTO
Status light in blue

40 - **IGNITION** .... Check OFF

41 - AP/TRIMS switch .... ON / Test OK
To secure the feather position

42 - GND FEATHER switch .... ON
To allow ground personnel to reach GPU plug

>> *postMod: MOD70-0753-00C*

43 - **FEATHER SECURED** .... Check ON

>> *All*

44 - Ground power unit .... Disconnect

45 - GPU door .... Close

46 - **GPU DOOR** .... Check OFF

47 - GND FEATHER switch .... OFF
When ground personnel is cleared from propeller area

48 - GENERATOR selector .... MAIN

49 - **MAIN GEN** .... Check OFF
Reset if necessary

After engine start:

As soon as the current flow is lower than 100 A:

50 - FAN selector .... OFF

51 - TEMP selector .... Max. warm

52 - BLEED switch .... AUTO

Continue ►

Utilization in Cold Weather (0 °C to - 25 °C) and Very Cold Weather (- 25 °C to - 40 °C) – Envelope 2 and 3 5 / 6

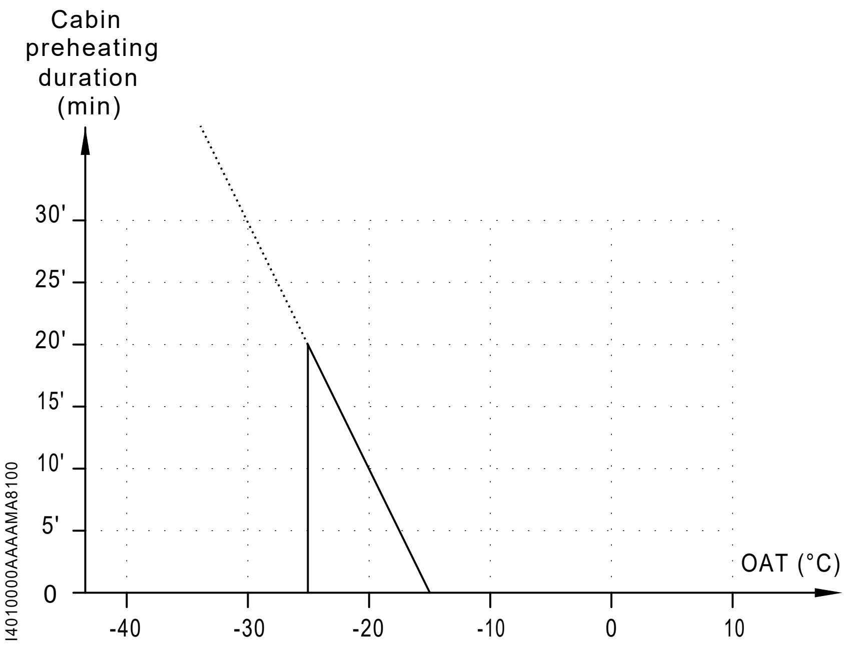
► *Continuing*

When operating in Envelope 3:

53 - Allow the cabin to heat respecting defined time – see Figure 4.5.2.

Before switching on the navigation and monitoring systems. This allows to respect minimum temperatures necessary for the equipment operation

Figure 4.5.2 - Cabin Heating Duration



54 - Perform normal procedures defined in Subsection(s) 4.3 and/or 4.4.

Continue ►

Utilization in Cold Weather (0 °C to - 25 °C) and Very Cold Weather (- 25 °C to - 40 °C) – Envelope 2 and 3 6 / 6

► *Continuing*

Before taxiing / Taxiing / Before line up / Takeoff:

55 - Perform procedure ..... Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) – Envelope 1

Landing / After landing / Shutdown:

56 - Perform procedure ..... Utilization in Cold Weather (0 °C to -25 °C) and Very Cold Weather (-25 °C to -40 °C) – Envelope 1

NOTE

If landing is foreseen by cold or very cold weather, or in case of prolonged operation of the airplane in such conditions, it is recommended to prepare the airplane as specified in Subsection Utilization in Cold Weather (-0 °C to -25 °C) or Very Cold Weather (-25 °C to -40 °C).

End of procedure.

Landing Procedure with Strong Headwind or Crosswind 1 / 2

If landing must be performed with strong headwind or crosswind:

1 - Increase approach airspeed by the greatest of these two following values:

- $\Delta V = \frac{\text{headwind} - 10}{2}$ (Ex. headwind = 30 kt i.e. ΔV = 10 kt),
- Gust amplitude = wind gust − steady wind (Ex. for wind 20G35, Gust amplitude = 15 kt).

2 - FLAPS lever .... LDG

NOTE

Do not set the flaps in the TO position. Lateral control is not improved, and flare phase is lengthened in time and in distance, with increase of piloting difficulties and landing performance.

During approach with crosswind:

CAUTION

Do not use or select the fuel tank on the low wing side during prolonged sideslips with a fuel low warning or gauge indicating low.

CAUTION

Maximum sideslip duration is 30 seconds.

3 - Maintain the airplane in drift correction through the last possible moment until beginning the flare.

In short final, on a short runway:

4 - Use normal approach airspeed .... IAS = 85 KIAS

Before touch-down:

5 - Generate a slideslip with the rudder in order to align fuselage with the runway (i.e left crosswind, left wing low).

Continue ►

Landing Procedure with Strong Headwind or Crosswind 2 / 2

► *Continuing*

Immediately after landing:

CAUTION

Do not try to stabilize the airplane by pushing down the elevator control just after the touch; this operation may provide pitch oscillations while increasing the yaw movement to the wind.
Do not deflect ailerons into wind while taxiing. This will raise spoilers and have a detrimental effect. A good solution is to maintain ailerons to neutral position during taxiing after landing and taxiing before takeoff.

6 - FLAPS lever .... UP

NOTE

Flaps travel is slow and will not have an appreciable effect on landing performance.

Maximum demonstrated crosswind for landing is 20 kt.

The most restrictive situation is as follows:

- takeoff with wind coming from the left,
- wet runway,
- aft C.G.

End of procedure.

Utilization on Grass Runway 1 / 2

CAUTION

The small wheels of the airplane and its weight may lead it to sink in soaked or soft ground.

Before planning the landing, ensure that the field is hard, smooth and dry enough. Landing and moreover takeoff shall not begin if any doubt exists about the condition of such a runway.

Particular directives

Taxi / Takeoff:

1 - INERT SEP switch .... ON

2 - **INERT SEP ON** .... Check ON

► Do not use the reverse ◄

NOTE

In fact, on a flat runway with grass, it is necessary to increase power significantly above IDLE, so the pilot will not be tempted to use the reverse.

Landing:

3 - INERT SEP switch .... ON

4 - **INERT SEP ON** .... Check ON

After wheels touch down:

5 - Reverse .... Only if necessary

CAUTION

Do not maintain reverse at airspeeds below 40 KIAS to avoid ingestion of foreign matter.

Continue ►

Utilization on Grass Runway 2 / 2

► *Continuing*

NOTE

Under 40 KIAS, using the reverse makes a cloud of solid particles (dusts, sand, gravels, cut grass, etc.) appear around the front face of the airplane. This will damage the propeller and, after ingestion, the engine internal components (compressor and turbine blades).

End of procedure.

GPS Navigation 1 / 1

Set up conditions

1 - Verify if the data base is current.

2 - Verify that altitude data is valid for the GPS prior to flight.

Check the systems availability requirements in Section 2: Limitations – see Table 2.6.1, depending on the planned navigation performance.

GPS flight plan

In the active flight plan, addition of a STAR or an approach is always made at the end of the flight plan. In the scope of these additions, the pilot must pay attention not to duplicate points.

End of procedure.

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Section 5

Performance

Table of Contents

5.1 - General

This section provides all required performance data for airplane operations, along with additional related information.

Performance tables provided in this section are given for the various configurations of the inertial separator, as well as the status of the Engine Bleed Air System.

The title of each table and associated paragraph delineate the specific configuration with the following suffixes:

- No suffix:
  - . INERT SEP is OFF, and
  - . **P2.5 HI** and **P3** messages are OFF
- "P2.5 HI or P3":
  - . INERT SEP is OFF, and
  - . **P2.5 HI** or **P3** message is ON
- "INERT SEP":
  - . INERT SEP is ON, and
  - . **P2.5 HI** and **P3** messages are OFF
- "INERT SEP – P2.5 HI or P3":
  - . INERT SEP is ON, and
  - . **P2.5 HI** or **P3** message is ON.

Supplements in Section 9 provide specific airplane performance associated with optional equipment and systems.

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5.2 - Noise Level

	Maximum noise level permitted	Demonstrated noise level
FAR PART 36, Appendix G - Amendment 31	88 dB(A)	77.1 dB(A)
ICAO, Annex 16, Vol. 1, 8th edition, Amendment 12 Chapter 10, Appendix 6	85 dB(A)	77.1 dB(A)

Approved noise levels for TBM airplanes are stated in the EASA.A.010 Type Certificate Data Sheet.

NOTE

No determination has been made by the Federal Aviation Administration that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into or out of any airport.

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5.3 - Airspeed Calibration

NOTE

Indicated airspeeds (IAS): indicated airspeed values assume zero instrument error (power configuration for cruise flight conditions).

Table 5.3.1 - Normal Static Source

Flaps UP LDG GR UP		Flaps TO LDG GR DN		Flaps LDG LDG GR DN	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
125	128	70	69	60	58
150	154	80	80	70	68
175	179	90	90	80	78
200	205	100	101	90	88
225	230	120	121	100	98
250	255	140	141	110	108
266	271	160	162	120	118
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	147	81	79	69	67
173	177	92	92	81	78
201	206	104	104	92	90
230	236	115	116	104	101
259	264	138	139	115	113
288	293	161	162	127	124
307	312	184	187	138	136

Table 5.3.2 - Alternate Static Source (Bleed AUTO)

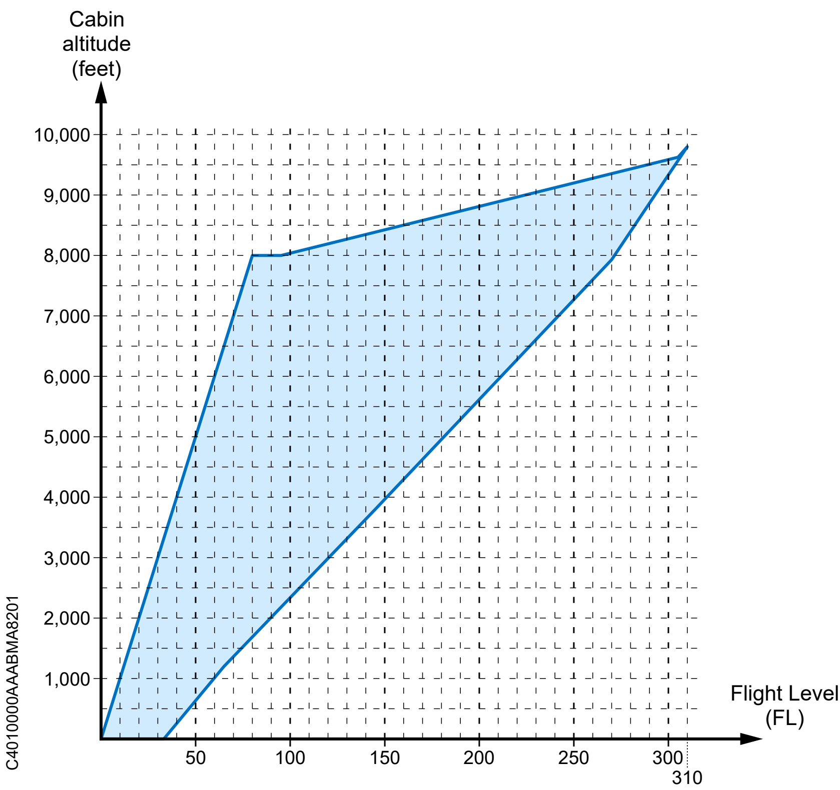
Flaps UP LDG GR UP		Flaps TO LDG GR DN		Flaps LDG LDG GR DN	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
125	124	70	70	60	59
150	149	80	80	70	69
175	174	90	90	80	79
200	199	100	100	90	90
225	224	120	120	100	100
250	249	140	139	110	110
271	270	160	159	120	120
MPH IAS	MPH CAS	MPH IAS	MPH CAS	MPH IAS	MPH CAS
144	142	81	81	69	68
173	171	92	92	81	79
201	200	104	104	92	91
230	229	115	115	104	104
259	258	138	138	115	115
288	287	161	160	127	127
312	311	184	183	138	138

5.4 - Cabin Pressurization Envelope

NOTE

The chart below shows the cabin altitude that can be obtained at different flight levels, taking into account the departure airport altitude, cruise flight level and LFE (Landing Field Elevation).

Figure 5.4.1 - Cabin Pressurization Operating Envelope



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5.5 - SAT - OAT Conversions

NOTE

These indicated temperatures are provided for stabilized cruise at normal operating power.

Table 5.5.1 - SAT - OAT Conversions

Pressure altitude (ft)	ISA - 20 °C		ISA - 10 °C		ISA		ISA + 10 °C		ISA + 20 °C	
	SAT	OAT	SAT	OAT	SAT	OAT	SAT	OAT	SAT	OAT
SL	- 05	- 04	05	06	15	16	25	26	35	36
2,000	- 09	- 08	01	02	11	12	21	22	31	32
4,000	- 13	- 12	- 03	- 02	07	08	17	18	27	28
6,000	- 17	- 16	- 07	- 06	03	04	13	14	23	24
8,000	- 21	- 20	- 11	- 10	- 01	00	09	10	19	20
10,000	- 25	- 24	- 15	- 14	- 05	- 04	05	06	15	16
12,000	- 29	- 28	- 19	- 18	- 09	- 08	01	02	11	12
14,000	- 33	- 32	- 23	- 22	- 13	- 12	- 03	- 02	07	08
16,000	- 37	- 36	- 27	- 26	- 17	- 16	- 07	- 06	03	04
18,000	- 41	- 40	- 31	- 30	- 21	- 20	- 11	- 10	- 01	00
20,000	- 45	- 44	- 35	- 34	- 25	- 24	- 15	- 14	- 05	- 04
22,000	- 49	- 48	- 39	- 38	- 29	- 28	- 19	- 18	- 09	- 08
24,000	- 53	- 52	- 43	- 42	- 33	- 32	- 23	- 22	- 13	- 12
26,000	- 57	- 56	- 47	- 46	- 37	- 36	- 27	- 26	- 17	- 16
28,000	- 61	- 60	- 51	- 50	- 41	- 40	- 31	- 30	- 21	- 20
30,000	- 65	- 64	- 55	- 54	- 45	- 44	- 35	- 34	- 25	- 24
31,000	- 67	- 66	- 57	- 56	- 47	- 46	- 37	- 36	- 27	- 26

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5.6 - Stall Speeds

Table 5.6.1 - Stall Speeds

Airplane weight lbs (kg)	Config.		Bank											
	IDLE		0°			30°			45°			60°		
	LDG GR	Flaps	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS	KIAS	KCAS	MPH IAS
4,850 (2,200)	UP	UP	65	66	75	70	71	81	78	79	90	91	93	105
	DN	TO	62	63	71	67	68	77	73	75	84	87	89	100
	DN	LDG	53	53	61	57	57	66	63	63	73	75	75	86
5,512 (2,500)	UP	UP	70	71	81	75	76	86	82	84	94	98	100	113
	DN	TO	66	67	76	71	72	82	78	80	90	93	95	107
	DN	LDG	57	57	66	61	61	70	68	68	78	81	81	93
6,579 (2,984)	UP	UP	75	76	86	80	82	92	88	90	101	105	107	121
	DN	TO	71	72	82	75	77	86	84	86	97	100	102	115
	DN	LDG	61	61	70	66	66	76	73	73	84	86	86	99
7,394 to 7,615* (3,354 to 3,454*)	UP	UP	81	83	93	88	89	101	97	99	112	117	119	135
	DN	TO	77	77	89	81	83	93	91	92	105	108	109	124
	DN	LDG	65	65	75	69	70	79	76	77	88	92	92	106

* Stall speeds remain the same when increasing weight because C.G. changes at the same time.

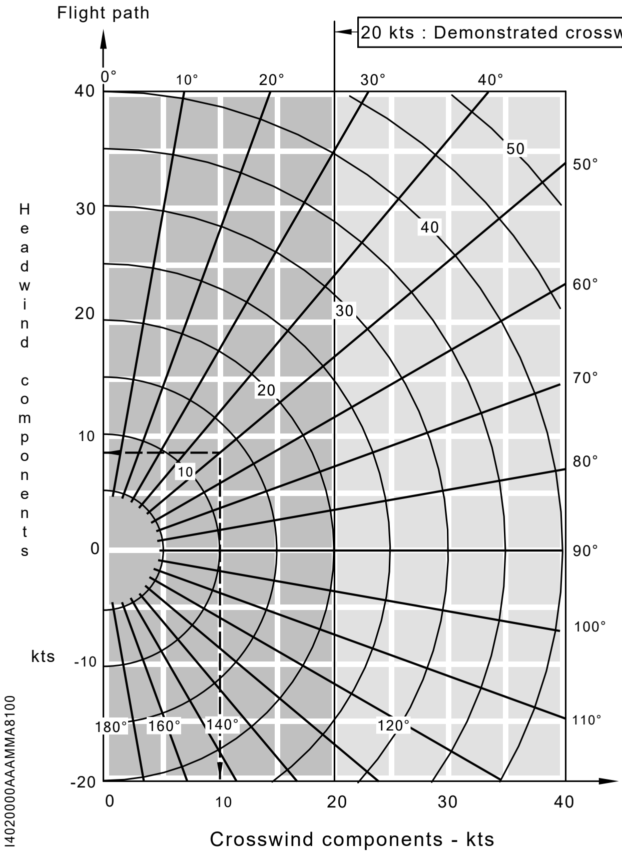
Intentionally left blank

5.7 - Wind Components

Example:

- Angle between wind direction and flight path: 50°
- Headwind: 8 kts
- Crosswind: 10 kts
- Wind speed: 13 kts

Figure 5.7.1 - Wind Components



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5.8 - Engine Operation

The following tables or/and the optimum torque indicator must be used during normal operation of the airplane.

General conditions:

The following conditions apply to all the tables in this subsection:

- Landing gear and flaps UP,
- BLEED switch on AUTO,
- represents the ISA conditions at the flight level.

The torque must be set properly based on flight level and OAT.

NOTE

During normal operation, the power settings are defined by the FADEC to maintain ITT below 840 °C.

Example, for conditions:

- FL = 260,
- OAT = -22 °C,
- Inertial separator OFF,
- **P2.5 HI** and **P3** messages OFF.

The tables in ths subsection give the maximum torque to be set.

Maximum climb power:

TRQ setting = 82% for IAS = 124 KIAS – see Table 5.8.3.

Maximum cruise power:

TRQ setting = 94% – see Table 5.8.21.

Maximum Climb Power – 124 KIAS

NOTE The following table provides references to torque tables that should be used depending on INERT SEP ON/OFF status and bleed status.
In the table below:
- Bleed status "P2.5" = **P2.5 HI** and **P3** messages are OFF,
- Bleed status "P2.5 HI or P3" = **P2.5 HI** or **P3** message is ON.

Table 5.8.1 - References to MXCL Torque Tables – 124 KIAS

INERT SEP	Bleed status	FL < 200	FL > 200
OFF	P2.5	Table 5.8.2	Table 5.8.3
	P2.5 HI or P3	Table 5.8.4	Table 5.8.5
ON	P2.5	Table 5.8.6	Table 5.8.7
	P2.5 HI or P3	Table 5.8.8	Table 5.8.9

MXCL Power (FL < 200) – 124 KIAS

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.2 - MXCL Power (FL < 200) – 124 KIAS

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-24											
-22											
-20											
-18											
-16											
-14											
-12											100
-10											99
-8											97
-6										100	96
-4										99	94
-2										97	92
0									100	95	90
2									98	93	88
4								100	96	91	86
6								99	93	89	84
8							100	96	91	86	
10							99	93	88		
12						100	96	91			
14						98	93				
16					100	95					
18					98						
20				100							

Continue ►

► *Continuing*

Table 5.8.2 - MXCL Power (FL < 200) – 124 KIAS

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
22			100								
24		100									
26	100										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 124 KIAS

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.3 - MXCL Power (FL > 200) – 124 KIAS

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							94	91	87	84	81	78
-64							95	91	88	85	81	78
-62							95	92	88	85	82	79
-60							96	92	89	86	82	79
-58							96	93	89	86	83	79
-56							97	93	90	86	82	78
-54							97	93	89	85	81	78
-52							96	93	88	84	81	77
-50						100	96	92	88	84	80	77
-48						99	95	91	87	84	80	77
-46						98	94	90	87	83	80	76
-44						98	93	90	86	83	79	75
-42						97	93	89	86	82	79	75
-40					100	96	92	89	85	81	77	74
-38					99	96	92	88	84	80	77	73
-36					99	95	91	87	83	79	75	71
-34					98	94	90	86	82	78	74	70
-32					97	93	89	85	81	77	73	69
-30				100	96	92	88	84	80	76	72	68
-28				99	94	90	86	82	78	75	71	67
-26				97	93	89	85	81	77	73	69	66
-24			100	96	92	88	84	80	76	72	68	64
-22			99	95	90	86	82	78	75	71	67	63

Continue ►

► *Continuing*

Table 5.8.3 - MXCL Power (FL > 200) – 124 KIAS

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20			97	93	89	85	81	77	73	69	65	61
-18		100	96	92	88	84	80	76	72	68	64	59
-16		99	95	90	86	82	79	74	70	66	62	58
-14		97	93	89	85	81	77	73	68	64	60	
-12	100	96	92	88	84	80	75	71	66	62		
-10	99	95	91	87	82	78	73	69	65			
-8	97	93	89	85	80	76	71	67				
-6	96	92	87	83	78	74	69					
-4	94	90	85	81	76	72						
-2	92	88	83	79	74							
0	90	86	81	77								
2	88	84	79									
4	86	81										
6	84											

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL < 200) – 124 KIAS – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** or **P3** message is ON.

Table 5.8.4 - MXCL Power (FL < 200) – 124 KIAS [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-24											
-22											
-20											
-18											100
-16											99
-14											97
-12										100	95
-10										98	94
-8									100	97	92
-6									99	95	90
-4									98	93	88
-2								100	96	91	86
0								99	94	89	84
2							100	97	91	86	81
4							99	94	89	83	78
6						100	97	91	86	81	76
8						99	94	88	83	78	
10					100	96	91	86	80		
12					99	94	88	83			
14				100	96	91	85				
16				99	93	88					
18			100	95	90						
20			97	92							

Continue ►

► *Continuing*

Table 5.8.4 - MXCL Power (FL < 200) – 124 KIAS [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
22		100	94								
24	100	97									
26	99										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 124 KIAS – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** or **P3** message is ON.

Table 5.8.5 - MXCL Power (FL > 200) – 124 KIAS [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							96	92	89	86	82	79
-64							96	93	89	86	83	79
-62							97	93	90	87	82	78
-60							98	94	90	86	81	77
-58							98	93	89	85	80	76
-56							97	92	88	84	79	76
-54						100	96	91	87	83	78	75
-52						99	95	90	86	82	78	74
-50						98	94	89	85	81	77	74
-48						97	92	88	84	80	77	73
-46					100	96	91	87	83	80	76	72
-44					99	95	90	87	83	79	75	71
-42					98	94	90	86	82	78	74	70
-40					97	93	89	85	81	77	73	69
-38				100	96	92	88	84	80	76	72	68
-36				99	95	91	87	83	79	75	71	67
-34				98	94	90	85	81	77	73	69	65
-32			100	97	92	88	84	80	76	72	68	64
-30			99	95	91	87	83	79	75	71	67	63
-28			98	94	90	86	82	78	73	70	66	62
-26			97	93	88	84	80	76	72	69	65	60
-24		100	95	91	87	83	79	75	71	67	63	59
-22		99	94	90	86	82	78	74	70	65	61	57

Continue ►

► *Continuing*

Table 5.8.5 - MXCL Power (FL > 200) – 124 KIAS [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20		97	93	89	84	80	76	72	68	64	59	55
-18	100	96	91	87	83	79	75	71	66	62	57	52
-16	99	94	90	86	82	77	73	69	64	59	55	50
-14	97	93	88	84	80	76	71	67	62	57	52	
-12	95	91	87	82	78	74	69	64	59	55		
-10	94	89	85	81	76	72	67	62	57			
-8	92	88	83	79	74	69	64	59				
-6	90	86	81	76	71	67	62					
-4	88	84	79	74	69	64						
-2	86	81	76	71	66							
0	84	79	73	69								
2	81	76	71									
4	78	74										
6	76											

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL < 200) – 124 KIAS – INERT SEP

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.6 - MXCL Power (FL < 200) – 124 KIAS [INERT SEP]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-54											94
-52										97	93
-50										96	92
-48									100	96	92
-46									99	95	91
-44									98	94	90
-42									98	94	89
-40									97	93	88
-38								100	95	91	87
-36								99	94	90	85
-34								97	92	88	84
-32							100	95	90	86	82
-30							98	93	89	85	81
-28						100	96	91	87	84	80
-26						99	94	90	86	83	79
-24						97	93	89	85	82	78
-22					100	96	91	88	84	80	77
-20					98	94	90	86	83	79	76
-18					97	93	89	85	81	78	74
-16				100	95	91	88	84	80	77	73
-14				98	94	90	86	83	79	76	72
-12				97	93	89	85	81	78	74	71
-10			100	96	91	88	84	80	77	73	70

Continue ►

► *Continuing*

Table 5.8.6 - MXCL Power (FL < 200) – 124 KIAS [INERT SEP]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-8			98	94	90	86	82	79	75	72	68
-6			97	92	88	85	81	77	74	70	67
-4		100	95	91	87	83	79	76	72	69	65
-2		98	94	89	85	82	78	74	71	67	63
0	100	96	92	88	84	80	77	73	69	65	61
2	99	95	90	86	82	79	75	71	67	63	59
4	97	93	89	85	81	77	73	69	65	61	57
6	96	91	87	83	79	75	71	67	63	59	55
8	94	89	85	81	77	73	69	64	60	57	
10	91	87	83	79	75	71	66	62	58		
12	89	85	81	77	72	68	64	60			
14	87	83	79	74	70	66	61				
16	85	81	76	71	67	63					
18	83	78	73	69	65						
20	80	75	71	66							
22	77	72	68								
24	74	70									
26	71										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 124 KIAS – INERT SEP

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.7 - MXCL Power (FL > 200) – 124 KIAS [INERT SEP]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							71	68	66	63	60	58
-64						75	72	69	66	63	61	58
-62					78	75	72	69	66	64	61	58
-60				82	79	76	72	70	67	64	60	57
-58			86	83	79	76	73	70	66	63	60	56
-56		90	86	83	79	76	72	69	65	62	59	56
-54	94	90	86	82	79	75	71	68	64	61	58	55
-52	93	89	85	82	78	74	71	67	64	61	58	55
-50	92	88	85	81	77	73	70	66	63	60	57	54
-48	92	88	84	80	76	72	69	65	62	59	57	54
-46	91	87	83	79	75	71	68	65	62	59	56	53
-44	90	86	82	78	74	71	67	64	61	58	56	53
-42	89	85	81	77	73	70	67	64	61	58	55	52
-40	88	84	80	76	72	69	66	63	60	57	54	51
-38	87	82	78	75	71	68	65	62	59	56	53	50
-36	85	81	77	74	71	67	64	61	58	55	52	49
-34	84	80	76	73	70	66	63	60	57	54	51	48
-32	82	79	75	72	69	66	62	59	56	53	50	47
-30	81	78	74	71	68	64	61	58	55	52	49	46
-28	80	77	73	70	67	63	60	57	54	51	48	45
-26	79	76	72	69	66	62	59	56	53	50	47	44
-24	78	74	71	68	64	61	58	55	52	49	46	43
-22	77	73	70	67	63	60	57	54	51	48	45	41

Continue ►

► *Continuing*

Table 5.8.7 - MXCL Power (FL > 200) – 124 KIAS [INERT SEP]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20	76	72	69	66	62	59	56	53	49	46	43	40
-18	74	71	68	64	61	58	55	51	48	45	41	
-16	73	70	66	63	60	57	53	50	46	43	40	
-14	72	69	65	62	59	55	52	48	45	41		
-12	71	67	64	61	57	54	50	46	43	40		
-10	70	66	63	59	56	52	48	45	41			
-8	68	65	61	58	54	50	46	43				
-6	67	63	59	56	52	48	44					
-4	65	61	58	54	50	46						
-2	63	59	55	52	48							
0	61	57	53	50								
2	59	55	51									
4	57	53										
6	55											

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL < 200) – 124 KIAS – INERT SEP – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** or **P3** message is ON.

Table 5.8.8 - MXCL Power (FL < 200) – 124 KIAS [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-54											94
-52										98	93
-50										97	92
-48									100	95	90
-46									98	94	89
-44									97	92	88
-42								100	95	91	86
-40								98	94	89	84
-38							100	97	92	87	82
-36							99	95	90	85	81
-34							98	93	88	84	79
-32						100	96	91	86	82	78
-30						98	94	89	84	81	77
-28					100	96	92	87	83	79	76
-26					99	94	90	86	82	78	74
-24					97	93	88	84	81	77	73
-22				100	95	91	87	83	79	76	72
-20				98	94	90	86	82	78	75	71
-18				97	92	88	84	81	77	73	69
-16			100	95	91	87	83	79	75	72	68
-14			98	94	89	85	81	77	74	70	66
-12		100	96	92	87	84	80	76	72	69	65
-10		99	95	90	86	82	78	74	71	67	63

Continue ►

► *Continuing*

Table 5.8.8 - MXCL Power (FL < 200) – 124 KIAS [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-8		97	93	88	84	80	77	73	69	65	61
-6	100	96	91	87	83	79	75	71	67	63	59
-4	99	94	89	85	81	77	73	69	65	61	57
-2	97	92	88	83	79	75	71	67	63	60	55
0	95	90	85	81	77	73	69	65	61	57	53
2	92	88	83	79	75	71	67	63	59	55	50
4	90	86	81	77	73	70	65	61	57	52	48
6	88	84	79	75	71	67	63	59	54	50	45
8	86	82	78	73	69	65	60	56	52	46	
10	84	80	75	71	67	62	58	53	47		
12	82	77	73	68	64	59	55	48			
14	79	75	70	66	61	56	49				
16	77	72	67	63	57	50					
18	74	69	64	58	51						
20	71	66	60	52							
22	68	61	53								
24	62	54									
26	55										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 124 KIAS – INERT SEP – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** or **P3** message is ON.

Table 5.8.9 - MXCL Power (FL > 200) – 124 KIAS [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							73	70	67	64	60	57
-64						76	73	70	66	63	59	56
-62					80	76	72	69	65	62	58	55
-60				84	79	76	72	68	64	61	57	54
-58			87	83	79	75	71	67	63	60	56	53
-56		91	86	82	78	74	70	66	62	59	55	52
-54	94	90	85	81	77	73	69	65	61	58	54	51
-52	93	89	84	80	75	71	67	64	60	57	53	50
-50	92	87	83	79	74	70	66	63	59	56	53	50
-48	90	86	81	77	73	69	65	61	58	55	52	49
-46	89	85	80	76	72	68	64	60	57	54	52	48
-44	88	83	79	74	70	66	63	60	57	54	51	48
-42	86	82	77	73	69	65	62	59	56	53	50	47
-40	84	80	75	72	68	64	61	58	55	52	49	45
-38	82	78	74	70	67	64	60	57	54	51	48	44
-36	81	77	73	69	66	63	59	56	53	50	47	43
-34	79	75	72	68	65	62	59	55	52	49	46	42
-32	78	74	71	67	64	61	57	54	51	48	44	41
-30	77	73	70	66	63	60	56	53	50	46	43	40
-28	76	72	69	65	62	58	55	52	48	45	42	
-26	74	71	67	64	61	57	54	50	47	44	40	
-24	73	70	66	63	59	56	52	49	46	42	39	
-22	72	69	65	62	58	55	51	48	44	41		

Continue ►

► *Continuing*

Table 5.8.9 - MXCL Power (FL > 200) – 124 KIAS [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20	71	67	64	60	57	53	50	46	42	39		
-18	69	66	62	59	55	52	48	44	40			
-16	68	64	61	57	54	50	46	42	38			
-14	66	63	59	56	52	48	44	40				
-12	65	61	58	54	50	46	42	38				
-10	63	60	56	52	48	44	39					
-8	61	58	54	50	46	41	37					
-6	59	56	52	48	43	39						
-4	57	54	49	45	41	37						
-2	55	51	47	43	38							
0	53	49	44	40								
2	50	46	41									
4	48	43										
6	45											

NOTE Refer to General conditions at the beginning of this subsection.

Maximum Climb Power – 170 KIAS / M 0.40

NOTE The following table provides references to torque tables that should be used depending on INERT SEP ON/OFF status and bleed status.
In the table below:
- Bleed status "P2.5" = **P2.5 HI** and **P3** messages are OFF,
- Bleed status "P2.5 HI or P3" = **P2.5 HI** or **P3** message is ON.

Table 5.8.10 - References to MXCL Torque Tables – 170 KIAS / M 0.40

INERT SEP	Bleed status	FL < 200	FL > 200
OFF	P2.5	Table 5.8.11	Table 5.8.12
	P2.5 HI or P3	Table 5.8.13	Table 5.8.14
ON	P2.5	Table 5.8.15	Table 5.8.16
	P2.5 HI or P3	Table 5.8.17	Table 5.8.18

MXCL Power (FL < 200) – 170 KIAS / M 0.40

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.11 - MXCL Power (FL < 200) – 170 KIAS / M 0.40

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-24											
-22											
-20											
-18											
-16											
-14											
-12											
-10											
-8											
-6											100
-4											99
-2											97
0										100	95
2										98	93
4									100	95	90
6									98	92	87
8								100	95	90	
10								97	92		
12							100	95			
14							97				
16						100					
18					100						
20				100							

Continue ►

► *Continuing*

Table 5.8.11 - MXCL Power (FL < 200) – 170 KIAS / M 0.40

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
22			100								
24		100									
26	100										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 170 KIAS / M 0.40

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.12 - MXCL Power (FL > 200) – 170 KIAS / M 0.40

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66								97	92	89	85	81
-64								97	93	89	85	81
-62								98	94	90	86	82
-60								98	94	90	86	82
-58								99	95	91	86	82
-56								98	94	90	85	81
-54								98	93	89	84	80
-52								97	92	88	84	80
-50								96	92	88	83	79
-48							100	95	91	87	83	79
-46							99	95	90	87	83	78
-44							98	94	90	86	82	78
-42							98	93	89	85	81	77
-40							97	93	89	85	80	76
-38							96	92	88	83	79	75
-36						100	95	91	86	82	78	74
-34						99	94	90	85	81	77	72
-32						98	93	88	84	80	76	71
-30					100	96	92	87	83	79	74	70
-28					99	95	90	86	81	77	73	69
-26					98	93	89	85	80	76	72	68
-24					97	92	88	83	79	75	71	66
-22				100	95	91	86	82	78	73	69	65

Continue ►

► *Continuing*

Table 5.8.12 - MXCL Power (FL > 200) – 170 KIAS / M 0.40

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20				98	94	90	85	81	76	72	68	63
-18				97	93	88	84	79	75	70	66	61
-16			100	96	91	87	82	78	73	69	64	60
-14			98	94	90	86	81	76	71	67	62	
-12			97	93	88	84	79	74	69	65		
-10		100	96	92	87	82	77	72	67			
-8		98	94	90	84	80	75	70				
-6	100	96	92	87	82	78	73					
-4	99	94	90	85	80	76						
-2	97	92	88	83	78							
0	95	90	85	81								
2	93	88	83									
4	90	85										
6	87											

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL < 200) – 170 KIAS / M 0.40 – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** or **P3** message is ON.

Table 5.8.13 - MXCL Power (FL < 200) – 170 KIAS / M 0.40 [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-24											
-22											
-20											
-18											
-16											
-14											
-12											100
-10											99
-8											97
-6										100	95
-4										98	93
-2									100	96	90
0									98	93	88
2								100	96	90	85
4								98	93	88	82
6							100	95	90	85	80
8							98	93	87	82	
10						100	95	90	84		
12						98	92	87			
14					100	95	89				
16				100	97	91					
18				99	94						
20			100	96							

Continue ►

► *Continuing*

Table 5.8.13 - MXCL Power (FL < 200) – 170 KIAS / M 0.40 [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
22			98								
24		100									
26	100										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 170 KIAS / M 0.40 – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** or **P3** message is ON.

Table 5.8.14 - MXCL Power (FL > 200) – 170 KIAS / M 0.40 [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66								98	94	90	86	82
-64								99	94	91	87	82
-62								99	95	90	86	81
-60								99	94	89	85	80
-58								98	93	88	84	79
-56								97	92	87	82	78
-54								96	91	86	81	77
-52							100	95	90	85	81	77
-50							98	93	88	84	80	76
-48							97	92	88	84	80	75
-46							96	91	87	83	79	75
-44						100	95	91	86	82	78	74
-42						99	94	90	85	81	77	72
-40						97	93	89	84	80	76	71
-38						96	92	88	83	79	74	70
-36					100	95	91	86	82	78	73	69
-34					99	94	90	85	81	76	72	67
-32					98	93	88	84	79	75	71	66
-30					96	92	87	83	78	74	69	65
-28				100	95	90	86	81	77	73	68	64
-26				98	93	89	84	80	75	71	67	62
-24			100	97	92	88	83	79	74	70	65	61
-22			99	95	91	86	82	77	73	68	63	59

Continue ►

► *Continuing*

Table 5.8.14 - MXCL Power (FL > 200) – 170 KIAS / M 0.40 [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20			98	94	89	85	80	76	71	66	61	56
-18			97	93	88	83	78	74	69	64	59	54
-16		100	95	91	86	81	77	72	67	62	56	52
-14		98	93	89	84	80	75	70	64	59	54	
-12	100	96	91	87	82	78	72	67	62	57		
-10	99	94	90	86	80	75	70	64	59			
-8	97	92	88	83	78	73	67	62				
-6	95	91	85	81	75	70	65					
-4	93	88	83	78	73	68						
-2	90	85	80	75	70							
0	88	83	78	73								
2	85	80	75									
4	82	77										
6	80											

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL < 200) – 170 KIAS / M 0.40 – INERT SEP

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.15 - MXCL Power (FL < 200) – 170 KIAS / M 0.40 [INERT SEP]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-54											99
-52											99
-50											98
-48											97
-46											97
-44										100	96
-42										99	95
-40										98	93
-38									100	96	92
-36									99	94	90
-34									97	93	88
-32								100	95	91	87
-30								98	94	90	86
-28							100	96	92	88	85
-26							99	95	91	87	84
-24							98	94	90	86	83
-22						100	96	92	89	85	81
-20						99	95	91	87	84	80
-18						98	93	90	86	83	79
-16					100	96	92	88	85	81	78
-14					99	95	91	87	83	80	77
-12					98	94	90	86	82	79	75
-10				100	96	92	88	84	81	77	74

Continue ►

► *Continuing*

Table 5.8.15 - MXCL Power (FL < 200) – 170 KIAS / M 0.40 [INERT SEP]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-8				99	95	91	87	83	79	76	72
-6				97	93	89	85	82	78	74	71
-4			100	96	91	88	84	80	76	73	69
-2			98	94	90	86	82	79	75	71	67
0		100	97	92	88	85	81	77	73	69	65
2		99	95	91	87	83	79	75	71	67	63
4		98	93	89	85	81	77	73	68	64	60
6	100	96	91	87	83	79	75	70	66	62	58
8	98	93	89	85	81	77	72	68	64	60	
10	95	91	87	83	79	74	70	66	62		
12	93	89	85	81	76	72	67	63			
14	91	87	83	78	73	69	65				
16	89	85	80	75	71	67					
18	87	82	77	73	68						
20	84	79	74	70							
22	81	76	71								
24	78	73									
26	75										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 170 KIAS / M 0.40 – INERT SEP

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.16 - MXCL Power (FL > 200) – 170 KIAS / M 0.40 [INERT SEP]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							77	74	70	67	64	62
-64						81	77	74	71	68	65	62
-62					85	81	78	74	71	68	65	61
-60				90	86	82	78	75	71	67	64	60
-58			93	90	86	81	78	74	70	67	63	60
-56		96	93	89	85	81	77	73	69	66	62	59
-54	99	96	92	89	84	80	76	72	69	65	61	58
-52	99	95	91	88	84	79	75	71	68	64	61	58
-50	98	94	91	87	83	78	74	71	67	63	60	57
-48	97	94	90	86	82	77	73	70	66	63	60	57
-46	97	93	89	85	80	76	72	69	66	63	59	56
-44	96	92	88	84	79	75	71	68	65	62	59	55
-42	95	91	86	83	78	74	71	68	64	61	58	54
-40	93	89	85	82	77	74	70	67	64	60	57	53
-38	92	88	84	80	76	73	69	66	63	59	56	52
-36	90	86	82	79	75	72	68	65	62	58	55	52
-34	88	85	81	78	74	71	67	64	60	57	54	51
-32	87	84	80	77	74	70	66	63	59	56	53	50
-30	86	83	79	76	72	69	65	62	58	55	52	49
-28	85	82	78	75	71	68	64	61	57	54	51	48
-26	84	80	77	74	70	67	63	60	56	53	50	47
-24	83	79	76	73	69	65	62	58	55	52	49	
-22	81	78	75	72	68	64	61	57	54	51	47	

Continue ►

► *Continuing*

Table 5.8.16 - MXCL Power (FL > 200) – 170 KIAS / M 0.40 [INERT SEP]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-20	80	77	74	71	67	63	60	56	53	49		
-18	79	76	72	69	66	62	58	55	51			
-16	78	74	71	68	64	61	57	53	49			
-14	77	73	70	67	63	59	55	51				
-12	75	72	68	65	61	57	54					
-10	74	70	67	64	60	56						
-8	72	69	65	62	58	54						
-6	71	67	64	60	56							
-4	69	65	62	58								
-2	67	63	59									
0	65	61	57									
2	63	59										
4	60	57										
6	58											

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL < 200) – 170 KIAS / M 0.40 – INERT SEP – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** or **P3** message is ON.

Table 5.8.17 - MXCL Power (FL < 200) – 170 KIAS / M 0.40 [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-54											100
-52											99
-50											97
-48										100	96
-46										99	94
-44										97	93
-42									100	96	91
-40									99	94	89
-38									97	92	88
-36								100	95	90	86
-34								98	93	88	84
-32							100	96	91	87	83
-30							98	94	89	85	82
-28						100	97	92	88	84	80
-26						99	95	91	86	83	79
-24						98	93	89	85	82	78
-22					100	96	92	88	84	80	77
-20					99	95	90	86	83	79	75
-18					97	93	89	85	81	77	74
-16				100	96	92	87	84	80	76	72
-14				99	94	90	86	82	78	74	71
-12			100	97	92	88	84	80	76	73	69

Continue ►

► *Continuing*

Table 5.8.17 - MXCL Power (FL < 200) – 170 KIAS / M 0.40 [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-10			99	95	91	87	83	79	75	71	67
-8			97	93	89	85	81	77	73	69	65
-6		100	96	91	87	83	79	75	71	67	63
-4		99	94	90	85	81	77	73	69	65	61
-2	100	97	92	88	83	79	75	71	67	63	59
0	99	94	90	85	81	77	73	69	65	61	57
2	97	92	87	83	79	75	71	67	63	58	54
4	94	90	85	81	77	74	69	65	60	56	
6	92	88	84	80	75	71	67	62	58	53	
8	90	86	82	78	73	69	64	60	55		
10	88	84	79	75	70	66	61	57			
12	86	82	77	72	68	63	58				
14	83	79	74	69	65	60	53				
16	81	76	71	67	61	54					
18	78	73	68	62	55						
20	75	70	63	56							
22	72	64	57								
24	65	58									
26	59										

NOTE Refer to General conditions at the beginning of this subsection.

MXCL Power (FL > 200) – 170 KIAS / M 0.40 – INERT SEP – P2.5 HI or P3

NOTE Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** or **P3** message is ON.

Table 5.8.18 - MXCL Power (FL > 200) – 170 KIAS / M 0.40 [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							78	75	71	68	64	60
-64						82	78	74	70	67	63	59
-62					86	82	77	73	70	66	62	58
-60				90	85	81	76	72	68	65	61	57
-58			93	89	84	80	75	71	67	64	60	56
-56		97	92	88	83	79	74	70	66	62	59	55
-54	100	96	91	87	82	78	73	69	65	61	57	54
-52	99	94	90	86	81	76	72	68	64	60	57	53
-50	97	93	88	84	80	75	71	67	62	59	56	53
-48	96	92	87	83	78	74	69	65	62	59	55	52
-46	94	90	86	82	77	72	68	64	61	58	55	51
-44	93	89	84	80	75	71	67	64	60	57	54	51
-42	91	87	82	78	74	70	66	63	60	56	53	49
-40	89	85	81	77	73	69	65	62	59	55	52	48
-38	88	83	79	76	72	68	64	61	58	54	51	47
-36	86	82	78	75	71	67	64	60	57	53	50	46
-34	84	80	77	74	70	66	63	59	55	52	49	45
-32	83	79	76	73	69	65	61	58	54	51	47	
-30	82	78	75	72	68	64	60	57	53	50		
-28	80	77	74	71	66	63	59	55	52	48		
-26	79	76	72	69	65	61	58	54	50			
-24	78	75	71	68	64	60	56	53	49			

Continue ►

► *Continuing*

Table 5.8.18 - MXCL Power (FL > 200) – 170 KIAS / M 0.40 [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-22	77	73	70	66	62	59	55	51				
-20	75	72	68	65	61	57	53					
-18	74	70	67	64	59	56	52					
-16	72	69	65	62	58	54						
-14	71	67	64	60	56							
-12	69	66	62	58								
-10	67	64	60	56								
-8	65	62	58									
-6	63	60	56									
-4	61	58										
-2	59	55										
0	57											
2	54											

NOTE Refer to General conditions at the beginning of this subsection.

Maximum Cruise Power

NOTE The following table provides references to torque tables that should be used depending on INERT SEP ON/OFF status and bleed status.
In the table below:
- Bleed status "P2.5" = **P2.5 HI** and **P3** messages are OFF,
- Bleed status "P2.5 HI or P3" = **P2.5 HI** or **P3** message is ON.

Table 5.8.19 - References to MXCR Torque Tables

INERT SEP	Bleed status	FL < 200	FL > 200
OFF	P2.5	Table 5.8.20	Table 5.8.21
	P2.5 HI or P3	Table 5.8.22	Table 5.8.23
ON	P2.5	Table 5.8.24	Table 5.8.25
	P2.5 HI or P3	Table 5.8.26	Table 5.8.27

MXCR Power (FL < 200)

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.20 - MXCR Power (FL < 200)

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-24											
-22											
-20											
-18											
-16											
-14											
-12											
-10											
-8											
-6											
-4											
-2											
0											100
2											98
4										100	95
6										98	93
8									100	95	
10									98		
12								100			
14							100				
16						100					
18					100						

Continue ►

► *Continuing*

Table 5.8.20 - MXCR Power (FL < 200)

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
20				100							
22			100								
24		100									
26	100										

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL > 200)

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.21 - MXCR Power (FL > 200)

OAT (°C)	Flight level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66												97
-64												97
-62												96
-60											100	94
-58											98	93
-56											97	92
-54										100	95	91
-52										99	94	90
-50										98	94	89
-48										98	93	89
-46										97	92	88
-44									100	96	92	87
-42									99	95	90	85
-40									98	93	89	84
-38									97	92	87	82
-36								100	95	90	85	81
-34								99	93	89	84	79
-32								97	92	87	83	78
-30							100	95	90	86	81	76
-28							99	94	89	84	80	75
-26							97	92	87	83	78	73
-24						100	95	91	86	81	77	72

Continue ►

► *Continuing*

Table 5.8.21 - MXCR Power (FL > 200)

OAT (°C)	Flight level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-22						99	94	89	84	80	75	69
-20						97	92	88	83	78	72	67
-18					100	96	91	86	81	75	70	65
-16					99	94	89	84	78	73	68	63
-14					97	92	87	81	76	71	66	
-12				100	95	90	84	79	73	68		
-10				98	93	87	82	76	71			
-8			100	96	90	85	79	74				
-6			99	93	87	82	76					
-4		100	96	90	84	79						
-2		99	93	87	82							
0	100	96	90	84								
2	98	93	87									
4	95	90										
6	93											

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL < 200) – P2.5 HI or P3

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** or **P3** message is ON.

Table 5.8.22 - MXCR Power (FL < 200) [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-24											
-22											
-20											
-18											
-16											
-14											
-12											
-10											
-8											
-6											100
-4											99
-2										100	96
0										99	93
2									100	96	90
4									99	93	87
6								100	96	90	84
8								99	93	87	
10							100	96	90		
12							98	92			
14						100	95				
16						98					
18					100						

Continue ►

► *Continuing*

Table 5.8.22 - MXCR Power (FL < 200) [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
20				100							
22			100								
24		100									
26	100										

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL > 200) – P2.5 HI or P3

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** or **P3** message is ON.

Table 5.8.23 - MXCR Power (FL > 200) [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66											100	95
-64											99	94
-62											98	92
-60											96	91
-58										100	94	89
-56										98	93	87
-54										96	91	86
-52									100	95	90	85
-50									98	94	89	84
-48									97	93	88	83
-46									96	92	87	82
-44								100	95	91	86	81
-42								99	94	89	84	79
-40								98	93	88	83	78
-38								96	91	86	81	76
-36							100	95	90	85	80	75
-34							98	93	88	83	78	73
-32							97	92	86	82	77	72
-30						100	95	90	85	80	75	70
-28						99	93	88	83	78	73	68
-26						97	92	87	81	77	72	66
-24					100	95	90	85	80	75	70	64

Continue ►

► *Continuing*

Table 5.8.23 - MXCR Power (FL > 200) [P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-22					98	93	88	83	78	73	67	62
-20				100	96	91	86	81	76	70	65	59
-18				99	94	89	84	79	73	68	62	56
-16				97	92	87	82	76	70	65	59	54
-14			100	95	90	85	79	73	67	62	56	
-12			98	93	88	82	76	70	65	59		
-10		100	96	91	85	79	73	67	62			
-8		99	93	88	82	76	70	65				
-6	100	96	90	85	79	73	67					
-4	99	94	88	82	76	70						
-2	96	90	84	79	73							
0	93	88	82	76								
2	90	85	79									
4	87	81										
6	84											

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL < 200) – INERT SEP

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.24 - MXCR Power (FL < 200) [INERT SEP]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-48											100
-46											100
-44											98
-42										100	97
-40										100	95
-38										98	93
-36									100	97	92
-34									100	95	90
-32								100	98	93	89
-30								100	96	92	88
-28								99	95	91	87
-26								98	94	90	86
-24							100	97	93	89	85
-22							100	96	92	88	84
-20							99	95	90	86	82
-18						100	97	93	89	85	81
-16						100	96	92	88	84	80
-14						99	95	91	87	83	79
-12					100	98	93	89	85	81	77
-10					100	96	92	88	84	80	76
-8					99	95	90	86	82	79	75
-6				100	97	93	89	85	81	77	73

Continue ►

► *Continuing*

Table 5.8.24 - MXCR Power (FL < 200) [INERT SEP]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-4				100	96	92	88	84	80	76	72
-2				99	94	90	86	82	78	74	70
0			100	97	93	89	85	81	76	72	68
2			100	95	91	87	83	79	74	70	66
4		100	98	94	89	85	81	77	72	68	63
6		100	96	92	87	84	79	74	70	66	60
8	100	98	94	90	86	81	77	72	68	63	
10	100	97	92	88	84	79	75	70	65		
12	99	95	90	86	81	77	72	67			
14	97	93	88	83	79	74	69				
16	95	90	85	81	76	71					
18	92	88	83	78	73						
20	90	85	79	74							
22	86	81	76								
24	83	78									
26	80										

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL > 200) – INERT SEP

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** and **P3** messages are OFF.

Table 5.8.25 - MXCR Power (FL > 200) [INERT SEP]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							80	77	73	70	67	64
-64						84	80	77	74	70	66	63
-62					88	84	80	77	73	69	65	62
-60				92	88	84	80	76	72	68	65	61
-58			96	91	87	83	79	75	71	67	64	60
-56		99	95	91	86	82	78	74	70	66	63	60
-54		99	94	90	85	81	77	73	69	66	62	59
-52		98	93	89	84	80	76	72	68	65	62	58
-50		97	92	88	83	79	75	71	67	64	61	58
-48	100	96	91	86	82	78	74	70	67	64	61	58
-46	100	95	90	85	81	77	72	69	66	63	60	57
-44	98	93	88	84	80	76	72	69	66	63	60	56
-42	97	92	87	83	78	75	71	68	65	62	59	55
-40	95	90	86	81	77	74	70	67	64	61	58	54
-38	93	89	84	80	77	73	70	66	63	60	57	53
-36	92	87	83	79	76	72	69	66	62	59	56	53
-34	90	86	82	79	75	71	68	65	61	58	55	52
-32	89	85	81	78	74	71	67	64	60	57	54	51
-30	88	84	80	77	73	69	66	63	59	56	53	50
-28	87	83	79	76	72	68	65	62	58	55	52	49
-26	86	82	78	74	71	67	64	61	57	54	51	48
-24	85	81	77	73	70	66	63	60	56	53	50	47

Continue ►

► *Continuing*

Table 5.8.25 - MXCR Power (FL > 200) [INERT SEP]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-22	84	80	76	72	69	65	62	59	55	52	49	44
-20	82	79	75	71	68	64	61	57	54	51	46	41
-18	81	78	74	70	67	63	60	56	53	49	44	39
-16	80	76	72	69	65	62	58	55	51	46	41	37
-14	79	75	71	68	64	60	57	53	48	43	38	
-12	77	74	70	66	63	59	55	51	45	40		
-10	76	72	69	65	61	57	53	47	42			
-8	75	71	67	63	59	55	49	44				
-6	73	69	65	61	57	52	46					
-4	72	68	63	59	54	49						
-2	70	66	61	56	51							
0	68	63	59	54								
2	66	61	56									
4	63	58										
6	60											

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL < 200) – INERT SEP – P2.5 HI or P3

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** or **P3** message is ON.

Table 5.8.26 - MXCR Power (FL < 200) [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-54											100
-52											100
-50											99
-48											98
-46										100	96
-44										100	94
-42									100	98	93
-40									100	96	91
-38									99	94	89
-36								100	97	92	87
-34								100	96	91	86
-32								99	94	89	85
-30							100	97	92	88	84
-28							100	95	91	87	83
-26							99	94	89	85	81
-24						100	97	93	88	84	80
-22						100	96	91	87	83	79
-20						99	94	90	86	82	77
-18					100	97	93	88	84	80	76
-16					100	96	91	87	83	79	75
-14					98	94	90	85	81	77	73
-12				100	97	93	88	84	80	76	72

Continue ►

► *Continuing*

Table 5.8.26 - MXCR Power (FL < 200) [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)										
	100	110	120	130	140	150	160	170	180	190	200
-10				100	95	91	86	82	78	74	70
-8			100	98	93	89	85	81	76	72	68
-6			100	96	92	87	83	79	75	70	66
-4		100	99	94	90	85	81	77	73	69	64
-2		100	97	92	88	84	79	75	71	67	62
0		99	95	90	86	82	78	74	69	65	59
2	100	97	93	89	84	80	76	72	67	61	55
4	100	95	91	87	83	78	74	69	64	58	52
6	98	94	89	85	81	76	72	66	60	54	47
8	96	92	87	83	79	74	68	63	57	48	
10	94	90	85	81	76	71	65	59	50		
12	92	88	83	78	73	67	61	52			
14	90	85	80	75	69	63	54				
16	87	82	77	71	65	56					
18	84	79	73	66	57						
20	81	75	68	59							
22	77	69	60								
24	71	62									
26	63										

NOTE Refer to General conditions at the beginning of this subsection.

MXCR Power (FL > 200) – INERT SEP – P2.5 HI or P3

NOTE Use of Recommended Cruise Power is preferred.
Table valid only if **INERT SEP ON** CAS message is ON, and **P2.5 HI** or **P3** message is ON.

Table 5.8.27 - MXCR Power (FL > 200) [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-66							80	76	72	68	64	61
-64						83	79	75	71	67	64	60
-62					87	82	78	74	70	66	63	59
-60				91	86	81	77	73	69	65	62	58
-58			94	90	85	80	76	72	68	64	60	57
-56		98	93	88	84	79	75	71	67	63	59	56
-54	100	97	92	87	82	78	74	70	66	62	58	55
-52	100	96	91	86	81	77	73	68	64	61	57	54
-50	99	94	89	84	80	75	71	67	63	60	57	54
-48	98	93	88	83	78	74	70	66	62	59	56	53
-46	96	91	86	82	77	73	68	65	62	59	56	52
-44	94	90	85	80	75	71	68	64	61	58	55	52
-42	93	88	83	79	74	70	67	64	60	57	54	51
-40	91	86	81	77	73	70	66	63	60	56	53	50
-38	89	85	80	76	72	69	65	62	59	55	52	49
-36	87	83	79	75	71	68	65	61	58	54	51	48
-34	86	82	78	74	70	67	64	60	57	53	50	47
-32	85	81	77	73	70	66	62	59	56	52	49	45
-30	84	80	76	72	68	65	61	58	54	51	48	42
-28	83	79	75	71	67	64	60	57	53	50	46	40
-26	81	78	74	70	66	63	59	55	52	48	43	38
-24	80	76	72	69	65	61	58	54	51	46	40	

Continue ►

► *Continuing*

Table 5.8.27 - MXCR Power (FL > 200) [INERT SEP – P2.5 HI or P3]

OAT (°C)	Flight Level (FL)											
	200	210	220	230	240	250	260	270	280	290	300	310
-22	79	75	71	67	64	60	56	53	49	42	37	
-20	77	74	70	66	62	59	55	51	45	40		
-18	76	72	68	65	61	57	53	48	42	37		
-16	75	71	67	63	59	56	50	44	39			
-14	73	69	66	62	58	53	47	41	36			
-12	72	68	64	60	55	49	43	38				
-10	70	66	62	58	52	45	40	36				
-8	68	64	60	55	48	42	37					
-6	66	62	57	51	45	39	35					
-4	64	60	54	47	42	36						
-2	62	56	50	44	38							
0	59	53	46	40								
2	55	49	42									
4	52	44										
6	47											

NOTE Refer to General conditions at the beginning of this subsection.

5.9 - Takeoff Distances

The following tables provide the takeoff distances for several weight configurations, with inertial separator ON and OFF.

General notes and correction factors:

The following information applies to all the tables in this subsection.

Associated conditions:

- Landing gear DN and flaps TO,
- Short takeoff procedure,
- Hard, dry and level runway.

In table headings:

- TRQ = Torque at brake release,
- GR = Ground roll (in feet),
- D_{50} = Takeoff distance over a 50-foot (15-meter) obstacle (in feet).

Corrections:

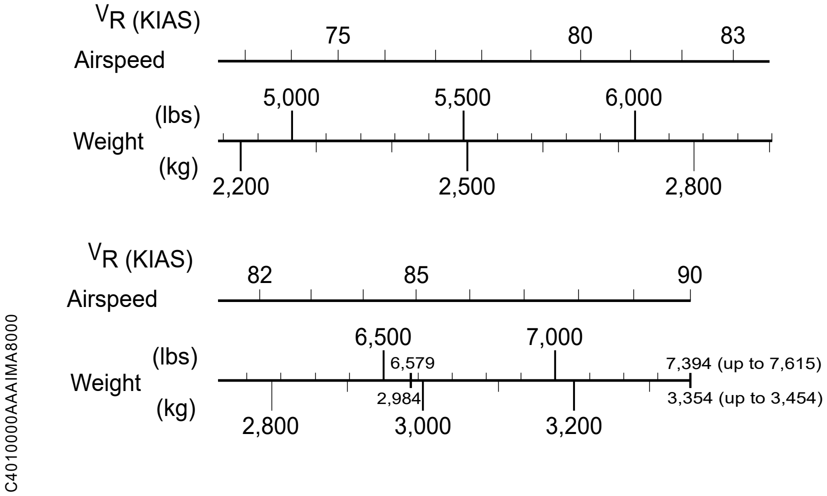
- In case of wind, apply the following corrections:
  . Reduce total distances by 10% every 10 kt of headwind,
  . Increase total distances by 30% every 10 kt of tail wind.
- Other runway surfaces:

  Takeoff distances given in the tables are for takeoff from hard, dry and level runway. Other runway surfaces require the following correction factors.

  Increase distances by:

  . 7% on hard grass,
  . 10% on short grass,
  . 15% on wet runway,
  . 25% on high grass,
  . 30% on slippery runway.

Rotation speed determination:


V_R (KIAS)
Airspeed
75
80
83
Weight
(lbs)
(kg)
5,000
5,500
6,000
2,200
2,500
2,800
V_R (KIAS)
Airspeed
82
85
90
Weight
(lbs)
(kg)
6,500
6,579
7,000
7,394 (up to 7,615)
2,984
3,354 (up to 3,454)
2,800
3,000
3,200
C4010000AAAIMA8000

Weight 5,512 lbs (2,500 kg)

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.1 - Takeoff Distances (ft) – 5,512 lbs (2,500 kg)

At 50 ft = 91 KIAS – 105 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	705	1,150	100%	755	1,225	100%	800	1,300
2,000	100%	750	1,225	100%	825	1,345	100%	890	1,435
4,000	100%	825	1,340	100%	920	1,480	100%	985	1,575
6,000	100%	915	1,475	100%	1,020	1,630	100%	1,110	1,740
8,000	100%	1,015	1,625	100%	1,155	1,800	100%	1,245	1,920
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	850	1,380	100%	905	1,460	100%	960	1,545
2,000	100%	945	1,520	100%	1,005	1,610	100%	1,085	1,705
4,000	100%	1,065	1,675	100%	1,140	1,775	100%	1,215	1,880
6,000	100%	1,190	1,850	100%	1,275	1,960	100%	1,360	2,075
8,000	100%	1,335	2,040	100%	1,425	2,160	100%	1,520	2,285
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - INERT SEP ON CAS message OFF, - Rotation speed: V_R = 77 KIAS, - 15° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	100%	1,020	1,630	100%	1,075	1,690			
2,000	100%	1,155	1,800	100%	1,205	1,865			
4,000	100%	1,290	1,985	100%	1,350	2,060			
6,000	100%	1,450	2,190	100%	1,510	2,275			
8,000	100%	1,620	2,415	100%	1,695	2,505			
* TRQ at brake release									

Weight 5,512 lbs (2,500 kg) – INERT SEP

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.2 - Takeoff Distances (ft) – 5,512 lbs (2,500 kg) – **INERT SEP**

At 50 ft = 91 KIAS – 105 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	705	1,150	100%	755	1,225	100%	800	1,300
2,000	100%	750	1,225	100%	825	1,345	100%	890	1,435
4,000	100%	825	1,340	100%	920	1,480	100%	985	1,575
6,000	100%	915	1,475	100%	1,020	1,630	100%	1,110	1,740
8,000	100%	1,015	1,625	100%	1,155	1,800	100%	1,245	1,920
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	850	1,380	100%	905	1,460	100%	960	1,545
2,000	100%	945	1,520	100%	1,005	1,610	100%	1,085	1,705
4,000	100%	1,065	1,675	100%	1,140	1,775	96%	1,230	1,900
6,000	100%	1,190	1,850	100%	1,275	1,960	91%	1,410	2,160
8,000	100%	1,335	2,040	97%	1,440	2,180	86%	1,640	2,460
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - **INERT SEP ON** CAS message ON, - Rotation speed: V_R = 77 KIAS, - 15° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	89%	1,080	1,710	68%	1,415	2,160			
2,000	84%	1,235	1,935	67%	1,595	2,400			
4,000	80%	1,430	2,205	65%	1,780	2,670			
6,000	75%	1,675	2,530	63%	2,025	3,000			
8,000	71%	1,960	2,940	61%	2,290	3,385			
* TRQ at brake release									

Weight 6,579 lbs (2,984 kg)

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.3 - Takeoff Distances (ft) – 6,579 lbs (2,984 kg)

At 50 ft = 94 KIAS – 108 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,035	1,500	100%	1,110	1,605	100%	1,180	1,710
2,000	100%	1,110	1,605	100%	1,225	1,770	100%	1,320	1,895
4,000	100%	1,220	1,765	100%	1,365	1,955	100%	1,475	2,090
6,000	100%	1,360	1,950	100%	1,535	2,165	100%	1,650	2,310
8,000	100%	1,525	2,155	100%	1,715	2,390	100%	1,840	2,550
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,260	1,820	100%	1,345	1,930	100%	1,440	2,045
2,000	100%	1,415	2,010	100%	1,510	2,135	100%	1,610	2,260
4,000	100%	1,580	2,225	100%	1,685	2,360	100%	1,800	2,500
6,000	100%	1,765	2,460	100%	1,885	2,610	100%	2,025	2,760
8,000	100%	1,990	2,715	100%	2,125	2,880	100%	2,265	3,045
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - INERT SEP ON CAS message OFF, - Rotation speed: V_R = 85 KIAS, - 15° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	100%	1,530	2,160	100%	1,595	2,240			
2,000	100%	1,710	2,390	100%	1,785	2,480			
4,000	100%	1,930	2,645	100%	2,010	2,745			
6,000	100%	2,155	2,920	100%	2,250	3,030			
8,000	100%	2,410	3,220	100%	2,515	3,340			
* TRQ at brake release									

Weight 6,579 lbs (2,984 kg) – INERT SEP

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.4 - Takeoff Distances (ft) – 6,579 lbs (2,984 kg) – **INERT SEP**

At 50 ft = 94 KIAS – 108 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,035	1,500	100%	1,110	1,605	100%	1,180	1,710
2,000	100%	1,110	1,605	100%	1,225	1,770	100%	1,320	1,895
4,000	100%	1,220	1,765	100%	1,365	1,955	100%	1,475	2,090
6,000	100%	1,360	1,950	100%	1,535	2,165	100%	1,650	2,310
8,000	100%	1,525	2,155	100%	1,715	2,390	100%	1,840	2,550
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,260	1,820	100%	1,345	1,930	100%	1,440	2,045
2,000	100%	1,415	2,010	100%	1,510	2,135	100%	1,610	2,260
4,000	100%	1,580	2,225	100%	1,685	2,360	96%	1,820	2,535
6,000	100%	1,765	2,460	100%	1,885	2,610	91%	2,110	2,890
8,000	100%	1,990	2,715	97%	2,145	2,905	86%	2,445	3,305
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - **INERT SEP ON** CAS message ON, - Rotation speed: V_R = 85 KIAS, - 15° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	89%	1,605	2,275	68%	2,105	2,905			
2,000	84%	1,850	2,590	67%	2,370	3,250			
4,000	80%	2,145	2,970	65%	2,675	3,640			
6,000	75%	2,505	3,435	63%	3,045	4,115			
8,000	71%	2,965	4,020	61%	3,490	4,685			
* TRQ at brake release									

Weight 7,394 lbs (3,354 kg)

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.5 - Takeoff Distances (ft) – 7,394 lbs (3,354 kg)

At 50 ft = 99 KIAS – 114 MPH IAS

Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,395	1,990	100%	1,500	2,135	100%	1,610	2,290
2,000	100%	1,495	2,130	100%	1,670	2,375	100%	1,800	2,545
4,000	100%	1,665	2,365	100%	1,865	2,625	100%	2,020	2,805
6,000	100%	1,855	2,615	100%	2,100	2,905	100%	2,255	3,105
8,000	100%	2,090	2,890	100%	2,345	3,210	100%	2,520	3,430
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,720	2,440	100%	1,835	2,590	100%	1,955	2,745
2,000	100%	1,920	2,700	100%	2,065	2,870	100%	2,205	3,040
4,000	100%	2,165	2,990	100%	2,310	3,175	100%	2,465	3,360
6,000	100%	2,415	3,305	100%	2,580	3,505	100%	2,750	3,710
8,000	100%	2,700	3,645	100%	2,880	3,865	100%	3,095	4,090
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - INERT SEP ON CAS message OFF, - Rotation speed: V_R = 90 KIAS, - 12.5° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	100%	2,095	2,905	100%	2,185	3,015			
2,000	100%	2,345	3,215	100%	2,440	3,335			
4,000	100%	2,620	3,550	100%	2,730	3,690			
6,000	100%	2,950	3,920	100%	3,075	4,070			
8,000	100%	3,285	4,320	100%	3,425	4,485			

* TRQ at brake release

Weight 7,394 lbs (3,354 kg) – INERT SEP

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.6 - Takeoff Distances (ft) – 7,394 lbs (3,354 kg) – **INERT SEP**

At 50 ft = 99 KIAS – 114 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,395	1,990	100%	1,500	2,135	100%	1,610	2,290
2,000	100%	1,495	2,130	100%	1,670	2,375	100%	1,800	2,545
4,000	100%	1,665	2,365	100%	1,865	2,625	100%	2,020	2,805
6,000	100%	1,855	2,615	100%	2,100	2,905	100%	2,255	3,105
8,000	100%	2,090	2,890	100%	2,345	3,210	100%	2,520	3,430
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,720	2,440	100%	1,835	2,590	100%	1,955	2,745
2,000	100%	1,920	2,700	100%	2,065	2,870	100%	2,205	3,040
4,000	100%	2,165	2,990	100%	2,310	3,175	96%	2,495	3,410
6,000	100%	2,415	3,305	100%	2,580	3,505	91%	2,900	3,915
8,000	100%	2,700	3,645	97%	2,935	3,905	86%	3,375	4,505
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - **INERT SEP ON** CAS message ON, - Rotation speed: V_R = 90 KIAS, - 12.5° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	89%	2,205	3,085	68%	2,935	3,995			
2,000	84%	2,560	3,540	67%	3,330	4,505			
4,000	80%	2,985	4,090	65%	3,790	5,100			
6,000	75%	3,540	4,770	63%	4,360	5,835			
8,000	71%	4,230	5,645	61%	5,050	6,730			
* TRQ at brake release									

Weight 7,615 lbs (3,454 kg)

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.7 - Takeoff Distances (ft) – 7,615 lbs (3,454 kg)

At 50 ft = 99 KIAS – 114 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,450	2,065	100%	1,575	2,215	100%	1,675	2,380
2,000	100%	1,570	2,210	100%	1,740	2,465	100%	1,890	2,645
4,000	100%	1,735	2,455	100%	1,955	2,730	100%	2,105	2,915
6,000	100%	1,950	2,720	100%	2,185	3,020	100%	2,370	3,230
8,000	100%	2,175	3,010	100%	2,465	3,340	100%	2,650	3,570
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,805	2,535	100%	1,925	2,695	100%	2,055	2,855
2,000	100%	2,015	2,805	100%	2,155	2,985	100%	2,295	3,160
4,000	100%	2,255	3,110	100%	2,425	3,300	100%	2,590	3,495
6,000	100%	2,540	3,435	100%	2,715	3,645	100%	2,890	3,860
8,000	100%	2,835	3,795	100%	3,030	4,025	100%	3,225	4,260
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Associated conditions: - INERT SEP ON CAS message OFF, - Rotation speed: V_R = 90 KIAS, - 12.5° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	100%	2,180	3,020	100%	2,275	3,135			
2,000	100%	2,460	3,345	100%	2,565	3,470			
4,000	100%	2,750	3,695	100%	2,870	3,840			
6,000	100%	3,075	4,080	100%	3,205	4,235			
8,000	100%	3,455	4,500	100%	3,595	4,670			
* TRQ at brake release									

Weight 7,615 lbs (3,454 kg) – INERT SEP

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Table 5.9.8 - Takeoff Distances (ft) – 7,615 lbs (3,454 kg) – **INERT SEP**

At 50 ft = 99 KIAS – 114 MPH IAS									
Pressure altitude (ft)	ISA - 35 °C			ISA - 20 °C			ISA - 10 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,450	2,065	100%	1,575	2,215	100%	1,675	2,380
2,000	100%	1,570	2,210	100%	1,740	2,465	100%	1,890	2,645
4,000	100%	1,735	2,455	100%	1,955	2,730	100%	2,105	2,915
6,000	100%	1,950	2,720	100%	2,185	3,020	100%	2,370	3,230
8,000	100%	2,175	3,010	100%	2,465	3,340	100%	2,650	3,570
Pressure altitude (ft)	ISA			ISA + 10 °C			ISA + 20 °C		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}
0	100%	1,805	2,535	100%	1,925	2,695	100%	2,055	2,855
2,000	100%	2,015	2,805	100%	2,155	2,985	100%	2,295	3,160
4,000	100%	2,255	3,110	100%	2,425	3,300	96%	2,620	3,545
6,000	100%	2,540	3,435	100%	2,715	3,645	91%	3,050	4,080
8,000	100%	2,835	3,795	97%	3,060	4,065	86%	3,550	4,700
Pressure altitude (ft)	ISA + 30 °C			ISA + 37 °C			Assciated conditions: - **INERT SEP ON** CAS message ON, - Rotation speed: V_R = 90 KIAS, - 12.5° attitude after rotation.		
	TRQ *	GR	D_{50}	TRQ *	GR	D_{50}			
0	89%	2,320	3,210	68%	3,085	4,170			
2,000	84%	2,690	3,685	67%	3,500	4,705			
4,000	80%	3,140	4,265	65%	3,990	5,335			
6,000	75%	3,730	4,985	63%	4,595	6,115			
8,000	71%	4,455	5,905	61%	5,375	7,070			
* TRQ at brake release									

5.10 - Climb Performance

This subsection provides performance data for the climb phase, as well as vertical speeds for climb after a go-around and climb with the flaps in the TO position.

MXCL – Vertical Speeds (IAS = 124 KIAS)

NOTE Conditions:

- Maximum climb power TRQ = 100%,
- Landing gear and flaps UP,
- IAS = 124 KIAS,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.1 - MXCL – Vertical Speeds (IAS = 124 KIAS)

Airplane weight	Pressure altitude (ft)	Rate of climb (ft/min)					
		ISA - 20 °C	ISA - 10 °C	ISA	ISA + 10 °C	ISA + 20 °C	ISA + 30 °C
5,794 lbs (2,628 kg)	SL	2,885	2,870	2,855	2,845	2,830	2,810
	2,000	2,860	2,845	2,830	2,810	2,795	2,775
	4,000	2,840	2,820	2,805	2,785	2,765	2,750
	6,000	2,810	2,790	2,770	2,750	2,735	2,710
	8,000	2,775	2,755	2,735	2,710	2,690	2,665
6,594 lbs (2,991 kg)	SL	2,440	2,425	2,410	2,400	2,380	2,365
	2,000	2,415	2,400	2,385	2,365	2,350	2,330
	4,000	2,395	2,375	2,360	2,340	2,325	2,305
	6,000	2,365	2,345	2,330	2,310	2,290	2,270
	8,000	2,335	2,315	2,290	2,270	2,250	2,230
7,394 lbs (3,354 kg)	SL	2,080	2,065	2,050	2,040	2,020	2,005
	2,000	2,055	2,040	2,025	2,005	1,990	1,975
	4,000	2,035	2,015	1,995	1,980	1,965	1,945
	6,000	2,005	1,985	1,970	1,950	1,930	1,910
	8,000	1,975	1,955	1,935	1,910	1,890	1,870
7,615 lbs (3,454 kg)	SL	2,000	1,985	1,970	1,955	1,940	1,925
	2,000	1,980	1,965	1,950	1,935	1,920	1,900
	4,000	1,960	1,945	1,925	1,910	1,890	1,870
	6,000	1,940	1,920	1,900	1,880	1,860	1,840
	8,000	1,915	1,895	1,870	1,850	1,830	1,810

MXCL – Vertical Speeds (IAS = 170 KIAS / M 0.40)

NOTE Conditions:
- Maximum climb power TRQ = 100%,
- Landing gear and flaps UP,
- IAS = 170 KIAS / M 0.40,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.2 - MXCL – Vertical Speeds (IAS = 170 KIAS / M 0.40)

Airplane weight	Pressure altitude (ft)	Rate of climb (ft/min)					
		ISA - 20 °C	ISA - 10 °C	ISA	ISA + 10 °C	ISA + 20 °C	ISA + 30 °C
5,794 lbs (2,628 kg)	SL	2,420	2,390	2,365	2,335	2,310	2,285
	2,000	2,385	2,355	2,325	2,295	2,265	2,235
	4,000	2,345	2,315	2,280	2,250	2,220	2,190
	6,000	2,305	2,270	2,235	2,205	2,170	2,140
	8,000	2,260	2,225	2,190	2,155	2,120	2,085
6,594 lbs (2,991 kg)	SL	2,075	2,050	2,025	2,000	1,975	1,955
	2,000	2,045	2,015	1,990	1,965	1,935	1,910
	4,000	2,010	1,985	1,950	1,920	1,895	1,865
	6,000	1,975	1,940	1,910	1,880	1,850	1,820
	8,000	1,930	1,900	1,870	1,835	1,805	1,770
7,394 lbs (3,354 kg)	SL	1,800	1,775	1,755	1,730	1,710	1,685
	2,000	1,770	1,745	1,720	1,695	1,670	1,645
	4,000	1,735	1,710	1,685	1,655	1,630	1,605
	6,000	1,705	1,670	1,645	1,615	1,590	1,560
	8,000	1,660	1,635	1,605	1,575	1,545	1,515
7,615 lbs (3,454 kg)	SL	1,755	1,730	1,705	1,680	1,660	1,635
	2,000	1,720	1,695	1,670	1,645	1,620	1,595
	4,000	1,690	1,660	1,635	1,605	1,580	1,555
	6,000	1,655	1,625	1,595	1,565	1,540	1,510
	8,000	1,615	1,585	1,555	1,525	1,495	1,465

MXCL – Time, Consumption and Climb Distance

The following table provides references to climb performance tables that should be used depending on climb airspeed.

Table 5.10.3 - References to MXCL Performance Tables

Airspeed	ISA - 20 °C	ISA	ISA + 20 °C
124 KIAS	Table 5.10.4	Table 5.10.5	Table 5.10.6
170 KIAS / M 0.40	Table 5.10.7	Table 5.10.8	Table 5.10.9

MXCL – Time, Consumption and Climb Distance – IAS = 124 KIAS – ISA - 20 °C

NOTE Conditions:
- **ISA - 20 °C**,
- Maximum climb power,
- Landing gear and flaps UP,
- IAS = 124 KIAS,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.4 - MXCL – Time, Consumption and Climb Distance – IAS = 124 KIAS – ISA - 20 °C

Pressure altitude (ft)	Weight 5,794 lbs (2,628 kg)			Weight 6,579 lbs (2,984 kg)			Weight 7,394 lbs (3,354 kg)			Weight 7,615 lbs (3,454 kg)		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
SL	00:00	0	0	00:00	0	0	00:00	0	0	00:00	0	0
2,000	00:45	1.0	1	00:45	1.2	2	01:00	1.4	2	01:00	1.4	2
4,000	01:30	2.0	3	01:45	2.4	3	02:00	2.8	4	02:00	2.8	4
6,000	02:15	3.0	4	02:30	3.5	5	03:00	4.1	6	03:00	4.2	6
8,000	03:00	3.9	6	03:30	4.6	7	04:00	5.5	8	04:00	5.5	9
10,000	03:30	4.9	8	04:15	5.7	9	05:00	6.8	11	05:15	6.8	11
12,000	04:15	5.8	9	05:15	6.8	11	06:00	8.0	13	06:15	8.1	13
14,000	05:00	6.7	11	06:00	7.9	13	07:15	9.3	16	07:15	9.4	16
16,000	05:45	7.6	13	07:00	9.0	15	08:15	10.6	18	08:30	10.7	19
18,000	06:30	8.5	15	07:45	10.0	18	09:15	11.9	21	09:30	12.0	22
20,000	07:30	9.4	17	08:45	11.1	20	10:30	13.2	24	10:45	13.2	25
22,000	08:15	10.3	19	09:45	12.2	23	11:30	14.4	27	12:00	14.5	28
24,000	09:00	11.1	21	10:45	13.2	25	12:45	15.7	30	13:00	15.8	31
26,000	09:45	12.0	24	11:45	14.3	28	13:45	17.0	34	14:15	17.2	35
28,000	10:30	13.0	26	12:45	15.4	31	15:00	18.4	38	15:30	18.5	39
30,000	11:30	13.9	29	13:45	16.6	35	16:30	19.8	42	17:00	20.0	43
31,000	12:00	14.4	31	14:30	17.2	37	17:15	20.6	44	17:45	20.8	46

MXCL – Time, Consumption and Climb Distance – IAS = 124 KIAS – ISA

NOTE

Conditions:
- **ISA**,
- Maximum climb power,
- Landing gear and flaps UP,
- IAS = 124 KIAS,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.5 - MXCL – Time, Consumption and Climb Distance – IAS = 124 KIAS – ISA

Pressure altitude (ft)	Weight 5,794 lbs (2,628 kg)			Weight 6,579 lbs (2,984 kg)			Weight 7,394 lbs (3,354 kg)			Weight 7,615 lbs (3,454 kg)		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
SL	00:00	0	0	00:00	0	0	00:00	0	0	00:00	0	0
2,000	00:45	1.0	1	00:45	1.2	2	01:00	1.5	2	01:00	1.5	2
4,000	01:30	2.1	3	01:45	2.4	4	02:00	2.9	4	02:00	2.9	4
6,000	02:15	3.1	5	02:30	3.6	5	03:00	4.3	6	03:15	4.3	7
8,000	03:00	4.1	6	03:30	4.8	7	04:00	5.7	9	04:15	5.7	9
10,000	03:45	5.0	8	04:15	5.9	10	05:15	7.0	11	05:15	7.1	12
12,000	04:30	6.0	10	05:15	7.1	12	06:15	8.4	14	06:15	8.4	14
14,000	05:15	6.9	12	06:15	8.2	14	07:15	9.7	17	07:30	9.8	17
16,000	06:00	7.9	14	07:00	9.3	16	08:15	11.0	19	08:30	11.1	20
18,000	06:45	8.8	16	08:00	10.4	19	09:30	12.4	22	09:45	12.5	23
20,000	07:30	9.7	18	09:00	11.5	21	10:45	13.7	26	11:00	13.8	26
22,000	08:15	10.6	20	10:00	12.7	24	11:45	15.1	29	12:15	15.2	30
24,000	09:15	11.6	23	11:00	13.8	27	13:00	16.5	32	13:30	16.6	34
26,000	10:00	12.5	25	12:00	14.9	30	14:15	17.9	37	14:45	18.0	38
28,000	11:00	13.5	28	13:15	16.2	34	16:00	19.4	41	16:30	19.6	43
30,000	12:15	14.6	32	14:30	17.5	39	17:45	21.1	47	18:15	21.3	49
31,000	12:45	15.1	34	15:30	18.2	41	18:45	21.9	51	19:15	22.2	52

MXCL – Time, Consumption and Climb Distance – IAS = 124 KIAS – ISA + 20 °C

NOTE

Conditions:
- **ISA + 20 °C**,
- Maximum climb power,
- Landing gear and flaps UP,
- IAS = 124 KIAS,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.6 - MXCL – Time, Consumption and Climb Distance – IAS = 124 KIAS – ISA + 20 °C

Pressure altitude (ft)	Weight 5,794 lbs (2,628 kg)			Weight 6,579 lbs (2,984 kg)			Weight 7,394 lbs (3,354 kg)			Weight 7,615 lbs (3,454 kg)		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
SL	00:00	0	0	00:00	0	0	00:00	0	0	00:00	0	0
2,000	00:45	1.1	2	00:45	1.3	2	01:00	1.5	2	01:00	1.5	2
4,000	01:30	2.1	3	01:45	2.5	4	02:00	3.0	4	02:00	3.0	5
6,000	02:15	3.2	5	02:30	3.8	6	03:00	4.5	7	03:15	4.5	7
8,000	03:00	4.2	7	03:30	5.0	8	04:15	5.9	9	04:15	5.9	10
10,000	03:45	5.2	8	04:30	6.2	10	05:15	7.3	12	05:30	7.3	12
12,000	04:30	6.2	10	05:15	7.3	12	06:15	8.7	15	06:30	8.8	15
14,000	05:15	7.2	12	06:15	8.5	15	07:30	10.1	18	07:45	10.2	18
16,000	06:00	8.1	14	07:15	9.7	17	08:30	11.5	21	08:45	11.6	21
18,000	06:45	9.1	17	08:15	10.8	20	09:45	12.9	24	10:00	13.0	25
20,000	07:45	10.1	19	09:15	12	23	11:00	14.4	27	11:15	14.5	28
22,000	08:30	11.1	22	10:15	13.2	26	12:15	15.9	31	12:45	16.0	33
24,000	09:45	12.1	25	11:30	14.5	30	14:00	17.5	36	14:15	17.6	37
26,000	10:45	13.2	28	13:00	15.9	34	15:45	19.2	42	16:15	19.4	43
28,000	12:00	14.4	33	14:30	17.3	40	17:45	21.0	49	18:30	21.3	51
30,000	13:30	15.6	38	16:30	18.9	46	20:15	23.2	58	21:15	23.5	60
31,000	14:15	16.3	41	17:30	19.8	50	21:45	24.4	63	22:45	24.8	66

MXCL – Time, Consumption and Climb Distance – IAS = 170 KIAS / M 0.40 – ISA - 20 °C

NOTE

Conditions:
- **ISA - 20 °C**,
- Maximum climb power,
- Landing gear and flaps UP,
- IAS = 170 KIAS / M 0.40,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.7 - MXCL – Time, Consumption and Climb Distance – IAS = 170 KIAS / M 0.40 – ISA - 20 °C

Pressure altitude (ft)	Weight 5,794 lbs (2,628 kg)			Weight 6,579 lbs (2,984 kg)			Weight 7,394 lbs (3,354 kg)			Weight 7,615 lbs (3,454 kg)		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
SL	00:00	0	0	00:00	0	0	00:00	0	0	00:00	0	0
2,000	00:45	1.2	2	01:00	1.4	3	01:00	1.6	3	01:15	1.6	3
4,000	01:45	2.3	5	02:00	2.7	5	02:15	3.1	6	02:15	3.1	6
6,000	02:30	3.5	7	03:00	4.0	8	03:30	4.7	10	03:30	4.7	10
8,000	03:30	4.6	10	04:00	5.4	11	04:30	6.2	13	04:45	6.2	13
10,000	04:15	5.7	12	05:00	6.7	15	05:45	7.7	17	06:00	7.7	17
12,000	05:15	6.8	15	06:00	7.9	18	07:00	9.2	21	07:15	9.2	21
14,000	06:00	7.9	18	07:00	9.3	22	08:15	10.8	25	08:30	10.7	25
16,000	07:00	9.1	22	08:15	10.6	25	09:30	12.3	29	09:45	12.2	30
18,000	08:00	10.2	25	09:15	11.9	29	11:00	13.8	34	11:00	13.8	35
20,000	09:00	11.3	29	10:30	13.2	33	12:15	15.4	39	12:30	15.3	40
22,000	10:00	12.4	32	11:45	14.6	38	13:45	17.0	44	14:00	16.9	45
24,000	11:00	13.6	36	13:00	15.9	43	15:00	18.6	50	15:30	18.5	51
26,000	12:00	14.6	40	14:00	17.0	47	16:30	20.0	55	16:45	19.9	56
28,000	12:45	15.5	43	15:00	18.2	51	17:30	21.3	59	18:00	21.2	61
30,000	13:45	16.5	46	16:00	19.3	55	19:00	22.7	64	19:15	22.6	66
31,000	14:15	16.9	48	16:45	19.9	57	19:45	23.4	67	20:00	23.4	69

MXCL – Time, Consumption and Climb Distance – IAS = 170 KIAS / M 0.40 – ISA

NOTE

Conditions:

- **ISA**,
- Maximum climb power,
- Landing gear and flaps UP,
- IAS = 170 KIAS / M 0.40,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.8 - MXCL – Time, Consumption and Climb Distance – IAS = 170 KIAS / M 0.40 – ISA

Pressure altitude (ft)	Weight 5,794 lbs (2,628 kg)			Weight 6,579 lbs (2,984 kg)			Weight 7,394 lbs (3,354 kg)			Weight 7,615 lbs (3,454 kg)		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
SL	00:00	0	0	00:00	0	0	00:00	0	0	00:00	0	0
2,000	00:45	1.2	2	01:00	1.4	3	01:15	1.7	3	01:15	1.7	3
4,000	01:45	2.4	5	02:00	2.8	6	02:15	3.3	7	02:15	3.3	7
6,000	02:30	3.6	8	03:00	4.2	9	03:30	4.9	10	03:30	4.9	11
8,000	03:30	4.8	10	04:00	5.6	12	04:45	6.5	14	04:45	6.5	14
10,000	04:30	6.0	13	05:15	7.0	16	06:00	8.1	18	06:00	8.1	19
12,000	05:15	7.2	16	06:15	8.4	19	07:15	9.7	22	07:30	9.7	23
14,000	06:15	8.4	20	07:15	9.8	23	08:30	11.4	27	08:45	11.3	27
16,000	07:15	9.5	23	08:30	11.2	27	10:00	13.0	32	10:00	13.0	32
18,000	08:15	10.7	27	09:45	12.6	32	11:15	14.7	37	11:30	14.6	38
20,000	09:15	11.9	31	11:00	14.0	36	12:45	16.4	42	13:00	16.3	43
22,000	10:30	13.2	35	12:15	15.4	41	14:15	18.1	48	14:30	18.0	49
24,000	11:30	14.4	39	13:30	16.9	46	15:45	19.8	54	16:15	19.7	55
26,000	12:30	15.5	43	14:45	18.2	51	17:15	21.3	60	17:30	21.3	61
28,000	13:30	16.5	48	16:00	19.5	56	18:45	22.9	66	19:15	22.9	68
30,000	14:45	17.6	52	17:15	20.8	62	20:30	24.6	73	21:00	24.6	75
31,000	15:15	18.2	55	18:15	21.5	65	21:30	25.5	77	22:00	25.5	79

MXCL – Time, Consumption and Climb Distance – IAS = 170 KIAS / M 0.40 – ISA + 20 °C

NOTE

Conditions:
- **ISA + 20 °C**,
- Maximum climb power,
- Landing gear and flaps UP,
- IAS = 170 KIAS / M 0.40,
- BLEED switch on AUTO.

Table valid only if **INERT SEP ON** CAS message is OFF, and **P2.5 HI** and **P3** messages are OFF.

Table 5.10.9 - MXCL – Time, Consumption and Climb Distance – IAS = 170 KIAS / M 0.40 – ISA + 20 °C

Pressure altitude (ft)	Weight 5,794 lbs (2,628 kg)			Weight 6,579 lbs (2,984 kg)			Weight 7,394 lbs (3,354 kg)			Weight 7,615 lbs (3,454 kg)		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
SL	00:00	0	0	00:00	0	0	00:00	0	0	00:00	0	0
2,000	00:45	1.3	3	01:00	1.5	3	01:15	1.7	3	01:15	1.7	4
4,000	01:45	2.6	5	02:00	3.0	6	02:30	3.5	7	02:30	3.5	7
6,000	02:45	3.8	8	03:00	4.5	9	03:30	5.2	11	03:45	5.2	11
8,000	03:30	5.1	11	04:15	5.9	13	05:00	6.9	15	05:00	6.9	15
10,000	04:30	6.3	14	05:15	7.4	17	06:15	8.6	19	06:15	8.6	20
12,000	05:30	7.5	18	06:30	8.8	21	07:30	10.3	24	07:45	10.3	25
14,000	06:30	8.8	21	07:30	10.3	25	09:00	12.0	29	09:00	12.0	30
16,000	07:30	10.1	25	08:45	11.8	29	10:15	13.8	34	10:30	13.8	35
18,000	08:30	11.3	29	10:00	13.3	34	11:45	15.6	40	12:00	15.5	41
20,000	09:45	12.7	33	11:30	14.8	39	13:15	17.4	46	13:45	17.4	47
22,000	11:00	14.1	38	13:00	16.5	45	15:15	19.5	53	15:30	19.4	55
24,000	12:30	15.6	45	14:45	18.4	53	17:15	21.7	62	17:45	21.7	64
26,000	13:45	17.0	51	16:30	20.1	60	19:30	23.8	72	20:00	23.8	73
28,000	15:30	18.4	57	18:15	21.9	68	22:00	26.1	82	22:30	26.1	84
30,000	17:15	19.8	64	20:30	23.7	77	25:00	28.5	94	25:30	28.6	96
31,000	18:00	20.6	68	21:45	24.7	82	26:30	29.8	101	27:15	30.0	104

Climb Performance after Go-Around

NOTE Conditions:
- Landing gear DN and flaps LDG.

Table 5.10.10 - Climb Performance After Go-Around

Airplane weight / **IAS**	Pressure altitude (ft)	Rate of climb (ft/min)						
		ISA - 35 °C	ISA - 20 °C	ISA - 10 °C	ISA	ISA + 10 °C	ISA + 20 °C	ISA + 30 °C
6,594 lbs (2,991 kg) **90 KIAS**	SL	1,635	1,610	1,590	1,565	1,545	1,525	1,505
	2,000	1,615	1,580	1,555	1,535	1,510	1,490	1,470
	4,000	1,585	1,545	1,525	1,500	1,480	1,455	1,435
	6,000	1,555	1,515	1,490	1,465	1,440	1,420	1,395
	8,000	1,520	1,480	1,455	1,430	1,400	1,375	1,345
7,394 lbs (3,354 kg) **95 KIAS**	SL	1,350	1,320	1,295	1,275	1,255	1,235	1,215
	2,000	1,325	1,290	1,265	1,245	1,225	1,205	1,180
	4,000	1,295	1,255	1,235	1,210	1,190	1,165	1,140
	6,000	1,265	1,225	1,200	1,175	1,150	1,120	1,095
	8,000	1,230	1,190	1,160	1,135	1,105	1,075	1,050
7,615 lbs (3,454 kg) **95 KIAS**	SL	1,280	1,250	1,225	1,205	1,185	1,165	1,145
	2,000	1,255	1,215	1,195	1,170	1,150	1,130	1,110
	4,000	1,220	1,185	1,160	1,140	1,115	1,090	1,065
	6,000	1,190	1,150	1,130	1,100	1,075	1,045	1,020
	8,000	1,160	1,120	1,090	1,060	1,030	1,000	975

Climb Performance – Flaps TO

NOTE Conditions:
- Landing gear UP and flaps TO.

Table 5.10.11 - Climb Performance – Flaps TO

Airplane weight / **IAS**	Pressure altitude (ft)	Rate of climb (ft/min)						
		ISA - 35 °C	ISA - 20 °C	ISA - 10 °C	ISA	ISA + 10 °C	ISA + 20 °C	ISA + 30 °C
6,594 lbs (2,991 kg) **110 KIAS**	SL	2,295	2,275	2,260	2,250	2,240	2,225	2,215
	2,000	2,280	2,260	2,245	2,230	2,220	2,210	2,190
	4,000	2,265	2,245	2,230	2,215	2,200	2,180	2,165
	6,000	2,250	2,225	2,210	2,190	2,175	2,155	2,135
	8,000	2,235	2,205	2,185	2,165	2,145	2,130	2,110
7,394 lbs (3,354 kg) **115 KIAS**	SL	1,985	1,965	1,955	1,940	1,930	1,915	1,900
	2,000	1,970	1,950	1,940	1,925	1,910	1,890	1,875
	4,000	1,955	1,935	1,920	1,900	1,885	1,865	1,850
	6,000	1,940	1,910	1,895	1,875	1,860	1,840	1,825
	8,000	1,915	1,890	1,870	1,850	1,835	1,815	1,795
7,615 lbs (3,454 kg) **115 KIAS**	SL	1,910	1,890	1,875	1,865	1,855	1,840	1,825
	2,000	1,895	1,875	1,860	1,845	1,830	1,815	1,795
	4,000	1,880	1,860	1,840	1,825	1,805	1,790	1,775
	6,000	1,865	1,835	1,815	1,800	1,780	1,765	1,745
	8,000	1,840	1,810	1,795	1,775	1,755	1,735	1,715

5.11 - Cruise Performance

Maximum Cruise

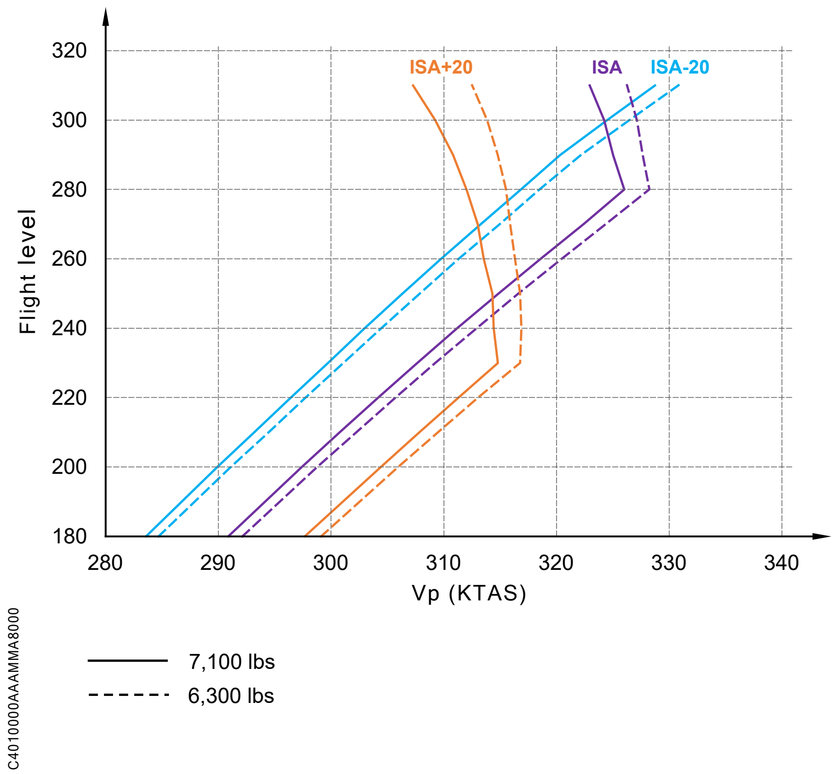
The following table provides references to performance tables that should be used depending on INERT SEP ON/OFF status and bleed status.

NOTE In the table below:
- Bleed status "P2.5" = **P2.5 HI** and **P3** messages are OFF,
- Bleed status "P2.5 HI or P3" = **P2.5 HI** or **P3** message is ON.

Table 5.11.1 - References to MXCR Performance Tables

INERT SEP	Bleed status	ISA - 20 °C	ISA - 10 °C	ISA - 5 °C	ISA
OFF	P2.5	Table 5.11.2	Table 5.11.3	Table 5.11.4	Table 5.11.5
	P2.5 HI or P3	Table 5.11.9	Table 5.11.10	Table 5.11.11	Table 5.11.12
ON	P2.5	Table 5.11.16	Table 5.11.17	Table 5.11.18	Table 5.11.19
	P2.5 HI or P3	Table 5.11.23	Table 5.11.24	Table 5.11.25	Table 5.11.26
INERT SEP	Bleed status	ISA + 5 °C	ISA + 10 °C	ISA + 20 °C	
OFF	P2.5	Table 5.11.6	Table 5.11.7	Table 5.11.8	
	P2.5 HI or P3	Table 5.11.13	Table 5.11.14	Table 5.11.15	
ON	P2.5	Table 5.11.20	Table 5.11.21	Table 5.11.22	
	P2.5 HI or P3	Table 5.11.27	Table 5.11.28	Table 5.11.29	

Figure 5.11.1 - Cruise Performance (Maximum Cruise)



NOTE

The curves above are plotted for the condition INERT SEP OFF, and **P2.5 HI** and **P3** messages OFF.

MXCR – ISA - 20 °C

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.2 - MXCR Performance – ISA - 20 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	86.5	240	236	239	236	239	235	239	235
5,000	-14	100	79.8	235	248	235	248	234	247	234	247
10,000	-24	100	74.0	230	262	230	261	229	260	229	260
15,000	-34	100	71.0	226	276	225	275	224	275	224	274
18,000	-40	100	68.8	223	285	222	285	221	284	221	283
20,000	-44	100	67.5	221	292	220	291	219	290	219	290
21,000	-46	100	67.0	220	295	219	294	218	293	218	293
22,000	-48	100	66.5	219	299	218	298	217	296	217	296
23,000	-50	100	66.1	218	302	217	301	216	300	216	299
24,000	-52	100	65.8	217	306	216	304	215	303	215	303
25,000	-54	100	65.5	216	309	215	308	214	306	214	306
26,000	-56	100	65.3	215	313	214	311	213	310	212	309
27,000	-57	100	65.1	214	316	213	315	212	313	211	313
28,000	-59	100	65.1	213	320	212	318	211	317	210	316
29,000	-61	100	65.1	212	324	211	322	209	320	209	320
30,000	-63	100	65.3	211	328	210	326	209	324	208	324
31,000	-65	96	65.1	210	332	209	331	208	329	207	328

MXCR – ISA - 10 °C

NOTE Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message OFF,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.3 - MXCR Performance – ISA - 10 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	87.5	238	239	238	239	237	238	237	238
5,000	-4	100	80.6	234	252	233	251	233	250	233	250
10,000	-14	100	74.8	229	265	228	265	228	264	227	264
15,000	-24	100	71.7	224	280	223	279	222	278	222	278
18,000	-30	100	69.5	221	289	220	288	219	287	219	287
20,000	-34	100	68.2	219	296	218	295	217	294	217	293
21,000	-36	100	67.7	218	299	217	298	216	297	216	297
22,000	-38	100	67.2	217	303	216	302	215	300	215	300
23,000	-40	100	66.7	216	306	215	305	214	304	214	303
24,000	-42	100	66.4	215	310	214	309	213	307	213	307
25,000	-44	100	66.1	214	314	213	312	212	311	212	310
26,000	-46	100	65.9	213	317	212	316	211	314	211	314
27,000	-47	100	65.8	212	321	211	320	210	318	209	317
28,000	-49	100	65.7	211	325	210	323	209	322	208	321
29,000	-51	99	64.8	210	329	209	328	208	326	207	325
30,000	-53	95	62.3	209	333	208	332	207	329	206	328
31,000	-55	91	60.1	205	333	204	331	202	328	201	327

MXCR – ISA - 5 °C

NOTE Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.4 - MXCR Performance – ISA - 5 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	88.0	238	240	237	240	237	240	237	240
5,000	1	100	81.0	233	253	232	253	232	252	232	252
10,000	-9	100	75.2	228	267	227	266	227	265	227	265
15,000	-19	100	72.1	223	282	222	281	222	280	221	280
18,000	-25	100	69.9	220	291	219	290	218	289	218	289
20,000	-29	100	68.5	218	298	217	297	216	296	216	295
21,000	-31	100	68.0	217	301	216	300	215	299	215	298
22,000	-33	100	67.6	216	305	215	304	214	302	214	302
23,000	-35	100	67.1	215	308	214	307	213	306	213	305
24,000	-37	100	66.8	214	312	213	311	212	309	212	309
25,000	-39	100	66.5	213	316	212	315	211	313	211	312
26,000	-41	100	66.3	212	320	211	318	210	316	210	316
27,000	-42	100	66.1	211	323	210	322	209	320	208	319
28,000	-44	100	66.0	210	328	209	326	208	324	208	323
29,000	-46	97	63.9	210	332	209	330	207	328	207	327
30,000	-48	93	61.5	206	332	205	330	203	327	202	326
31,000	-50	89	59.2	202	332	200	329	199	326	198	325

MXCR – ISA

NOTE Conditions:
- **ISA**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message OFF,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.5 - MXCR Performance – ISA

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	88.5	237	242	237	242	236	241	236	241
5,000	6	100	81.4	232	255	232	254	231	253	231	253
10,000	-4	100	75.6	227	268	227	268	226	267	226	267
15,000	-14	100	72.5	222	283	222	283	221	282	221	281
18,000	-20	100	70.2	219	293	219	292	218	291	217	291
20,000	-24	100	68.9	217	300	216	299	215	297	215	297
21,000	-26	100	68.3	216	303	215	302	214	301	214	300
22,000	-28	100	67.9	215	307	214	306	213	304	213	304
23,000	-30	100	67.4	214	310	213	309	212	308	212	307
24,000	-32	100	67.1	213	314	212	313	211	311	211	311
25,000	-34	100	66.8	212	318	211	317	210	315	210	314
26,000	-36	100	66.6	211	322	210	320	209	319	209	318
27,000	-37	100	66.5	210	326	209	324	208	322	208	322
28,000	-39	98	64.9	210	330	208	328	207	326	206	325
29,000	-41	94	62.8	206	330	204	328	203	325	202	324
30,000	-43	91	60.7	202	329	200	327	199	324	198	323
31,000	-45	87	58.3	198	329	196	326	194	323	194	322

MXCR – ISA + 5 °C

NOTE Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message OFF,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.6 - MXCR Performance – ISA + 5 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	88.9	236	243	236	243	235	242	235	242
5,000	11	100	81.9	231	256	231	256	230	255	230	255
10,000	1	100	76.0	226	270	226	269	225	269	225	268
15,000	-9	100	72.9	221	285	221	284	220	283	220	283
18,000	-15	100	70.6	218	295	218	294	217	293	216	292
20,000	-19	100	69.3	216	302	216	301	215	299	214	299
21,000	-21	100	68.7	215	305	215	304	213	303	213	302
22,000	-23	100	68.2	214	309	214	308	212	306	212	305
23,000	-25	100	67.8	213	312	213	311	211	309	211	309
24,000	-27	100	67.4	212	316	212	315	210	313	210	312
25,000	-29	100	67.2	211	320	210	319	209	317	209	316
26,000	-31	100	66.9	210	324	209	322	208	320	208	320
27,000	-32	97	65.1	210	328	209	326	207	324	206	323
28,000	-34	94	62.8	206	328	204	326	203	323	202	322
29,000	-36	90	60.8	202	327	200	325	199	322	198	321
30,000	-38	87	58.8	198	327	196	324	194	321	194	320
31,000	-40	84	56.5	194	326	192	323	190	320	189	318

MXCR – ISA + 10 °C

NOTE Conditions:

- **ISA + 10 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.7 - MXCR Performance – ISA + 10 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	89.4	236	245	235	244	235	244	235	244
5,000	16	100	82.3	231	258	230	257	230	256	230	256
10,000	6	100	76.4	226	272	225	271	224	270	224	270
15,000	-4	100	73.2	221	287	220	286	219	285	219	285
18,000	-10	100	71.0	218	297	217	296	216	294	216	294
20,000	-14	100	69.6	216	303	215	302	214	301	213	300
21,000	-16	100	69.1	215	307	214	306	213	304	212	304
22,000	-18	100	68.6	214	311	213	309	211	308	211	307
23,000	-20	100	68.1	212	314	212	313	210	311	210	311
24,000	-22	100	67.7	212	318	211	317	209	315	209	314
25,000	-24	100	67.4	211	322	210	320	208	319	208	318
26,000	-26	96	65.2	210	326	209	325	207	323	206	321
27,000	-27	93	63.0	206	325	204	324	203	321	202	320
28,000	-29	90	60.8	202	325	200	323	198	320	198	319
29,000	-31	87	58.8	198	325	196	322	194	319	193	318
30,000	-33	83	56.7	194	324	192	321	190	317	189	316
31,000	-35	80	54.5	190	323	188	320	186	316	185	315

MXCR – ISA + 20 °C

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message OFF,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.8 - MXCR Performance – ISA + 20 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	90.4	234	247	234	247	233	246	233	246
5,000	26	100	83.2	229	261	229	260	228	259	228	259
10,000	16	100	77.2	224	275	224	274	223	273	223	273
15,000	6	100	74.0	219	290	218	289	217	288	217	288
18,000	0	100	71.7	216	300	215	299	214	298	214	297
20,000	-4	100	70.4	214	307	213	306	212	304	212	304
21,000	-6	100	69.8	213	311	212	309	211	308	210	307
22,000	-8	100	69.3	212	314	211	313	210	311	209	311
23,000	-10	98	67.5	211	318	210	317	209	315	208	314
24,000	-12	94	65.2	208	319	206	317	205	314	204	314
25,000	-14	92	63.2	204	319	203	317	201	314	200	313
26,000	-16	89	61.1	200	318	199	316	197	314	196	313
27,000	-17	85	58.8	197	318	195	316	193	313	193	312
28,000	-19	82	56.9	193	318	192	316	189	312	189	311
29,000	-21	79	54.8	190	318	188	315	185	311	185	310
30,000	-23	76	52.8	186	317	184	314	181	309	180	308
31,000	-25	73	50.8	182	316	180	313	177	307	176	306

MXCR – ISA - 20 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.9 - MXCR Performance – ISA - 20 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	87.6	240	236	239	236	239	235	239	235
5,000	-14	100	80.8	235	248	235	248	234	247	234	247
10,000	-24	100	75.0	230	262	230	261	229	260	229	260
15,000	-34	100	72.1	226	276	225	275	224	275	224	274
18,000	-40	100	69.8	223	285	222	285	221	284	221	283
20,000	-44	100	68.5	221	292	220	291	219	290	219	290
21,000	-46	100	68.0	220	295	219	294	218	293	218	293
22,000	-48	100	67.5	219	299	218	298	217	296	217	296
23,000	-50	100	67.0	218	302	217	301	216	300	216	299
24,000	-52	100	66.7	217	306	216	304	215	303	215	303
25,000	-54	100	66.4	216	309	215	308	214	306	214	306
26,000	-56	100	66.2	215	313	214	311	213	310	212	309
27,000	-57	100	66.1	214	316	213	315	212	313	211	313
28,000	-59	100	66.0	213	320	212	318	211	317	210	316
29,000	-61	100	66.0	212	324	211	322	209	320	209	320
30,000	-63	99	65.5	211	328	210	326	209	324	208	324
31,000	-65	95	63.0	208	329	207	327	205	324	204	323

MXCR – ISA - 10 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.10 - MXCR Performance – ISA - 10 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	88.6	238	239	238	239	237	238	237	238
5,000	-4	100	81.7	234	252	233	251	233	250	233	250
10,000	-14	100	75.9	229	265	228	265	228	264	227	264
15,000	-24	100	72.8	224	280	223	279	222	278	222	278
18,000	-30	100	70.6	221	289	220	288	219	287	219	287
20,000	-34	100	69.2	219	296	218	295	217	294	217	293
21,000	-36	100	68.7	218	299	217	298	216	297	216	297
22,000	-38	100	68.2	217	303	216	302	215	300	215	300
23,000	-40	100	67.7	216	306	215	305	214	304	214	303
24,000	-42	100	67.4	215	310	214	309	213	307	213	307
25,000	-44	100	67.1	214	314	213	312	212	311	212	310
26,000	-46	100	67.0	213	317	212	316	211	314	211	314
27,000	-47	100	66.8	212	321	211	320	210	318	209	317
28,000	-49	98	65.6	211	325	210	323	209	322	208	321
29,000	-51	95	63.3	208	326	207	324	205	322	205	321
30,000	-53	91	60.8	204	325	202	323	200	320	200	319
31,000	-55	87	58.6	200	324	198	322	196	319	196	318

MXCR – ISA - 5 °C – P2.5 HI or P3

NOTE Conditions:

- **ISA - 5 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.11 - MXCR Performance – ISA - 5 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	89.2	238	240	237	240	237	240	237	240
5,000	1	100	82.1	233	253	232	253	232	252	232	252
10,000	-9	100	76.3	228	267	227	266	227	265	227	265
15,000	-19	100	73.2	223	282	222	281	222	280	221	280
18,000	-25	100	70.9	220	291	219	290	218	289	218	289
20,000	-29	100	69.6	218	298	217	297	216	296	216	295
21,000	-31	100	69.0	217	301	216	300	215	299	215	298
22,000	-33	100	68.6	216	305	215	304	214	302	214	302
23,000	-35	100	68.1	215	308	214	307	213	306	213	305
24,000	-37	100	67.7	214	312	213	311	212	309	212	309
25,000	-39	100	67.5	213	316	212	315	211	313	211	312
26,000	-41	100	67.3	212	320	211	318	210	316	210	316
27,000	-42	99	66.7	211	323	210	322	209	320	208	319
28,000	-44	95	64.2	209	325	207	323	206	321	205	320
29,000	-46	92	61.9	205	325	203	323	202	320	201	319
30,000	-48	88	59.6	201	324	199	322	197	319	197	318
31,000	-50	84	57.2	196	323	195	320	193	317	192	316

MXCR – ISA – P2.5 HI or P3

NOTE Conditions:
- **ISA**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.12 - MXCR Performance – ISA [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	89.7	237	242	237	242	236	241	236	241
5,000	6	100	82.6	232	255	232	254	231	253	231	253
10,000	-4	100	76.7	227	268	227	268	226	267	226	267
15,000	-14	100	73.6	222	283	222	283	221	282	221	281
18,000	-20	100	71.3	219	293	219	292	218	291	217	291
20,000	-24	100	70.0	217	300	216	299	215	297	215	297
21,000	-26	100	69.4	216	303	215	302	214	301	214	300
22,000	-28	100	69.0	215	307	214	306	213	304	213	304
23,000	-30	100	68.5	214	310	213	309	212	308	212	307
24,000	-32	100	68.1	213	314	212	313	211	311	211	311
25,000	-34	100	67.8	212	318	211	317	210	315	210	314
26,000	-36	100	67.5	211	322	210	320	209	319	209	318
27,000	-37	96	65.2	209	324	208	322	207	320	206	319
28,000	-39	93	62.9	205	324	204	322	202	319	202	319
29,000	-41	89	60.7	201	323	200	321	198	318	198	317
30,000	-43	86	58.5	198	323	196	320	194	317	193	316
31,000	-45	82	56.0	193	321	192	319	189	315	189	314

MXCR – ISA + 5 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message OFF,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.13 - MXCR Performance – ISA + 5 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	90.2	236	243	236	243	235	242	235	242
5,000	11	100	83.0	231	256	231	256	230	255	230	255
10,000	1	100	77.2	226	270	226	269	225	269	225	268
15,000	-9	100	74.0	221	285	221	284	220	283	220	283
18,000	-15	100	71.7	218	295	218	294	217	293	216	292
20,000	-19	100	70.4	216	302	216	301	215	299	214	299
21,000	-21	100	69.8	215	305	215	304	213	303	213	302
22,000	-23	100	69.3	214	309	214	308	212	306	212	305
23,000	-25	100	68.9	213	312	213	311	211	309	211	309
24,000	-27	100	68.5	212	316	212	315	210	313	210	312
25,000	-29	99	67.6	211	320	210	319	209	317	209	316
26,000	-31	96	65.4	209	321	208	320	206	317	206	317
27,000	-32	92	63.2	205	321	204	319	202	317	202	316
28,000	-34	89	60.9	201	321	200	319	198	316	197	315
29,000	-36	85	58.8	197	320	196	318	194	315	193	314
30,000	-38	82	56.5	193	319	192	317	189	313	189	312
31,000	-40	78	54.1	189	318	187	315	185	311	184	309

MXCR – ISA + 10 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 10 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message OFF,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.14 - MXCR Performance – ISA + 10 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt) 5,500 lbs (2,495 kg) IAS	5,500 lbs (2,495 kg) TAS	6,300 lbs (2,858 kg) IAS	6,300 lbs (2,858 kg) TAS	7,100 lbs (3,220 kg) IAS	7,100 lbs (3,220 kg) TAS	7,300 lbs (3,311 kg) IAS	7,300 lbs (3,311 kg) TAS
SL	26	100	90.7	236	245	235	244	235	244	235	244
5,000	16	100	83.5	231	258	230	257	230	256	230	256
10,000	6	100	77.6	226	272	225	271	224	270	224	270
15,000	-4	100	74.4	221	287	220	286	219	285	219	285
18,000	-10	100	72.1	218	297	217	296	216	294	216	294
20,000	-14	100	70.8	216	303	215	302	214	301	213	300
21,000	-16	100	70.2	215	307	214	306	213	304	212	304
22,000	-18	100	69.7	214	311	213	309	211	308	211	307
23,000	-20	100	69.3	212	314	212	313	210	311	210	311
24,000	-22	98	67.6	212	318	211	317	209	315	209	314
25,000	-24	95	65.4	208	318	207	317	205	315	205	314
26,000	-26	91	63.2	204	318	203	316	201	314	201	313
27,000	-27	88	61.0	201	318	199	316	197	313	197	312
28,000	-29	85	58.8	197	317	195	315	193	312	193	311
29,000	-31	81	56.7	193	317	191	314	189	311	188	309
30,000	-33	78	54.5	189	316	187	313	185	309	184	307
31,000	-35	74	52.2	185	314	183	311	180	306	179	305

MXCR – ISA + 20 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message OFF,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.15 - MXCR Performance – ISA + 20 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	90.4	234	247	234	247	233	246	233	246
5,000	26	100	83.2	229	261	229	260	228	259	228	259
10,000	16	100	77.2	224	275	224	274	223	273	223	273
15,000	6	100	74.0	219	290	218	289	217	288	217	288
18,000	0	100	71.7	216	300	215	299	214	298	214	297
20,000	-4	100	70.4	214	307	213	306	212	304	212	304
21,000	-6	100	69.8	213	311	212	309	211	308	210	307
22,000	-8	100	69.3	212	314	211	313	210	311	209	311
23,000	-10	98	67.5	211	318	210	317	209	315	208	314
24,000	-12	94	65.2	208	319	206	317	205	314	204	314
25,000	-14	92	63.2	204	319	203	317	201	314	200	313
26,000	-16	89	61.1	200	318	199	316	197	314	196	313
27,000	-17	85	58.8	197	318	195	316	193	313	193	312
28,000	-19	82	56.9	193	318	192	316	189	312	189	311
29,000	-21	79	54.8	190	318	188	315	185	311	185	310
30,000	-23	76	52.8	186	317	184	314	181	309	180	308
31,000	-25	73	50.8	182	316	180	313	177	307	176	306

MXCR – ISA - 20 °C – INERT SEP

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.16 - MXCR Performance – ISA - 20 °C [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	89.2	240	236	239	236	239	235	239	235
5,000	-14	100	83.1	235	248	235	248	234	247	234	247
10,000	-24	100	77.8	230	262	230	261	229	260	229	260
15,000	-34	100	75.6	226	276	225	275	224	275	224	274
18,000	-40	100	74.1	223	285	222	285	221	284	221	283
20,000	-44	98	72.2	221	292	220	291	219	290	219	290
21,000	-46	95	69.6	218	293	217	292	216	291	216	290
22,000	-48	91	67.0	214	292	213	291	212	290	212	289
23,000	-50	88	64.6	210	291	209	290	208	289	207	288
24,000	-52	84	62.0	206	290	205	289	203	287	203	287
25,000	-54	81	59.8	202	290	201	288	199	286	199	286
26,000	-56	78	57.5	198	289	197	287	195	285	195	285
27,000	-57	75	55.4	194	288	193	286	191	284	190	283
28,000	-59	72	53.3	190	287	189	285	187	282	186	281
29,000	-61	69	51.4	186	287	185	284	183	281	182	280
30,000	-63	66	49.4	183	285	181	283	178	279	178	278
31,000	-65	64	47.5	179	284	177	281	174	277	173	276

MXCR – ISA - 10 °C – INERT SEP

NOTE Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.17 - MXCR Performance – ISA - 10 °C [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	90.2	238	239	238	239	237	238	237	238
5,000	-4	100	84.0	234	252	233	251	233	250	233	250
10,000	-14	100	78.7	229	265	228	265	228	264	227	264
15,000	-24	100	76.3	224	280	223	279	222	278	222	278
18,000	-30	97	72.7	221	289	220	288	219	287	219	287
20,000	-34	90	68.0	213	289	212	288	211	286	211	286
21,000	-36	88	65.7	210	288	209	287	208	286	207	285
22,000	-38	84	63.3	206	288	205	287	204	285	203	284
23,000	-40	82	61.2	202	288	201	286	200	285	199	284
24,000	-42	78	58.9	198	287	197	285	196	283	195	283
25,000	-44	76	56.8	195	287	194	285	192	283	192	282
26,000	-46	73	54.6	191	286	189	284	188	281	187	280
27,000	-47	70	52.8	188	285	186	283	184	280	184	279
28,000	-49	67	50.8	184	284	182	282	180	279	179	277
29,000	-51	65	48.9	180	284	178	281	176	277	175	276
30,000	-53	62	47.0	176	282	174	279	171	275	170	273
31,000	-55	60	45.1	172	281	170	277	167	272	166	271

MXCR – ISA - 5 °C – INERT SEP

NOTE Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.18 - MXCR Performance – ISA - 5 °C [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	90.7	238	240	237	240	237	240	237	240
5,000	1	100	84.4	233	253	232	253	232	252	232	252
10,000	-9	100	79.1	228	267	227	266	227	265	227	265
15,000	-19	100	76.7	223	282	222	281	222	280	221	280
18,000	-25	93	71.1	217	287	216	286	215	285	215	285
20,000	-29	88	66.5	210	287	209	286	208	285	208	284
21,000	-31	85	64.3	206	287	205	286	204	284	204	284
22,000	-33	82	62.0	203	287	202	285	200	283	200	283
23,000	-35	79	60.0	199	286	198	285	197	283	196	282
24,000	-37	76	57.8	195	286	194	284	193	282	192	281
25,000	-39	74	55.8	192	285	191	284	189	281	188	280
26,000	-41	71	53.7	188	285	187	283	185	280	184	279
27,000	-42	68	51.9	185	284	183	282	181	279	181	278
28,000	-44	66	50.1	181	284	180	281	177	278	177	277
29,000	-46	64	48.4	178	283	176	280	173	276	172	275
30,000	-48	61	46.5	174	282	172	279	169	274	168	273
31,000	-50	58	44.5	170	280	167	276	164	271	163	269

MXCR – ISA – INERT SEP

NOTE Conditions:

- **ISA**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message ON,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.19 - MXCR Performance – ISA [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	91.2	237	242	237	242	236	241	236	241
5,000	6	100	84.9	232	255	232	254	231	253	231	253
10,000	-4	100	79.5	227	268	227	268	226	267	226	267
15,000	-14	99	76.6	222	283	222	283	221	282	221	281
18,000	-20	91	69.6	214	286	213	285	212	284	212	283
20,000	-24	85	65.1	207	286	206	285	204	283	204	283
21,000	-26	82	63.0	203	286	202	284	201	283	200	282
22,000	-28	79	60.9	200	285	198	284	197	282	197	281
23,000	-30	77	58.8	196	285	195	284	193	281	193	281
24,000	-32	74	56.9	193	285	191	283	190	281	189	280
25,000	-34	72	54.8	189	284	188	282	186	280	185	279
26,000	-36	69	52.9	186	284	184	282	182	278	181	278
27,000	-37	67	51.1	182	283	180	281	178	277	178	276
28,000	-39	64	49.3	179	283	177	280	174	276	174	275
29,000	-41	62	47.6	175	282	173	279	170	275	169	273
30,000	-43	60	45.8	171	281	169	277	166	273	165	271
31,000	-45	57	44.0	167	280	165	275	161	270	160	268

MXCR – ISA + 5 °C – INERT SEP

NOTE Conditions:

- **ISA + 5 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message ON,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.20 - MXCR Performance – ISA + 5 °C [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	91.7	236	243	236	243	235	242	235	242
5,000	11	100	85.3	231	256	231	256	230	255	230	255
10,000	1	100	79.9	226	270	226	269	225	269	225	268
15,000	-9	96	74.9	220	284	220	283	219	282	219	282
18,000	-15	87	68.0	210	284	209	283	208	282	208	281
20,000	-19	82	63.7	203	284	202	283	201	281	200	281
21,000	-21	79	61.6	200	284	199	282	197	281	197	280
22,000	-23	77	59.5	196	284	195	282	194	280	193	279
23,000	-25	74	57.4	193	283	191	281	190	279	189	278
24,000	-27	72	55.5	189	283	188	281	186	278	186	277
25,000	-29	69	53.5	186	282	184	280	182	277	182	276
26,000	-31	66	51.6	182	282	181	279	178	276	178	275
27,000	-32	64	49.8	179	281	177	278	175	275	174	274
28,000	-34	62	48.2	175	281	173	277	170	273	170	272
29,000	-36	60	46.4	172	280	169	276	166	271	165	270
30,000	-38	57	44.6	168	279	165	274	162	269	161	267
31,000	-40	55	42.8	164	277	161	272	157	266	155	264

MXCR – ISA + 10 °C – INERT SEP

NOTE Conditions:

- **ISA + 10 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.21 - MXCR Performance – ISA + 10 °C [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	92.2	236	245	235	244	235	244	235	244
5,000	16	100	85.8	231	258	230	257	230	256	230	256
10,000	6	100	80.3	226	272	225	271	224	270	224	270
15,000	-4	92	73.1	216	282	216	281	215	280	215	279
18,000	-10	84	66.4	206	282	205	281	204	279	204	279
20,000	-14	79	62.2	199	282	198	280	197	279	197	278
21,000	-16	76	60.1	196	282	195	280	194	278	193	278
22,000	-18	74	58.1	193	282	192	280	190	278	190	277
23,000	-20	71	56.1	189	281	188	279	186	277	186	276
24,000	-22	69	54.1	186	281	184	279	182	276	182	275
25,000	-24	66	52.2	182	280	181	278	179	274	178	273
26,000	-26	64	50.2	179	279	177	276	174	273	174	272
27,000	-27	62	48.5	175	279	173	275	170	271	170	270
28,000	-29	59	46.8	172	278	169	274	166	270	165	268
29,000	-31	57	45.1	168	277	165	273	162	267	161	266
30,000	-33	55	43.4	164	275	161	271	157	265	156	263
31,000	-35	53	41.6	160	274	157	268	152	261	151	259

MXCR – ISA + 20 °C – INERT SEP

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI and P3 messages OFF.

Use of Recommended Cruise power is preferred.

Table 5.11.22 - MXCR Performance – ISA + 20 °C [INERT SEP]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	93.2	234	247	234	247	233	246	233	246
5,000	26	100	86.7	229	261	229	260	228	259	228	259
10,000	16	95	78.5	223	273	222	273	222	272	221	271
15,000	6	84	69.1	208	276	207	275	206	273	205	273
18,000	0	76	62.6	198	276	197	274	195	272	195	272
20,000	-4	72	58.6	191	276	190	274	188	272	188	271
21,000	-6	69	56.6	188	276	187	274	185	271	184	270
22,000	-8	67	54.7	185	275	183	273	181	270	181	269
23,000	-10	65	52.8	181	275	180	272	177	269	177	268
24,000	-12	63	51.0	178	274	176	272	174	268	173	267
25,000	-14	60	49.1	174	274	172	270	170	266	169	265
26,000	-16	58	47.4	171	273	169	269	166	265	165	263
27,000	-17	56	45.7	167	272	165	268	161	263	160	261
28,000	-19	54	44.1	164	271	161	266	157	260	155	258
29,000	-21	52	42.5	160	270	157	265	152	257	149	253
30,000	-23	50	40.8	156	268	152	262	146	252	144	248
31,000	-25	48	39.3	152	266	148	260	140	246	135	237

MXCR – ISA - 20 °C – INERT SEP – P2.5 HI or P3

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.23 - MXCR Performance – ISA - 20 °C [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	100	90.3	240	236	239	236	239	235	239	235
5,000	-14	100	84.2	235	248	235	248	234	247	234	247
10,000	-24	100	78.9	230	262	230	261	229	260	229	260
15,000	-34	100	76.7	226	276	225	275	224	275	224	274
18,000	-40	100	75.2	223	285	222	285	221	284	221	283
20,000	-44	95	70.9	219	289	218	288	217	287	217	287
21,000	-46	91	68.5	215	289	214	288	213	286	213	286
22,000	-48	88	66.0	211	288	210	287	209	286	208	285
23,000	-50	85	63.5	207	287	206	286	205	285	204	284
24,000	-52	81	61.0	203	286	201	285	200	283	200	283
25,000	-54	78	58.8	199	286	198	284	196	282	196	282
26,000	-56	75	56.6	195	285	194	283	192	281	192	280
27,000	-57	72	54.5	191	284	190	282	188	279	187	279
28,000	-59	69	52.4	187	283	186	281	184	278	183	277
29,000	-61	66	50.4	183	282	182	279	179	276	179	275
30,000	-63	64	48.5	179	281	178	278	175	274	174	273
31,000	-65	61	46.6	176	279	173	276	170	272	170	270

MXCR – ISA - 10 °C – INERT SEP – P2.5 HI or P3

NOTE Conditions:

- **ISA - 10 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message ON,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.24 - MXCR Performance – ISA - 10 °C [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	100	91.4	238	239	238	239	237	238	237	238
5,000	-4	100	85.1	234	252	233	251	233	250	233	250
10,000	-14	100	79.8	229	265	228	265	228	264	227	264
15,000	-24	100	77.4	224	280	223	279	222	278	222	278
18,000	-30	92	71.2	217	284	216	283	215	282	215	282
20,000	-34	86	66.4	209	284	209	282	207	281	207	281
21,000	-36	83	64.1	206	283	205	282	203	280	203	280
22,000	-38	80	61.8	202	283	201	281	199	279	199	279
23,000	-40	77	59.7	198	282	197	281	196	279	195	278
24,000	-42	74	57.4	194	281	193	280	191	277	191	277
25,000	-44	72	55.3	191	281	189	279	188	276	187	275
26,000	-46	69	53.2	187	280	185	277	183	274	183	274
27,000	-47	66	51.3	183	279	182	276	179	273	179	272
28,000	-49	63	49.2	179	277	177	274	175	271	174	270
29,000	-51	61	47.5	176	277	173	273	171	269	170	268
30,000	-53	58	45.5	171	275	169	271	166	266	165	265
31,000	-55	56	43.7	167	273	165	269	161	264	160	262

MXCR – ISA - 5 °C – INERT SEP – P2.5 HI or P3

NOTE Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message ON,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.25 - MXCR Performance – ISA - 5 °C [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	100	91.9	238	240	237	240	237	240	237	240
5,000	1	100	85.6	233	253	232	253	232	252	232	252
10,000	-9	100	80.2	228	267	227	266	227	265	227	265
15,000	-19	98	76.7	223	282	222	281	222	280	221	280
18,000	-25	89	69.5	213	282	212	281	211	280	211	280
20,000	-29	83	65.0	206	282	205	281	204	279	203	279
21,000	-31	80	62.7	202	282	201	280	200	279	199	278
22,000	-33	77	60.5	198	281	197	280	196	278	196	277
23,000	-35	75	58.4	195	281	194	279	192	277	192	276
24,000	-37	72	56.2	191	280	190	278	188	275	188	275
25,000	-39	69	54.2	188	279	186	277	184	274	184	273
26,000	-41	67	52.2	184	278	182	276	180	273	180	272
27,000	-42	64	50.3	180	277	178	275	176	271	175	270
28,000	-44	61	48.5	176	276	174	273	172	269	171	268
29,000	-46	59	46.6	173	275	170	272	167	267	166	266
30,000	-48	57	44.8	169	274	166	270	163	265	162	263
31,000	-50	54	42.8	164	271	161	267	157	261	156	259

MXCR – ISA – INERT SEP – P2.5 HI or P3

NOTE

Conditions:
- **ISA**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message ON,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.26 - MXCR Performance – ISA [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	100	92.4	237	242	237	242	236	241	236	241
5,000	6	100	86.1	232	255	232	254	231	253	231	253
10,000	-4	100	80.7	227	268	227	268	226	267	226	267
15,000	-14	94	74.9	220	280	219	280	218	279	218	278
18,000	-20	86	67.9	209	280	209	279	207	278	207	278
20,000	-24	80	63.6	202	280	201	279	200	277	200	277
21,000	-26	78	61.5	199	280	198	279	197	277	196	276
22,000	-28	75	59.3	195	280	194	278	193	276	192	275
23,000	-30	72	57.2	192	279	190	277	189	275	188	274
24,000	-32	70	55.2	188	278	187	276	185	274	184	273
25,000	-34	67	53.2	185	278	183	275	181	272	180	271
26,000	-36	65	51.3	181	277	179	274	177	271	176	270
27,000	-37	62	49.4	177	276	175	273	173	269	172	268
28,000	-39	60	47.6	174	275	171	272	168	267	168	266
29,000	-41	57	45.8	170	274	167	270	164	265	163	264
30,000	-43	55	44.2	166	273	163	268	160	263	158	261
31,000	-45	52	42.2	161	270	158	265	154	258	152	256

MXCR – ISA + 5 °C – INERT SEP – P2.5 HI or P3

NOTE
Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- **INERT SEP ON** CAS message ON,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.27 - MXCR Performance – ISA + 5 °C [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	92.9	236	243	236	243	235	242	235	242
5,000	11	100	86.6	231	256	231	256	230	255	230	255
10,000	-1	100	81.1	226	270	226	269	225	269	225	268
15,000	-9	90	72.9	216	278	215	277	214	276	214	276
18,000	-15	82	66.1	205	278	204	277	203	275	203	275
20,000	-19	77	61.8	198	278	197	276	196	274	195	274
21,000	-21	74	59.8	195	277	194	276	192	274	192	273
22,000	-23	72	57.8	192	277	190	275	189	273	188	272
23,000	-25	69	55.7	188	277	187	275	185	272	184	271
24,000	-27	67	53.7	184	276	183	273	181	271	180	270
25,000	-29	64	51.8	181	275	179	273	177	269	176	268
26,000	-31	62	50.0	177	274	176	272	173	268	172	267
27,000	-32	60	48.2	174	273	171	270	169	266	168	265
28,000	-34	57	46.4	170	272	167	269	164	264	163	262
29,000	-36	55	44.7	166	271	163	267	160	261	158	259
30,000	-38	53	43.0	162	269	159	265	155	258	153	256
31,000	-40	50	41.1	157	267	154	261	149	254	148	251

MXCR – ISA + 10 °C – INERT SEP – P2.5 HI or P3

NOTE Conditions:
- **ISA + 10 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.28 - MXCR Performance – ISA + 10 °C [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	93.5	236	245	235	244	235	244	235	244
5,000	16	100	87.1	231	258	230	257	230	256	230	256
10,000	6	98	80.6	226	272	225	271	224	270	224	270
15,000	-4	86	70.8	211	275	210	274	209	272	209	272
18,000	-10	78	64.2	201	275	200	274	199	272	198	271
20,000	-14	73	60.1	194	275	193	273	192	271	191	270
21,000	-16	71	58.1	191	274	190	273	188	270	187	269
22,000	-18	68	56.1	187	274	186	272	184	269	184	268
23,000	-20	66	54.2	184	273	182	271	181	268	180	267
24,000	-22	64	52.2	180	272	179	270	176	267	176	266
25,000	-24	61	50.3	177	272	175	269	172	265	172	264
26,000	-26	59	48.5	173	271	171	268	168	263	167	262
27,000	-27	57	46.7	169	270	167	266	164	261	163	260
28,000	-29	54	45.0	165	268	163	264	159	259	158	257
29,000	-31	52	43.3	161	267	158	262	154	256	153	254
30,000	-33	50	41.6	158	265	154	260	149	252	147	248
31,000	-35	48	39.8	153	263	149	256	142	244	138	238

MXCR – ISA + 20 °C – INERT SEP – P2.5 HI or P3

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- INERT SEP ON CAS message ON,
- BLEED switch on AUTO, and P2.5 HI or P3 message ON.

Use of Recommended Cruise power is preferred.

Table 5.11.29 - MXCR Performance – ISA + 20 °C [INERT SEP – P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	100	94.5	234	247	234	247	233	246	233	246
5,000	26	98	86.9	229	261	229	260	228	259	228	259
10,000	16	87	75.6	216	265	215	264	215	263	214	263
15,000	6	77	66.4	201	267	200	266	199	264	198	264
18,000	0	69	59.9	191	266	190	265	188	262	188	262
20,000	-4	65	55.8	184	265	183	263	180	260	180	259
21,000	-6	62	53.9	181	265	179	262	176	258	175	257
22,000	-8	60	51.8	177	264	175	261	172	256	170	254
23,000	-10	57	49.8	173	263	171	259	167	253	165	251
24,000	-22	55	47.9	170	262	166	257	162	250	160	247
25,000	-14	52	46.1	166	261	162	255	156	246	154	243
26,000	-16	50	44.3	162	259	158	253	150	241	148	237
27,000	-17	48	42.5	158	257	153	249	144	236	142	232
28,000	-19	45	40.6	153	255	148	245	138	229	135	224
29,000	-21	42	38.7	149	252	142	240	130	221	126	214
30,000	-23	40	36.9	144	249	135	234				
31,000	-25	38	35.4	140	246	130	228				

Recommended Cruise

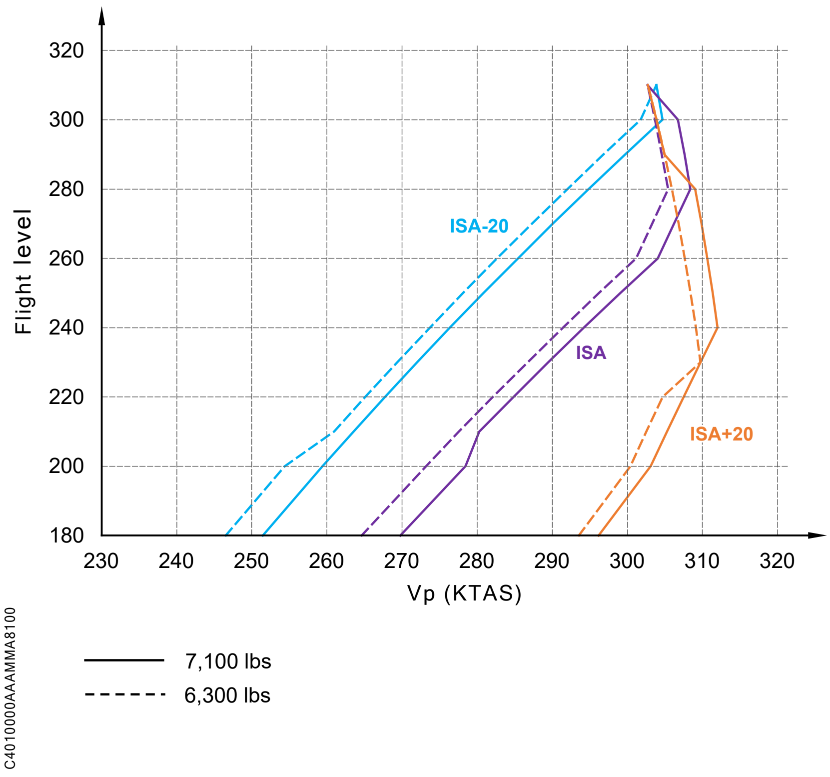
The following table provides references to performance tables that should be used depending on the bleed status.

NOTE In the table below:
- Bleed status "P2.5" = **P2.5 HI** and **P3** messages are OFF,
- Bleed status "P2.5 HI or P3" = **P2.5 HI** or **P3** message is ON.

Table 5.11.30 - References to RCR Performance Tables

Bleed status	ISA - 20 °C	ISA - 10 °C	ISA - 5 °C	ISA
P2.5	Table 5.11.31	Table 5.11.32	Table 5.11.33	Table 5.11.34
P2.5 HI or P3	Table 5.11.38	Table 5.11.39	Table 5.11.40	Table 5.11.41
Bleed status	ISA + 5 °C	ISA + 10 °C	ISA + 20 °C	
P2.5	Table 5.11.35	Table 5.11.36	Table 5.11.37	
P2.5 HI or P3	Table 5.11.42	Table 5.11.43	Table 5.11.44	

Figure 5.11.2 - Cruise Performance (Recommended Cruise)



NOTE

The curves above are plotted for the condition INERT SEP OFF, and **P2.5 HI** and **P3** messages OFF.

RCR – ISA - 20 °C

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.31 - RCR Performance – ISA - 20 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	80	76.4	215	212	221	218	223	220	227	224
5,000	-14	73	66.7	203	215	209	222	211	224	215	228
10,000	-24	67	58.2	191	218	197	225	199	227	205	234
15,000	-34	66	54.2	182	224	189	233	193	238	195	240
18,000	-40	70	53.9	186	239	191	247	195	251	195	251
20,000	-44	72	53.4	187	249	191	254	195	259	195	259
21,000	-46	73	53.2	189	256	193	261	195	264	197	266
22,000	-48	74	53.0	191	263	193	265	195	268	197	270
23,000	-50	75	52.9	193	269	193	269	195	272	197	275
24,000	-52	76	52.8	193	274	193	274	195	276	197	279
25,000	-54	77	52.8	193	278	193	278	195	281	195	281
26,000	-56	78	53.0	193	283	193	283	195	285	195	285
27,000	-57	79	53.1	193	287	193	287	195	290	195	290
28,000	-59	80	53.5	193	292	193	292	195	295	195	295
29,000	-61	81	53.8	193	297	193	297	195	300	195	300
30,000	-63	82	54.3	193	302	193	302	195	305	195	305
31,000	-65	80	52.5	191	304	191	304	191	304	191	304

RCR – ISA - 10 °C

NOTE

Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.32 - RCR Performance – ISA - 10 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	91	83.0	223	224	227	228	233	234	235	236
5,000	-4	82	71.8	211	228	215	232	219	236	221	238
10,000	-14	77	63.7	197	229	203	236	209	243	211	245
15,000	-24	71	57.2	191	240	193	243	197	248	199	250
18,000	-30	74	56.1	193	254	195	257	197	259	199	262
20,000	-34	76	55.7	193	262	195	265	197	268	199	270
21,000	-36	77	55.5	193	267	195	269	197	272	199	275
22,000	-38	78	55.5	193	271	195	274	197	276	197	276
23,000	-40	79	55.4	193	275	195	278	197	281	197	281
24,000	-42	80	55.4	193	280	195	283	197	285	197	285
25,000	-44	81	55.4	195	287	195	287	197	290	197	290
26,000	-46	82	55.7	195	292	195	292	197	295	197	295
27,000	-47	83	55.9	195	297	195	297	197	300	197	300
28,000	-49	82	55.2	195	302	195	302	195	302	197	305
29,000	-51	81	54.4	193	304	193	304	193	304	195	307
30,000	-53	78	52.6	189	303	189	303	189	303	189	303
31,000	-55	76	50.8	186	302	186	302	186	302	186	302

RCR – ISA - 5 °C

NOTE Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.33 - RCR Performance – ISA - 5 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	94	84.9	225	228	231	234	235	238	235	238
5,000	1	87	74.5	215	234	219	238	223	243	225	245
10,000	-9	80	65.4	199	234	205	241	211	248	213	250
15,000	-19	73	58.8	193	245	197	250	199	252	201	255
18,000	-25	76	57.8	193	257	195	259	199	265	201	267
20,000	-29	79	57.4	193	265	195	268	199	273	199	273
21,000	-31	80	57.3	193	269	195	272	199	277	199	277
22,000	-33	81	57.2	195	277	197	279	199	282	199	282
23,000	-35	82	57.2	195	281	197	284	199	286	199	286
24,000	-37	81	56.1	195	286	197	288	197	288	199	291
25,000	-39	82	56.3	195	290	197	293	197	293	199	296
26,000	-41	83	56.5	195	295	195	295	197	298	197	298
27,000	-42	84	56.8	195	300	195	300	197	303	197	303
28,000	-44	83	56.1	195	305	195	305	195	305	195	305
29,000	-46	80	54.2	191	304	191	304	191	304	193	307
30,000	-48	78	52.3	187	303	187	303	187	303	187	303
31,000	-50	75	50.6	184	302	184	302	184	302	184	302

RCR – ISA

NOTE Conditions:
- **ISA**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.34 - RCR Performance – ISA

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt) 5,500 lbs (2,495 kg) IAS	5,500 lbs (2,495 kg) TAS	6,300 lbs (2,858 kg) IAS	6,300 lbs (2,858 kg) TAS	7,100 lbs (3,220 kg) IAS	7,100 lbs (3,220 kg) TAS	7,300 lbs (3,311 kg) IAS	7,300 lbs (3,311 kg) TAS
SL	16	95	85.7	225	230	231	236	235	240	235	240
5,000	6	88	75.3	215	236	219	241	223	245	225	247
10,000	-4	83	67.1	199	236	207	245	213	252	215	254
15,000	-14	76	60.4	193	248	197	252	201	257	203	260
18,000	-20	79	59.5	193	259	197	265	201	270	201	270
20,000	-24	81	59.2	193	268	197	273	201	278	201	278
21,000	-26	81	58.0	195	275	197	278	199	280	201	283
22,000	-28	82	58.0	195	279	197	282	199	285	201	288
23,000	-30	83	58.0	195	284	197	287	199	289	199	289
24,000	-32	84	58.1	195	289	197	291	199	294	199	294
25,000	-34	85	58.3	195	293	197	296	199	299	199	299
26,000	-36	86	58.5	195	298	197	301	199	304	199	304
27,000	-37	85	57.8	195	303	195	303	197	306	197	306
28,000	-39	84	57.0	193	305	193	305	195	308	195	308
29,000	-41	81	55.1	189	305	189	305	191	308	191	308
30,000	-43	79	53.2	186	304	186	304	187	307	187	307
31,000	-45	74	50.3	182	303	182	303	182	303	182	303

RCR – ISA + 5 °C

NOTE Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.35 - RCR Performance – ISA + 5 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	88.9	236	243	236	243	235	242	235	242
5,000	11	93	78.2	219	243	223	247	227	251	229	254
10,000	1	90	71.0	205	245	213	255	219	261	221	264
15,000	-9	81	63.1	197	255	201	260	205	265	207	267
18,000	-15	82	61.3	197	267	201	272	203	275	205	278
20,000	-19	84	61.0	197	276	199	279	203	284	203	284
21,000	-21	86	61.0	197	280	199	283	203	288	203	288
22,000	-23	85	59.9	197	285	199	288	201	290	203	293
23,000	-25	86	59.9	197	290	199	292	201	295	203	298
24,000	-27	87	60.1	197	294	199	297	201	300	201	300
25,000	-29	88	60.4	197	299	199	302	201	305	201	305
26,000	-31	87	59.5	197	304	197	304	199	307	201	310
27,000	-32	86	58.7	195	307	195	307	197	309	197	309
28,000	-34	81	55.5	191	306	191	306	191	306	193	309
29,000	-36	79	53.6	187	305	187	305	187	305	189	308
30,000	-38	78	52.9	184	304	184	304	186	307	186	307
31,000	-40	73	50.1	180	303	180	303	180	303	180	303

RCR – ISA + 10 °C

NOTE Conditions:
- **ISA + 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.36 - RCR Performance – ISA + 10 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	89.4	236	245	235	244	235	244	235	244
5,000	16	89	76.9	215	241	219	245	223	249	225	251
10,000	6	84	68.6	203	245	209	252	213	257	217	262
15,000	-4	86	65.9	201	262	205	267	209	272	211	275
18,000	-10	87	64.2	199	272	205	280	207	283	209	285
20,000	-14	88	63.0	199	281	203	287	205	289	205	289
21,000	-16	89	63.0	199	286	203	291	205	294	205	294
22,000	-18	90	63.0	199	291	203	296	205	299	205	299
23,000	-20	91	63.2	199	295	201	298	205	304	205	304
24,000	-22	90	62.2	199	300	201	303	203	306	203	306
25,000	-24	92	62.5	199	305	201	308	203	311	203	311
26,000	-26	89	60.4	197	307	197	307	199	310	199	310
27,000	-27	85	58.3	193	307	193	307	195	310	195	310
28,000	-29	82	56.4	189	306	189	306	191	309	191	309
29,000	-31	80	54.5	186	305	186	305	187	308	187	308
30,000	-33	77	52.7	182	304	182	304	184	307	184	307
31,000	-35	72	49.9	178	303	178	303	178	303	178	303

RCR – ISA + 20 °C

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.37 - RCR Performance – ISA + 20 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	92	85.9	215	228	221	234	229	242	231	244
5,000	26	93	79.6	211	240	217	247	225	256	227	258
10,000	16	95	74.6	211	259	217	266	221	271	223	273
15,000	6	97	72.3	209	277	213	282	217	288	217	288
18,000	0	96	69.5	205	286	211	294	213	296	215	299
20,000	-4	96	68.4	205	295	209	300	211	303	211	303
21,000	-6	95	67.2	205	300	207	303	209	305	211	308
22,000	-8	94	66.1	205	305	205	305	207	308	209	310
23,000	-10	93	65.1	203	307	205	310	205	310	207	313
24,000	-12	92	64.1	199	306	201	309	203	312	203	312
25,000	-14	89	61.8	197	308	197	308	199	311	199	311
26,000	-16	86	59.7	193	308	193	308	195	311	195	311
27,000	-17	83	57.7	189	307	189	307	191	310	191	310
28,000	-19	80	55.7	186	306	186	306	187	309	187	309
29,000	-21	76	52.8	182	305	182	305	182	305	184	308
30,000	-23	73	51.0	178	304	178	304	178	304	178	304
31,000	-25	71	49.3	174	303	174	303	174	303	174	303

RCR – ISA - 20 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.38 - RCR Performance – ISA - 20 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	82	78.5	215	212	221	218	225	222	227	224
5,000	-14	75	68.7	203	215	209	222	213	226	215	228
10,000	-24	70	60.9	191	218	195	223	203	232	205	234
15,000	-34	61	52.8	180	221	184	226	187	231	189	233
18,000	-40	67	53.2	184	237	187	242	191	247	191	247
20,000	-44	69	52.6	187	249	187	249	191	254	191	254
21,000	-46	70	52.4	187	253	189	256	191	258	191	258
22,000	-48	71	52.2	187	257	189	260	191	263	191	263
23,000	-50	72	52.0	189	264	189	264	191	267	191	267
24,000	-52	73	52.0	189	268	191	271	191	271	193	274
25,000	-54	75	52.8	189	273	191	275	193	278	193	278
26,000	-56	76	52.9	191	280	191	280	193	283	193	283
27,000	-57	77	53.1	191	284	191	284	193	287	193	287
28,000	-59	78	53.3	191	289	191	289	193	292	193	292
29,000	-61	79	53.7	191	294	191	294	193	297	193	297
30,000	-63	80	54.1	191	299	191	299	193	302	193	302
31,000	-65	78	52.4	189	301	189	301	189	301	189	301

RCR – ISA - 10 °C – P2.5 HI or P3

NOTE

Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.39 - RCR Performance – ISA - 10 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	91	84.1	223	224	229	230	233	234	235	236
5,000	-4	82	72.9	211	228	215	232	219	236	221	238
10,000	-14	77	64.8	197	229	201	234	209	243	211	245
15,000	-24	69	57.4	187	235	191	240	195	245	197	248
18,000	-30	72	56.3	189	249	193	254	195	257	197	259
20,000	-34	74	55.8	191	260	193	262	195	265	197	268
21,000	-36	75	55.6	191	264	193	267	195	269	197	272
22,000	-38	76	55.5	191	268	193	271	195	274	197	276
23,000	-40	77	55.5	191	273	193	275	195	278	195	278
24,000	-42	78	55.4	191	277	193	280	195	283	197	285
25,000	-44	79	55.4	193	284	193	284	195	287	195	287
26,000	-46	80	55.6	193	289	193	289	195	292	195	292
27,000	-47	81	55.9	193	294	193	294	195	297	195	297
28,000	-49	82	56.2	193	299	193	299	195	302	195	302
29,000	-51	81	55.5	191	301	191	301	193	304	193	304
30,000	-53	75	51.4	187	300	187	300	186	297	189	303
31,000	-55	74	50.8	184	299	184	299	184	299	184	299

RCR – ISA - 5 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.40 - RCR Performance – ISA - 5 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	94	86.1	225	228	231	234	235	238	235	238
5,000	1	87	75.6	215	234	219	238	223	243	225	245
10,000	-9	80	66.5	199	234	203	238	211	248	213	250
15,000	-19	72	59.0	193	245	195	248	197	250	199	252
18,000	-25	75	57.9	191	254	193	257	197	262	199	265
20,000	-29	77	57.5	191	263	193	265	197	270	197	270
21,000	-31	78	57.3	191	267	193	269	197	275	197	275
22,000	-33	79	57.3	193	274	195	277	197	279	197	279
23,000	-35	80	57.3	193	278	193	278	197	284	197	284
24,000	-37	81	57.2	193	283	193	283	197	288	197	288
25,000	-39	82	57.3	193	288	195	290	197	293	197	293
26,000	-41	81	56.5	193	292	193	292	195	295	195	295
27,000	-42	82	56.8	193	297	193	297	195	300	195	300
28,000	-44	83	57.2	193	302	193	302	195	305	195	305
29,000	-46	80	55.3	189	301	189	301	191	304	191	304
30,000	-48	78	53.4	186	300	186	300	187	303	187	303
31,000	-50	73	50.6	182	299	182	299	182	299	182	299

RCR – ISA – P2.5 HI or P3

NOTE

Conditions:
- **ISA**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.41 - RCR Performance – ISA [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	95	87.0	225	230	231	236	235	240	235	240
5,000	6	88	76.5	215	236	219	241	223	245	225	247
10,000	-4	85	69.3	199	236	207	245	215	254	217	257
15,000	-14	72	59.7	191	245	195	250	197	252	199	255
18,000	-20	77	59.6	191	257	195	262	199	267	199	267
20,000	-24	77	58.2	191	265	195	271	197	273	199	276
21,000	-26	79	58.1	193	272	195	275	197	278	199	280
22,000	-28	80	58.1	193	277	195	279	197	282	199	285
23,000	-30	81	58.1	193	281	195	284	197	287	197	287
24,000	-32	82	58.1	193	286	195	289	197	291	197	291
25,000	-34	83	58.2	193	291	195	293	197	296	197	296
26,000	-36	82	57.4	193	295	195	298	195	298	197	301
27,000	-37	83	57.7	193	300	195	303	195	303	195	303
28,000	-39	82	56.9	191	302	191	302	193	305	193	305
29,000	-41	80	55.0	187	302	187	302	189	305	189	305
30,000	-43	77	53.2	184	301	186	304	186	304	186	304
31,000	-45	72	50.4	180	300	180	300	180	300	180	300

RCR – ISA + 5 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.42 - RCR Performance – ISA + 5 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	100	90.2	236	243	236	243	235	242	235	242
5,000	11	93	79.4	219	243	223	247	227	251	229	254
10,000	1	92	73.3	205	245	213	255	221	264	223	266
15,000	-9	77	62.3	195	252	199	257	201	260	203	262
18,000	-15	80	61.4	195	265	199	270	201	272	203	275
20,000	-19	82	61.1	195	273	195	273	201	281	201	281
21,000	-21	84	61.0	195	278	197	280	201	286	201	286
22,000	-23	83	60.0	195	282	197	285	199	288	201	290
23,000	-25	84	60.0	195	287	197	290	199	292	201	295
24,000	-27	85	60.1	195	292	197	294	199	297	199	297
25,000	-29	86	60.3	195	296	197	299	199	302	199	302
26,000	-31	85	59.5	195	301	197	304	197	304	199	307
27,000	-32	84	58.6	193	304	193	304	195	307	195	307
28,000	-34	81	56.6	189	303	189	303	191	306	191	306
29,000	-36	79	54.7	186	302	186	302	187	305	187	305
30,000	-38	76	53.0	182	301	182	301	184	304	184	304
31,000	-40	71	50.2	178	300	178	300	178	300	178	300

RCR – ISA + 10 °C – P2.5 HI or P3

NOTE

Conditions:
- **ISA + 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.43 - RCR Performance – ISA + 10 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	100	90.7	236	245	235	244	235	244	235	244
5,000	16	89	78.2	215	241	219	245	223	249	225	251
10,000	6	86	70.8	203	245	209	252	215	259	217	262
15,000	-4	84	66.1	199	260	203	265	207	270	209	272
18,000	-10	85	64.3	199	272	203	278	205	280	207	283
20,000	-14	88	64.2	199	281	201	284	205	289	205	289
21,000	-16	87	63.0	199	286	201	289	203	291	205	294
22,000	-18	88	63.1	199	291	201	293	203	296	203	296
23,000	-20	89	63.2	199	295	199	295	203	301	203	301
24,000	-22	88	62.2	197	297	199	300	201	303	203	306
25,000	-24	90	62.5	197	302	199	305	201	308	201	308
26,000	-26	86	60.4	195	305	195	305	197	307	197	307
27,000	-27	83	58.3	191	304	191	304	193	307	193	307
28,000	-29	80	56.4	187	303	187	303	189	306	189	306
29,000	-31	78	54.5	184	302	184	302	186	305	186	305
30,000	-33	75	52.7	180	301	180	301	182	304	182	304
31,000	-35	71	50.0	176	300	176	300	176	300	176	300

RCR – ISA + 20 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.
Power recommended by Daher for better fuel efficiency.

Table 5.11.44 - RCR Performance – ISA + 20 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	89	86.2	211	223	219	232	227	240	229	242
5,000	26	89	78.8	207	236	215	245	221	251	223	254
10,000	16	92	74.7	209	257	215	264	219	269	221	271
15,000	6	94	72.3	207	275	211	280	215	285	215	285
18,000	0	94	69.5	205	286	209	291	211	294	213	296
20,000	-4	94	68.4	205	295	207	298	209	300	211	303
21,000	-6	95	68.5	203	297	207	303	209	305	209	305
22,000	-8	93	66.6	203	302	205	305	206	306	205	305
23,000	-10	90	64.6	201	304	203	307	202	306	202	305
24,000	-12	87	62.3	197	303	199	306	198	305	198	305
25,000	-14	85	60.3	195	305	195	305	195	305	194	304
26,000	-16	81	58.2	191	305	191	305	191	304	190	303
27,000	-17	78	56.1	187	304	187	304	187	302	186	301
28,000	-19	75	54.1	184	303	185	305	183	301	182	300
29,000	-21	72	52.1	180	302	180	302	178	299	177	298
30,000	-23	69	50.0	176	301	176	301	174	297	173	295
31,000	-25	66	47.9	172	299	172	299	168	294	167	292

Long Range Cruise

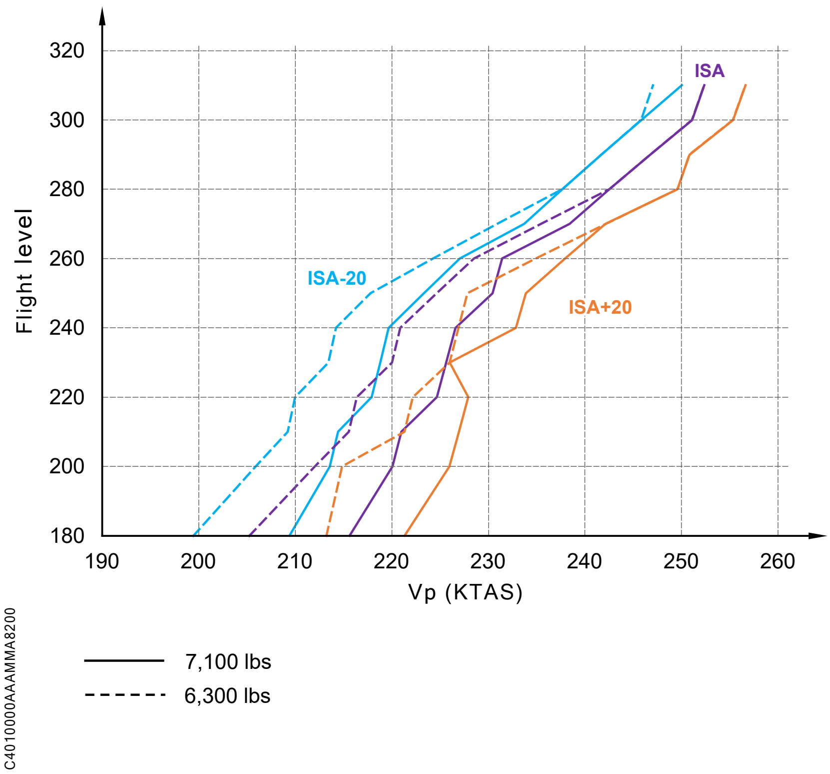
The following table provides references to performance tables that should be used depending on the bleed status.

NOTE In the table below:
- Bleed status "P2.5" = **P2.5 HI** and **P3** messages are OFF,
- Bleed status "P2.5 HI or P3" = **P2.5 HI** or **P3** message is ON.

Table 5.11.45 - References to LRCR Performance Tables

Bleed status	ISA - 20 °C	ISA - 10 °C	ISA - 5 °C	ISA
P2.5	Table 5.11.46	Table 5.11.47	Table 5.11.48	Table 5.11.49
P2.5 HI or P3	Table 5.11.53	Table 5.11.54	Table 5.11.55	Table 5.11.56
Bleed status	ISA + 5 °C	ISA + 10 °C	ISA + 20 °C	
P2.5	Table 5.11.50	Table 5.11.51	Table 5.11.52	
P2.5 HI or P3	Table 5.11.57	Table 5.11.58	Table 5.11.59	

Figure 5.11.3 - Cruise Performance (Long Range Cruise)



NOTE

The curves above are plotted for the condition INERT SEP OFF, and **P2.5 HI** and **P3** messages OFF.

LRCR – ISA - 20 °C

NOTE

Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.46 - LRCR Performance – ISA - 20 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	46	58.3	176	174	180	178	186	183	187	185
5,000	-14	41	50.4	164	174	168	178	182	193	184	195
10,000	-24	42	46.1	162	185	166	190	172	196	174	198
15,000	-34	40	41.8	154	190	158	195	166	205	168	207
18,000	-40	39	39.1	150	194	154	199	162	209	164	212
20,000	-44	40	38.1	150	201	154	206	160	214	162	216
21,000	-46	41	37.6	150	204	154	209	158	214	160	217
22,000	-48	40	36.6	148	205	152	210	158	218	160	221
23,000	-50	41	36.2	146	205	152	213	156	219	158	221
24,000	-52	40	35.4	146	209	150	214	154	220	156	222
25,000	-54	41	35.1	148	215	150	218	154	223	156	226
26,000	-56	42	35.3	152	224	152	224	154	227	156	230
27,000	-57	44	35.6	152	228	154	231	156	234	158	237
28,000	-59	46	36.0	154	235	156	238	156	238	156	238
29,000	-61	47	35.9	154	239	156	242	156	242	156	242
30,000	-63	48	35.8	154	243	156	246	156	246	156	246
31,000	-65	47	35.1	152	244	154	247	156	250	156	250

LRCR – ISA - 10 °C

NOTE Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.47 - LRCR Performance – ISA - 10 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	47	59.9	178	179	182	183	187	189	189	191
5,000	-4	43	51.8	166	180	170	184	184	198	186	201
10,000	-14	43	47.1	162	189	166	193	172	200	174	202
15,000	-24	41	42.7	154	194	158	199	166	209	168	211
18,000	-30	39	39.5	150	199	152	201	160	211	162	214
20,000	-34	41	39.0	150	205	154	210	160	218	162	221
21,000	-36	40	38.0	148	206	152	211	158	219	160	222
22,000	-38	41	37.5	146	206	152	215	156	220	156	220
23,000	-40	42	37.1	146	210	152	218	154	221	156	224
24,000	-42	41	36.3	146	213	150	219	154	225	156	227
25,000	-44	41	35.4	146	217	148	220	152	226	154	228
26,000	-46	42	35.7	150	226	150	226	152	229	152	229
27,000	-47	44	36.0	152	233	152	233	154	236	154	236
28,000	-49	46	36.4	152	237	154	240	154	240	154	240
29,000	-51	47	36.3	152	241	154	244	154	244	154	244
30,000	-53	48	36.1	152	246	154	249	154	249	154	249
31,000	-55	47	35.5	150	247	152	250	154	253	154	253

LRCR – ISA - 5 °C

NOTE

Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.48 - LRCR Performance – ISA - 5 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	48	60.4	178	180	182	184	187	190	189	192
5,000	1	44	52.9	168	183	172	188	186	202	187	205
10,000	-9	44	48.1	164	193	168	198	174	204	176	207
15,000	-19	41	43.1	154	196	158	201	166	211	168	213
18,000	-25	39	39.9	150	201	152	203	158	211	160	213
20,000	-29	40	38.9	148	205	152	210	158	218	160	220
21,000	-31	41	38.4	146	205	152	213	156	219	158	221
22,000	-33	40	37.5	146	209	150	214	156	222	158	225
23,000	-35	41	37.0	146	212	150	218	154	223	156	226
24,000	-37	41	36.2	146	216	148	219	152	224	154	227
25,000	-39	41	35.9	146	219	148	222	152	228	154	231
26,000	-41	42	35.6	148	226	148	226	150	229	152	232
27,000	-42	43	35.9	150	233	150	233	152	236	154	239
28,000	-44	45	36.3	152	240	152	240	152	240	152	240
29,000	-46	46	36.1	150	241	152	244	152	244	152	244
30,000	-48	47	36.0	150	245	152	248	152	248	152	248
31,000	-50	47	35.4	148	246	150	250	150	250	150	250

LRCR – ISA

NOTE Conditions:
- **ISA**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.49 - LRCR Performance – ISA

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	44	58.7	172	176	176	180	182	186	184	188
5,000	6	41	51.4	162	179	166	183	180	198	182	200
10,000	-4	41	46.8	158	188	162	193	168	199	170	202
15,000	-14	39	42.5	148	191	154	198	162	208	164	211
18,000	-20	40	40.4	144	195	152	205	160	216	162	218
20,000	-24	41	39.4	144	201	152	212	158	220	160	223
21,000	-26	41	38.9	146	207	152	216	156	221	158	224
22,000	-28	41	37.9	146	211	150	216	156	225	158	227
23,000	-30	41	37.5	144	212	150	220	154	226	156	228
24,000	-32	41	36.6	144	215	148	221	152	227	154	229
25,000	-34	42	36.3	146	222	148	225	152	230	154	233
26,000	-36	42	36.1	148	228	148	228	150	231	152	234
27,000	-37	44	36.4	150	235	150	235	152	238	152	238
28,000	-39	46	36.8	152	243	152	243	152	243	152	243
29,000	-41	47	36.6	150	244	152	247	152	247	152	247
30,000	-43	48	36.5	150	248	152	251	152	251	152	251
31,000	-45	47	35.9	148	249	150	252	150	252	150	252

LRCR – ISA + 5 °C

NOTE Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.50 - LRCR Performance – ISA + 5 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	47	60.6	178	184	180	186	186	192	187	194
5,000	11	43	53.1	166	184	170	189	184	204	186	206
10,000	1	44	48.4	162	194	166	199	172	206	174	208
15,000	-9	42	44.0	152	198	158	205	166	215	168	218
18,000	-15	40	40.8	148	202	152	207	158	215	160	218
20,000	-19	41	39.8	146	206	152	214	156	220	158	222
21,000	-21	41	38.8	146	209	150	215	156	223	158	226
22,000	-23	41	38.3	144	210	150	219	154	224	156	227
23,000	-25	42	37.9	144	214	150	222	152	225	154	228
24,000	-27	41	37.0	144	217	148	223	152	229	154	232
25,000	-29	41	36.2	144	221	146	224	150	230	152	233
26,000	-31	43	36.5	146	228	148	231	148	231	150	234
27,000	-32	43	36.3	148	235	148	235	150	238	152	241
28,000	-34	47	37.2	150	242	152	245	152	245	152	245
29,000	-36	46	36.5	150	246	150	246	152	249	152	249
30,000	-38	47	36.4	148	248	150	251	150	251	150	251
31,000	-40	46	35.7	148	252	148	252	148	252	148	252

LRCR – ISA + 10 °C

NOTE Conditions:
- **ISA + 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.51 - LRCR Performance – ISA + 10 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	47	61.1	178	185	180	187	186	193	187	195
5,000	16	45	54.3	168	188	172	193	180	201	187	210
10,000	6	44	48.9	162	196	166	201	174	210	176	212
15,000	-4	42	44.5	152	199	158	207	166	217	168	220
18,000	-10	40	41.3	148	204	152	209	158	217	160	220
20,000	-14	40	39.7	146	208	150	214	158	224	160	227
21,000	-16	41	39.2	146	212	150	217	156	225	158	228
22,000	-18	42	38.8	144	212	150	221	154	226	156	229
23,000	-20	41	37.8	142	213	148	222	150	225	152	227
24,000	-22	42	37.5	142	217	148	225	150	228	152	231
25,000	-24	41	36.6	144	223	146	226	150	232	152	235
26,000	-26	43	36.9	146	230	148	233	150	236	152	239
27,000	-27	44	36.7	148	237	148	237	150	240	152	243
28,000	-29	47	37.7	150	245	152	248	150	245	154	251
29,000	-31	47	37.0	148	246	150	249	150	249	152	252
30,000	-33	48	36.9	148	250	150	253	150	253	152	257
31,000	-35	47	36.2	148	255	148	255	148	255	150	258

LRCR – ISA + 20 °C

NOTE

Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** and **P3** messages OFF.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.52 - LRCR Performance – ISA + 20 °C

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	47	61.3	176	186	178	188	182	192	182	192
5,000	26	44	54.5	166	189	170	194	178	203	180	205
10,000	16	43	49.2	160	197	164	202	172	211	174	214
15,000	6	43	45.4	152	203	158	211	164	219	166	221
18,000	0	41	42.1	146	205	152	213	158	221	160	224
20,000	-4	40	40.1	144	209	148	215	156	226	158	229
21,000	-6	42	40.1	144	213	150	221	154	227	156	230
22,000	-8	41	39.1	142	214	148	222	152	228	152	228
23,000	-10	42	38.7	142	217	148	226	148	226	152	232
24,000	-12	42	37.8	142	221	146	227	150	233	150	233
25,000	-14	41	37.0	142	225	144	228	148	234	150	237
26,000	-16	43	37.3	146	235	146	235	148	238	150	241
27,000	-17	45	37.6	148	242	148	242	148	242	148	242
28,000	-19	47	38.1	148	246	150	250	150	250	150	250
29,000	-21	46	37.4	146	248	148	251	148	251	148	251
30,000	-23	47	37.3	146	252	148	255	148	255	148	255
31,000	-25	47	36.6	146	257	146	257	146	257	146	257

LRCR – ISA - 20 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.53 - LRCR Performance – ISA - 20 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	-4	46	59.3	176	174	180	178	186	183	187	185
5,000	-14	41	51.3	164	174	168	178	182	193	184	195
10,000	-24	42	47.1	162	185	166	190	172	196	174	198
15,000	-34	40	42.8	154	190	158	195	166	205	168	207
18,000	-40	39	40.1	150	194	154	199	162	209	164	212
20,000	-44	40	39.1	150	201	154	206	160	214	162	216
21,000	-46	41	38.6	150	204	154	209	158	214	160	217
22,000	-48	40	37.6	148	205	152	210	158	218	160	221
23,000	-50	41	37.1	146	205	152	213	156	219	158	221
24,000	-52	40	36.3	146	209	150	214	154	220	156	222
25,000	-54	41	36.0	148	215	150	218	154	223	156	226
26,000	-56	43	36.2	152	224	152	224	154	227	156	230
27,000	-57	45	36.5	152	228	154	231	156	234	158	237
28,000	-59	46	36.9	154	235	156	238	156	238	156	238
29,000	-61	47	36.8	154	239	156	242	156	242	156	242
30,000	-63	48	36.7	154	243	156	246	156	246	156	246
31,000	-65	47	36.0	152	244	154	247	156	250	156	250

LRCR – ISA - 10 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.54 - LRCR Performance – ISA - 10 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	6	47	60.9	178	179	182	183	187	189	189	191
5,000	-4	43	52.9	166	180	170	184	184	198	186	201
10,000	-14	43	48.1	162	189	166	193	172	200	174	202
15,000	-24	41	43.7	154	194	158	199	166	209	168	211
18,000	-30	39	40.5	150	199	152	201	160	211	162	214
20,000	-34	41	40.0	150	205	154	210	160	218	162	221
21,000	-36	41	39.0	148	206	152	211	158	219	160	222
22,000	-38	41	38.5	146	206	152	215	156	220	156	220
23,000	-40	42	38.1	146	210	152	218	154	221	156	224
24,000	-42	41	37.2	146	213	150	219	154	225	156	227
25,000	-44	41	36.4	146	217	148	220	152	226	154	228
26,000	-46	43	36.7	150	226	150	226	152	229	152	229
27,000	-47	44	37.0	152	233	152	233	154	236	154	236
28,000	-49	46	37.4	152	237	154	240	154	240	154	240
29,000	-51	47	37.2	152	241	154	244	154	244	154	244
30,000	-53	48	37.1	152	246	154	249	154	249	154	249
31,000	-55	47	36.4	150	247	152	250	154	253	154	253

LRCR – ISA - 5 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.55 - LRCR Performance – ISA - 5 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	11	48	61.5	178	180	182	184	187	190	189	192
5,000	1	44	54	168	183	172	188	186	202	187	205
10,000	-9	44	49.2	164	193	168	198	174	204	176	207
15,000	-19	41	44.2	154	196	158	201	166	211	168	213
18,000	-25	39	41.0	150	201	152	203	158	211	160	213
20,000	-29	41	40.0	148	205	152	210	158	218	160	220
21,000	-31	41	39.5	146	205	152	213	156	219	158	221
22,000	-33	41	38.5	146	209	150	214	156	222	158	225
23,000	-35	41	38.1	146	212	150	218	154	223	156	226
24,000	-37	41	37.2	146	216	148	219	152	224	154	227
25,000	-39	41	36.9	146	219	148	222	152	228	154	231
26,000	-41	42	36.6	148	226	148	226	150	229	152	232
27,000	-42	44	36.9	150	233	150	233	152	236	154	239
28,000	-44	46	37.3	152	240	152	240	152	240	152	240
29,000	-46	46	37.1	150	241	152	244	152	244	152	244
30,000	-48	47	37.1	150	245	152	248	152	248	152	248
31,000	-50	47	36.4	148	246	150	250	150	250	150	250

LRCR – ISA – P2.5 HI or P3

NOTE

Conditions:
- **ISA - 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.56 - LRCR Performance – ISA [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	16	45	59.8	172	176	176	180	182	186	184	188
5,000	6	41	52.5	162	179	166	183	180	198	182	200
10,000	-4	41	47.9	158	188	162	193	168	199	170	202
15,000	-14	39	43.6	148	191	154	198	162	208	164	211
18,000	-20	40	41.4	144	195	152	205	160	216	162	218
20,000	-24	41	40.4	144	201	152	212	158	220	160	223
21,000	-26	42	39.9	146	207	152	216	156	221	158	224
22,000	-28	41	39.0	146	211	150	216	156	225	158	227
23,000	-30	42	38.5	144	212	150	220	154	226	156	228
24,000	-32	41	37.6	144	215	148	221	152	227	154	229
25,000	-34	42	37.3	146	222	148	225	152	230	154	233
26,000	-36	42	37.1	148	228	148	228	150	231	152	234
27,000	-37	44	37.4	150	235	150	235	152	238	152	238
28,000	-39	46	37.8	152	243	152	243	152	243	152	243
29,000	-41	47	37.7	150	244	152	247	152	247	152	247
30,000	-43	48	37.6	150	248	152	251	152	251	152	251
31,000	-45	47	36.9	148	249	150	252	150	252	150	252

LRCR – ISA +5 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 5 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.57 - LRCR Performance – ISA + 5 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	21	47	61.8	178	184	180	186	186	192	187	194
5,000	11	44	54.3	166	184	170	189	184	204	186	206
10,000	1	44	49.6	162	194	166	199	172	206	174	208
15,000	-9	42	45.2	152	198	158	205	166	215	168	218
18,000	-15	40	41.9	148	202	152	207	158	215	160	218
20,000	-19	41	40.9	146	206	152	214	156	220	158	222
21,000	-21	41	39.9	146	209	150	215	156	223	158	226
22,000	-23	41	39.4	144	210	150	219	154	224	156	227
23,000	-25	42	39.0	144	214	150	222	152	225	154	228
24,000	-27	42	38.1	144	217	148	223	152	229	154	232
25,000	-29	41	37.2	144	221	146	224	150	230	152	233
26,000	-31	43	37.5	146	228	148	231	148	231	150	234
27,000	-32	44	37.3	148	235	148	235	150	238	152	241
28,000	-34	47	38.3	150	242	152	245	152	245	152	245
29,000	-36	46	37.6	150	246	150	246	152	249	152	249
30,000	-38	47	37.5	148	248	150	251	150	251	150	251
31,000	-40	47	36.8	148	252	148	252	148	252	148	252

LRCR – ISA + 10 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 10 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.58 - LRCR Performance – ISA + 10 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	26	47	62.3	178	185	180	187	186	193	187	195
5,000	16	45	55.4	168	188	172	193	180	201	187	210
10,000	6	44	50.1	162	196	166	201	174	210	176	212
15,000	-4	42	45.6	152	199	158	207	166	217	168	220
18,000	-10	41	42.4	148	204	152	209	158	217	160	220
20,000	-14	41	40.8	146	208	150	214	158	224	160	227
21,000	-16	41	40.4	146	212	150	217	156	225	158	228
22,000	-18	42	39.9	144	212	150	221	154	226	156	229
23,000	-20	41	38.9	142	213	148	222	150	225	152	227
24,000	-22	42	38.5	142	217	148	225	150	228	152	231
25,000	-24	42	37.7	144	223	146	226	150	232	152	235
26,000	-26	43	38.0	146	230	148	233	150	236	152	239
27,000	-27	44	37.8	148	237	148	237	150	240	152	243
28,000	-29	47	38.8	150	245	152	248	150	245	154	251
29,000	-31	47	38.1	148	246	150	249	150	249	152	252
30,000	-33	48	38.0	148	250	150	253	150	253	152	257
31,000	-35	47	37.3	148	255	148	255	148	255	150	258

LRCR – ISA + 20 °C – P2.5 HI or P3

NOTE Conditions:
- **ISA + 20 °C**,
- Landing gear and flaps UP,
- BLEED switch on AUTO, and **P2.5 HI** or **P3** message ON.

Table valid only if **INERT SEP ON** CAS message is OFF.

Table 5.11.59 - LRCR Performance – ISA + 20 °C [P2.5 HI or P3]

Pressure altitude (ft)	OAT (°C)	TRQ (%)	Fuel flow (USG/h)	Airspeeds (kt)							
				5,500 lbs (2,495 kg)		6,300 lbs (2,858 kg)		7,100 lbs (3,220 kg)		7,300 lbs (3,311 kg)	
				IAS	TAS	IAS	TAS	IAS	TAS	IAS	TAS
SL	36	47	62.5	176	186	178	188	182	192	182	192
5,000	26	44	55.7	166	189	170	194	178	203	180	205
10,000	16	43	50.4	160	197	164	202	172	211	174	214
15,000	6	43	46.6	152	203	158	211	164	219	166	221
18,000	0	41	43.3	146	205	152	213	158	221	160	224
20,000	-4	40	41.2	144	209	148	215	156	226	158	229
21,000	-6	42	41.3	144	213	150	221	154	227	156	230
22,000	-8	42	40.3	142	214	148	222	152	228	152	228
23,000	-10	42	39.9	142	217	148	226	148	226	152	232
24,000	-12	42	38.9	142	221	146	227	150	233	150	233
25,000	-14	41	38.1	142	225	144	228	148	234	150	237
26,000	-16	43	38.4	146	235	146	235	148	238	150	241
27,000	-17	45	38.8	148	242	148	242	148	242	148	242
28,000	-19	47	39.2	148	246	150	250	150	250	150	250
29,000	-21	47	38.5	146	248	148	251	148	251	148	251
30,000	-23	47	38.4	146	252	148	255	148	255	148	255
31,000	-25	47	37.8	146	257	146	257	146	257	146	257

5.12 - Time, Consumption and Descent Distance

Conditions:

- Power as required to maintain V_Z,
- Landing gear and flaps UP,
- CAS = 230 KCAS,
- BLEED switch on AUTO.

Table 5.12.1 - Time, Consumption and Descent Distance – CAS = 230 KCAS

Pressure altitude (ft)	V_Z = 1,500 ft/min			V_Z = 2,000 ft/min			V_Z = 2,500 ft/min		
	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)	Time (min:s)	Cons. (USG)	Dist. (NM)
31,000	20:40	18.5	101	15:30	12.4	75	12:25	9.0	60
30,000	20:00	17.9	97	15:00	12.0	72	12:00	8.8	58
28,000	18:40	16.8	89	14:00	11.3	66	11:10	8.3	53
26,000	17:20	15.7	81	13:00	10.6	61	10:25	7.8	48
24,000	16:00	14.5	73	12:00	9.8	55	09:35	7.3	44
22,000	14:40	13.4	66	11:00	9.1	50	08:50	6.8	40
20,000	13:20	12.3	59	10:00	8.4	44	08:00	6.3	35
18,000	12:00	11.1	53	09:00	7.6	39	07:10	5.8	31
16,000	10:40	10.0	46	08:00	6.8	34	06:25	5.2	27
14,000	09:20	8.8	40	07:00	6.1	30	05:35	4.6	24
12,000	08:00	7.6	33	06:00	5.3	25	04:50	4.1	20
10,000	06:40	6.4	27	05:00	4.5	21	04:00	3.4	16
8,000	05:20	5.2	22	04:00	3.7	16	03:10	2.8	13
6,000	04:00	3.9	16	03:00	2.8	12	02:25	2.2	10
4,000	02:40	2.7	10	02:00	1.9	8	01:35	1.5	6
2,000	01:20	1.4	5	01:00	1.0	4	00:50	0.8	3
SL	00:00	0.0	0	00:00	0.0	0	00:00	0.0	0

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5.13 - Holding Time

Conditions:

- Landing gear and flaps UP,
- IAS = 120 KIAS,
- BLEED switch on AUTO,
- TRQ ≈ 25%.

Table 5.13.1 - Fuel Consumption During Holding Time

Pressure altitude (ft)	Fuel Used During Holding Time			
	Weight 5,500 lbs (2,495 kg)		Weight 6,300 lbs (2,858 kg)	
	10 min	30 min	10 min	30 min
	USG	USG	USG	USG
SL	7.8	23.5	8.0	24.1
5,000	6.9	20.8	7.1	21.4
10,000	6.2	18.7	6.5	19.4
15,000	5.8	17.3	6.0	18.1
20,000	5.3	15.9	5.6	16.7

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5.14 - Landing Distances

The following tables provide the landing distances for several weight configurations.

General notes and correction factors:

The following information applies to all the tables in this subsection.

Associated conditions:

- Landing gear DN and flaps LDG,
- Maximum breaking without reverse,
- Hard, dry and level runway.

In table headings:

- GR = Ground roll (in feet),
- D_{50} = Landing distance over a 50-foot (15-meter) obstacle (in feet).

Corrections:

- In case of wind, apply the following corrections:
  . Reduce total distances by 10% every 10 kt of headwind,
  . Increase total distances by 30% every 10 kt of tail wind.
- Other runway surfaces:

  Landing distances given in the tables are for landing on hard, dry and level runway. Other runway surfaces require the following correction factors.

  Increase distances by:
  . 7% on hard grass,
  . 10% on short grass,
  . 15% on wet runway,
  . 25% on high grass,
  . 30% on slippery runway.

Weight 7,110 lbs (3,225 kg)

NOTE

Associated conditions:
- Approach speed IAS = 85 KIAS,
- Touchdown speed IAS = 78 KIAS.

Table 5.14.1 - Landing Distances (ft) – 7,110 lbs (3,225 kg)

Pressure altitude (ft)	ISA - 35 °C		ISA - 20 °C		ISA - 10 °C		ISA	
	GR	D_{50}	GR	D_{50}	GR	D_{50}	GR	D_{50}
SL	1,575	2,135	1,675	2,265	1,740	2,330	1,840	2,430
2,000	1,675	2,265	1,805	2,395	1,870	2,495	1,970	2,590
4,000	1,805	2,395	1,940	2,560	2,035	2,660	2,135	2,790
6,000	1,940	2,560	2,100	2,725	2,200	2,855	2,300	2,955
8,000	2,100	2,725	2,265	2,920	2,360	3,020	2,495	3,180
Pressure altitude (ft)	ISA + 10 °C		ISA + 20 °C		ISA + 30 °C		ISA + 37 °C	
	GR	D_{50}	GR	D_{50}	GR	D_{50}	GR	D_{50}
SL	1,905	2,530	2,000	2,625	2,070	2,690	2,135	2,790
2,000	2,070	2,690	2,135	2,790	2,230	2,890	2,300	2,955
4,000	2,230	2,890	2,330	2,985	2,430	3,085	2,495	3,185
6,000	2,395	3,050	2,530	3,215	2,625	3,315	2,690	3,380
8,000	2,590	3,280	2,725	3,410	2,855	3,570	2,920	3,640

CAUTION

Refer to General notes and correction factors at the beginning of this subsection.

Weight 6,250 lbs (2,835 kg)

NOTE Associated conditions:
- Approach speed IAS = 80 KIAS,
- Touchdown speed IAS = 65 KIAS.

Table 5.14.2 - Landing Distances (ft) – 6,250 lbs (2,835 kg)

Pressure altitude (ft)	ISA - 35 °C		ISA - 20 °C		ISA - 10 °C		ISA	
	GR	D_{50}	GR	D_{50}	GR	D_{50}	GR	D_{50}
SL	1,050	1,900	1,115	2,000	1,180	2,070	1,215	2,135
2,000	1,115	2,000	1,215	2,100	1,245	2,200	1,310	2,265
4,000	1,180	2,100	1,280	2,230	1,345	2,330	1,410	2,395
6,000	1,280	2,230	1,380	2,360	1,445	2,460	1,510	2,525
8,000	1,380	2,360	1,475	2,490	1,540	2,590	1,610	2,690
Pressure altitude (ft)	ISA + 10 °C		ISA + 20 °C		ISA + 30 °C		ISA + 37 °C	
	GR	D_{50}	GR	D_{50}	GR	D_{50}	GR	D_{50}
SL	1,280	2,200	1,310	2,300	1,380	2,360	1,445	2,430
2,000	1,345	2,330	1,410	2,430	1,475	2,495	1,540	2,560
4,000	1,445	2,460	1,510	2,560	1,575	2655	1,640	2,755
6,000	1,575	2,645	1,640	2,720	1,705	2,820	1,770	2,920
8,000	1,705	2,790	1,770	2,885	1,835	2,985	1,900	3,085

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Weight 5,071 lbs (2,300 kg)

NOTE Associated conditions:
- Approach speed IAS = 80 KIAS,
- Touchdown speed IAS = 60 KIAS.

Table 5.14.3 - Landing Distances (ft) – 5,071 lbs (2,300 kg)

Pressure altitude (ft)	ISA - 35 °C		ISA - 20 °C		ISA - 10 °C		ISA	
	GR	D_{50}	GR	D_{50}	GR	D_{50}	GR	D_{50}
SL	885	1,900	950	2,000	1,000	2,070	1,030	2,135
2,000	950	2,000	1,030	2,100	1,065	2,200	1,115	2,265
4,000	1,000	2,100	1,080	2,230	1,150	2,330	1,200	2,395
6,000	1,080	2,230	1,180	2,360	1,230	2,460	1,280	2,525
8,000	1,180	2,360	1,245	2,490	1,310	2,590	1,360	2,690
Pressure altitude (ft)	ISA + 10 °C		ISA + 20 °C		ISA + 30 °C		ISA + 37 °C	
	GR	D_{50}	GR	D_{50}	GR	D_{50}	GR	D_{50}
SL	1,080	2,200	1,115	2,300	1,180	2,360	1,230	2,430
2,000	1,150	2,330	1,200	2,430	1,245	2,495	1,310	2,560
4,000	1,230	2,460	1,280	2,560	1,345	2,655	1,395	2,755
6,000	1,345	2,645	1,395	2,720	1,445	2,820	1,510	2,920
8,000	1,445	2,790	1,510	2,885	1,560	2,985	1,610	3,085

CAUTION Refer to General notes and correction factors at the beginning of this subsection.

Section 6

Weight and Balance

Table of Contents

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6.1 - General

This section is intended to provide the pilot with the procedures to determine the airplane's weight and balance.

WARNING

It is the pilot's responsibility to ensure that the airplane is properly loaded and that the weight and balance limits are adhered to.

This airplane allows multiple cabin seat configurations between two and six seats, as required by the operator – refer to Paragraph Seats, Belts and Harnesses in Subsection 7.3. .

A list of equipment available for this airplane is referenced at the end of this section – refer to Subsection 6.5. List of Equipment.

The list of specific optional equipment installed on the airplane as delivered from the factory can be found in the records carried in the airplane.

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6.2 - Airplane Weighing Procedures

Refer to the Airplane Maintenance Manual for the procedures to apply.

NOTE

Weighing carried out at the factory takes into account all equipment installed on the airplane. The list of this equipment and the total weight is noted in the individual inspection record.

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6.3 - Baggage Loading

There are two baggage compartments:

- one in the non-pressurized forward section of the fuselage, between the firewall and the cockpit, with a maximum baggage capacity of 110 lbs (50 kg),
- one located in the rear of the pressurized cabin, with the following characteristics:

  >> *With 6-seat configuration*

  . in the baggage compartment, behind the rear seats, with a maximum loading capacity of 220 lbs (100 kg).

  . stowing straps are provided for securing parcels and baggage on compartment floor. A partition net separating the cabin from the baggage compartment is attached to Frame C14.

  >> *With other allowed seat configurations*

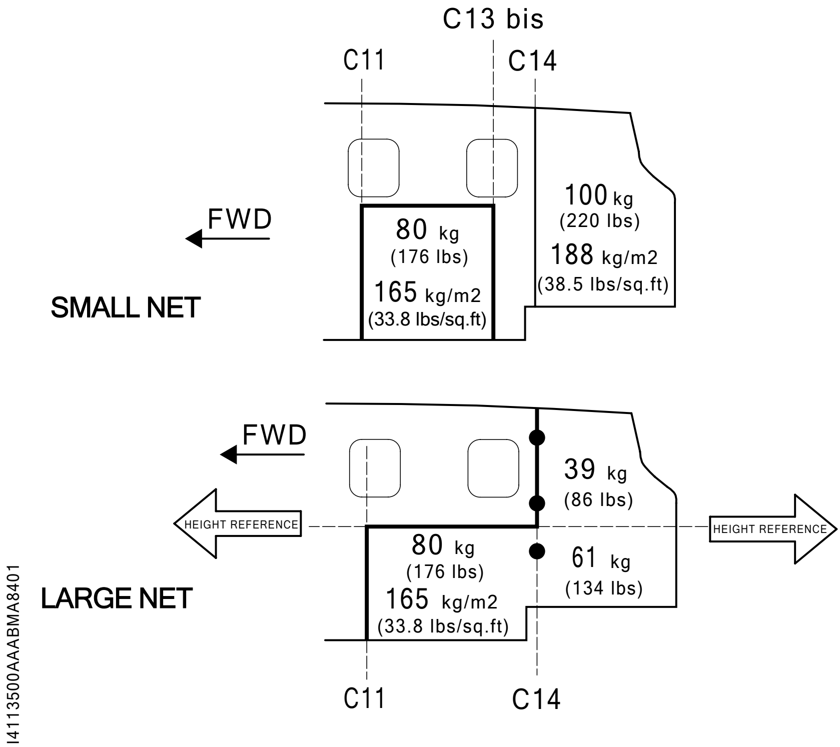
  . There are two loading areas:

    - one in place of the two removed rear seats, with a maximum loading capacity of 176 lbs (80 kg),
    - one in the baggage compartment, behind the area of the rear seats, with a maximum loading capacity of 220 lbs (100 kg).

  . Two types of baggage securing nets can be used:

    - the small cargo net, which is attached through nine anchoring points on seat rails, between Frame C11 and Frame C13bis – see Figure 7.2.3. Refer to Paragraph Baggage Limits in Subsection 2.7. for limitations.
    - the large cargo net, which is attached through seven anchoring points on seat rails, between Frame C11 and Frame C13bis and six anchoring points on fuselage sides, at Frame C14 – see Figure 7.2.2. Refer to Paragraph Baggage Limits in Subsection 2.7. for limitations.

Figure 6.3.1 - Baggage Limits



Authorized anchoring points are identified with green self-adhesive labels affixed to the inside of the rail.

A placard indicates loading limits for each securing net.

The load within the cargo zone should be evenly distributed, and ensure that overall weight is centered.

When using the large net, distribute the weight in each zone, delineated by the step up in the floor, according to the zone limits.

>> *All*

WARNING

It is the pilot's responsibility to check that all parcels and baggage are properly secured in the cabin.
Transport of dangerous products/materials is normally prohibited, however if transport of such products/materials is necessary, it must be performed in compliance with regulations concerning transport of dangerous products/materials and any other applicable regulation.

Loading of the baggage compartments must be performed in accordance with the airplane's weight and balance limits. Refer to Paragraph Baggage Limits in Subsection 2.7. for limitations.

Generally, if rear seats are not used or are removed, first load the AFT compartment, then, if required, load the FWD compartment. If the rear seats are used, first load the FWD compartment, then, if required, load the AFT compartment.

Compute and check the weight and balance diagram to ensure the airplane is within the allowable limits.

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6.4 - Determining Weight and Balance

General

This section is intended to provide the pilot with the procedures to determine the airplane's weight and balance.

WARNING

It is the pilot's responsibility to ensure that the airplane is properly loaded and that the weight and balance limits are adhered to.

The procedure requires the following data related to the basic characteristics of the empty airplane to be obtained from the most recent airplane weight and balance report:

- the empty weight, expressed in kg or lbs,
- the moment, expressed in m.kg or in.lbs,
- the C.G., expressed in MAC %.

If the airplane empty weight has varied since the most recent weight and balance report (for example, due to the installation of optional equipment), refer to Paragraph Determining Empty Airplane Characteristics to determine the new empty weight and the corresponding moment.

Utilization of Weight and Balance Graphs

This procedure determines the airplane weight and balance characteristics for flight.

Select the units for the weight and balance determination (either m and kg, or lbs and in) and use the dedicated form – see Table 6.4.1 or Table 6.4.2, as appropriate to the chosen units of measurement.

1. Record the basic empty weight (1a), moment (1b) and C.G. (MAC %) (1c) from the most recent weight and balance report – see example of weight and balance report, Figure 6.4.1 and Figure 6.4.2.
2. Record the expected loading (2a) and compute each associated moment (2b).
3. Compute the zero fuel weight (3a) and moment (3b) as the sum of all the weights listed above (1a) + (2a) and moments (1b) + (2b).
4. Check the value (3a) to ensure it is below the maximum zero fuel weight.
5. Compute the zero fuel weight arm (5) and C.G. (MAC %) (5c) using the given formulas.

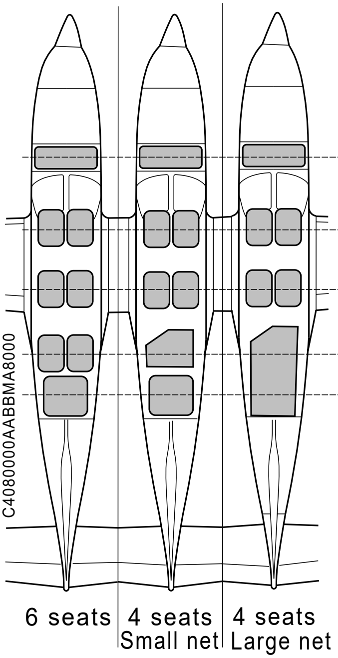
6. Record the loaded fuel (6a) and compute the associated moment (6b).
7. Compute the ramp weight (7a) and moment (7b) as the sum of zero fuel weight (3a) + loaded fuel (6a) and moments (3b) + (6b).
8. Check the value (7a) to ensure it is below the maximum ramp weight.
9. Compute the ramp weight arm (9) and C.G. (MAC %) (9c) using the given formulas.
10. Record the expected taxi fuel (negative value) (10a) and compute the associated moment (10b).
11. Compute the takeoff weight (11a) and moment (11b) as the sum of ramp weight (7a) + taxi fuel (10a) and moments (7b) + (10b).
12. Check the value (11a) to ensure it is below the maximum takeoff weight.
13. Compute the takeoff weight arm (13) and C.G. (MAC %) (13c) using the given formulas.
14. Record the expected trip fuel (negative value) (14a) and compute the associated moment (14b).
15. Compute the landing weight (15a) and moment (15b) as the sum of takeoff weight (11a) + trip fuel (14a) and moments (11b) + (14b).
16. Check the value (15a) to ensure it is below the maximum landing weight.
17. Compute the landing weight arm (17) and C.G. (MAC %) (17c) using the given formulas.
18. Plot the zero fuel weight, takeoff weight and landing weight on the weight and balance diagram.
19. Check that all points are within the weight and balance limits and check that they are vertically aligned.
20. Record these data in your navigation log.

Airplane Loading Form (m, kg)

Moment = Weight × Arm

$$\text{CG (MAC \%)} = \frac{\text{Arm (m)} - 4.392}{1.51} \times 100$$

Item		Weight (kg)	Arm (m)	Moment (m.kg)	C.G. (MAC %)
Empty weight	(kg)	(1a)		(1b)	(1c)
Baggage FWD	(< 50 kg)	(2a)	3.250	(2b)	
Front seats	(kg)	(2a)	4.534	(2b)	
Inter. seats	-15.4 kg per seat removed *	(2a)	5.710	(2b)	
	Pax	(2a)		(2b)	
Rear bench/net	-21 kg per seat removed *	(2a)	6.785	(2b)	
	Pax	(2a)		(2b)	
	Cargo (< 80 kg)	(2a)		(2b)	
Baggage AFT	(< 100 kg)	(2a)	7.695	(2b)	
Zero fuel weight	(< 2,836 kg)	(3a)	(5)	(3b)	(5c)
Fuel	(kg)	(6a)	4.820	(6b)	
Ramp weight	(< 3,470 kg)	(7a)	(9)	(7b)	(9c)
Taxi fuel	(kg)	(10a)	4.820	(10b)	
Takeoff weight	(< 3,454 kg)	(11a)	(13)	(11b)	(13c)
Trip fuel	(kg)	(14a)	4.820	(14b)	
Landing weight	(< 3,225 kg)	(15a)	(17)	(15b)	(17c)
* Seat weights include the seat heating system					



Item		Weight (kg)
Empty weight		(1a)
Baggage FWD	(< 50 kg)	(2a)
Front seats		(2a)
Inter. seats	-15.4 kg per seat removed *	(2a)
	Pax	(2a)
Rear bench/net	-21 kg per seat removed *	(2a)
	Pax	(2a)
	Cargo (< 80 kg)	(2a)
Baggage AFT	(< 100 kg)	(2a)

* Seat weights include the seat heating system

Example of Airplane Weight and Balance Report

NOTE

The airplane's original report shall be kept with the airplane's POH.

Figure 6.4.1 - Example of Weight and Balance Report and Basic Airplane Characteristics (m, kg)

REGISTRE INDIVIDUEL DE CONTRÔLE
INDIVIDUAL INSPECTION RECORD

WEIGHT AND BALANCE REPORT

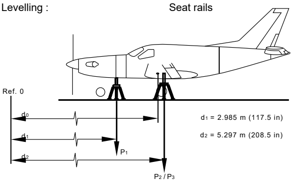
6-SEAT CONFIGURATION

TBM 700

S/N :

F : 8

Levelling : Seat rails



Front wheel

Left and right Wheel points

LIMITATION — ONLY FOR INFORMATION, REFER TO LIMITATIONS SECTION 2 OF POH

Maximum takeoff weight :	3,454	kg	H
Maximum landing weight :	3,225	kg	

Balance (landing gears down and flaps up)

2,835 kg	18	to	35.5	%	H
3,186 kg	23.8	to	35.4	%	
3,354 kg	23.8	to	35	%	
3,454 kg	34.4	to	34.7	%	

WEIGHING CARRIED OUT ON JACK POINTS

Painted airplane
With engine oil

	Gross Weight (kg)	Tare (kg)	Net Weight (kg)
Left point	785.8		P2
Right point	825.0		P3
Front point	507.7		P1

Weight P0 (kg) = 2,118.5

DISTANCE FROM C.G. TO REFERENCE

$$d0 = \frac{(P1 \times d1) + (P2 + P3) \times d2}{P0}$$

$$d0 = \frac{(507.7 \times 2.985) + (785.8 + 825) \times 5.297}{2{,}118.5} = 4.743$$

CORRECTIONS

	Weight (kg)	Arm (m)	Moment (m * kg)
Weight P0	2,118.5	4.743	10,048.0
Paint (2)	~~30.0~~	~~4.873~~	~~146.2~~
Engine oil (3)	~~11.2~~	~~2.000~~	~~23.4~~
Unusable fuel	27.2	4.700	127.8
RESULTS	W: 2,145.7	D0: 4.742	M: 10,175.89

BALANCE
MAC (%)

$$CG = \frac{D0 - 4.392}{1.51} \times 100$$

$$CG = \frac{4.742 - 4.392}{1.51} \times 100 = 23.2$$

BASIC INDEX CALCULATION
See section 6 of Pilot's Operating Handbook

Empty weight (W) :	2,145.7 kg	(1a)
Balance (CG) :	23.2 %	(1c)
Moment (M) :	10,175.89 m*kg	(1b)

DESCRIPTION OF 6-SEAT CONFIGURATION :
- Application of Modifications described in the chapter F11 (Modification Status) of this RIC.
- Application of Options described in the chapter F5 (Description of optional equipment) of this RIC
- Aircraft ground equipement kit installed in the front baggage compartment.
- Seats protections and carpet protections not installed.
- Freight nets and freight carpets not installed.
- Kit for 4-seat configuration not installed.

1 - Scratch useless mention.
2 - Values not taken into account if the airplane was painted when weighed.
3 - Values not taken into account if the oil tank was full when the airplane was weighed.

DATE :

INSPECTION VISA :

C4080000AABCMA8000

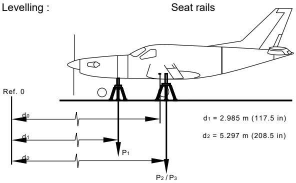
NOTE

The airplane's original report shall be kept with the airplane's POH.

Figure 6.4.2 - Example of Weight and Balance Report and Basic Airplane Characteristics (in, lbs)

	REGISTRE INDIVIDUEL DE CONTRÔLE INDIVIDUAL INSPECTION RECORD WEIGHT AND BALANCE REPORT 6-SEAT CONFIGURATION	**TBM 700** S/N : F : 6

Levelling : Seat rails



Front wheel

Left and right
Wheel points

LIMITATION ONLY FOR INFORMATION, REFER TO LIMITATIONS SECTION 2 OF POH

Maximum takeoff weight :	7,615	lbs	H
Maximum landing weight :	7,110	lbs	

Balance (landing gears down and flaps up)

6,250 lbs	18 to 35.5	%		H
7,024 lbs	23.8 to 35.4	%		
7,394 lbs	23.8 to 35	%		
7,615 lbs	34.4 to 34.7	%		

WEIGHING CARRIED OUT ON JACK POINTS

Painted airplane
With engine oil

	Gross Weight (lbs)	Tare (lbs)	Net Weight (lbs)
Left point	1,732.4		P2
Right point	1,818.8		P3
Front point	1,119.3		P1

Weight P0 (lbs) = 4,670.5

DISTANCE FROM C.G. TO REFERENCE

$$d0 = \frac{(P1 \times d1) + (P2 + P3) \times d2}{P0}$$

$$d0 = \frac{(1,119.3 \times 117.5) + (1,732.4 + 1,818.8) \times 208.5}{4,670.5} = 186.7$$

CORRECTIONS

	Weight (lbs)	Arm (in)	Moment (in * lbs)
Weight P0	4,670.5	186.7	871,943.0
Paint (2)	~~66.2~~	~~191.8~~	~~12,697.2~~
Engine oil (3)	~~24.7~~	~~82.3~~	~~2,032.8~~
Unusable fuel	60.0	185.0	11,100.0
RESULTS	W: 4,730.5	D0: 186.7	M: 883,043.0

BALANCE
MAC (%)

$$CG = \frac{D0 - 172.9}{59.5} \times 100$$

$$CG = \frac{186.7 - 172.9}{59.5} \times 100 = 23.2$$

BASIC INDEX CALCULATION
See section 6 of Pilot's Operating Handbook

Empty weight (W) :	$\boxed{4,730.5 \text{ lbs}}$	(1a)
Balance (CG) :	$\boxed{23.2 \text{ \%}}$	(1c)
Moment (M) :	$\boxed{883,043.0 \text{ in*lbs}}$	(1b)

DESCRIPTION OF 6-SEAT CONFIGURATION :
- Application of Modifications described in the chapter F11 (Modification Status) of this RIC.
- Application of Options described in the chapter F5 (Description of optional equipment) of this RIC
- Aircraft ground equipement kit installed in the front baggage compartment.
- Seats protections and carpet protections not installed.
- Freight nets and freight carpets not installed.
- Kit for 4-seat configuration not installed.

1 - Scratch useless mention.
2 - Values not taken into account if the airplane was painted when weighed.
3 - Values not taken into account if the oil tank was full when the airplane was weighed.

DATE : INSPECTION VISA :

C4080000AABDMA08000

Weight and Balance Form and Diagram (m, kg)

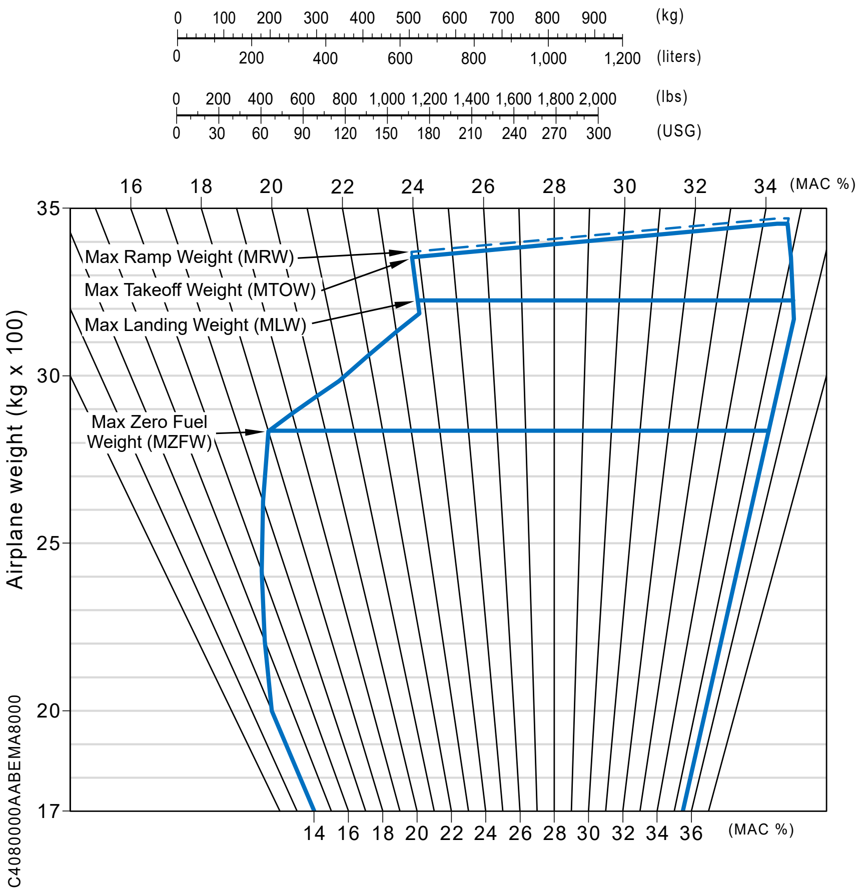
Moment = Weight × Arm

$$CG\ (MAC\ \%) = \frac{Arm\ (m) - 4.392}{1.51} \times 100$$

Table 6.4.1 - Weight and Balance Form (m, kg)

Item		Weight (kg)	Arm (m)	Moment (m.kg)	C.G. (MAC %)
Empty weight	(kg)				
Baggage FWD	(< 50 kg)		3.250		
Front seats	(kg)		4.534		
Inter. seats	- 15.4 kg per seat removed *		5.710		
	Pax				
Rear bench/net	- 21 kg per seat removed *		6.785		
	Pax				
	Cargo (< 80 kg)				
Baggage AFT	(< 100 kg)		7.695		
Zero fuel weight	(< 2,836 kg)				
Fuel	(kg)		4.820		
Ramp weight	(< 3,470 kg)				
Taxi fuel	(kg)		4.820		
Takeoff weight	(< 3,454 kg)				
Trip fuel	(kg)		4.820		
Landing weight	(< 3,225 kg)				
* Seat weights include the seat heating system					

Figure 6.4.3 - Weight and Balance Diagram (m, kg)



Weight and Balance Form and Diagram (in, lbs)

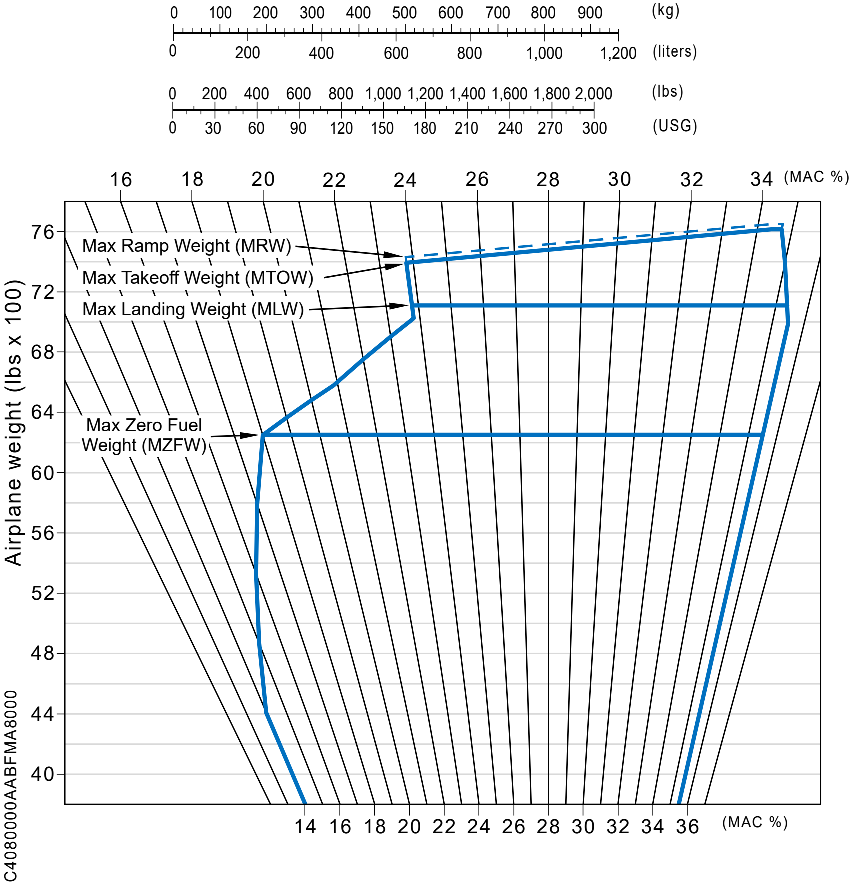
Moment = Weight × Arm

$$\text{CG (MAC \%)} = \frac{\text{Arm (in)} - 172.93}{59.45} \times 100$$

Table 6.4.2 - Weight and Balance Form (in, lbs)

Item		Weight (lbs)	Arm (in)	Moment (in.lbs)	C.G. (MAC %)
Empty weight	(lbs)				
Baggage FWD	(< 110 lbs)		128.0		
Front seats	(lbs)		178.5		
Inter. seats	- 34 lbs per seat removed *		224.8		
	Pax				
Rear bench/net	- 46.2 lbs per seat removed *		267.1		
	Pax				
	Cargo (< 176 lbs)				
Baggage AFT	(< 220 lbs)		303.0		
Zero fuel weight	(< 6,252 lbs)				
Fuel	(lbs)		189.8		
Ramp weight	(< 7,650 lbs)				
Taxi fuel	(lbs)		189.8		
Takeoff weight	(< 7,615 lbs)				
Trip fuel	(lbs)		189.8		
Landing weight	(< 7,110 lbs)				
* Seat weights include the seat heating system					

Figure 6.4.4 - Weight and Balance Diagram (in, lbs)



Weight and Balance Examples (m, kg)

CAUTION

These loading tables (Table 6.4.3, Table 6.4.4 and Figure 6.4.5) are provided only as examples. For calculations concerning your airplane, use the appropriate diagram.

Table 6.4.3 - Loading Example (m, kg)

1 - Airplane basic characteristics:	
W = Empty weight	2,170 kg
Moment	10,258 m.kg
Balance arm	4.727 m
C.G. (MAC %)	22.2%
2 - Anticipated loading:	
1 Pilot	90 kg
1 passenger on intermediate seat	90 kg
2 Rear passengers	160 kg
AFT Cargo in baggage compartment	35 kg
Fuel	915 kg
3 - Anticipated fuel:	
Taxi fuel	- 30 kg
Trip fuel	- 600 kg

Moment = Weight × Arm

$$CG\ (MAC\ \%) = \frac{Arm\ (m) - 4.392}{1.51} \times 100$$

Table 6.4.4 - Weight and Balance Form Example (m, kg)

Item	Weight (kg)	Arm (m)	Moment (m.kg)	C.G. (MAC %)
Empty weight (kg)	2,170	4.727	10,258	22.2

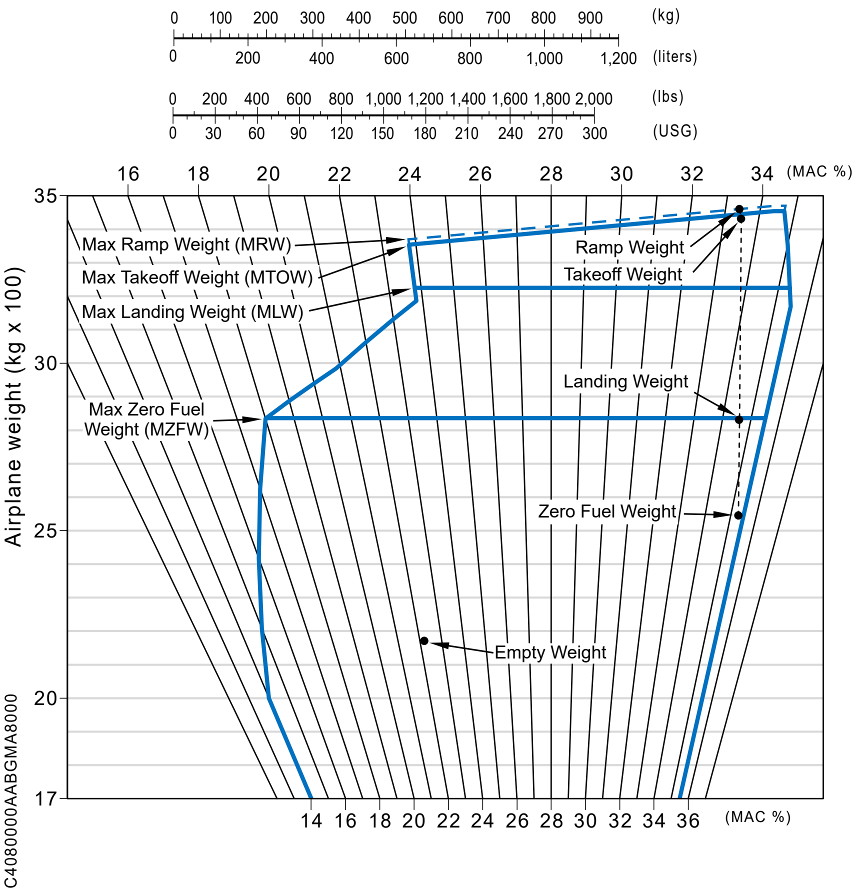
Continue ►

► *Continuing*

Table 6.4.4 - Weight and Balance Form Example (m, kg)

<table>
<tr><th colspan="2">Item</th><th>Weight
(kg)</th><th>Arm
(m)</th><th>Moment
(m.kg)</th><th>C.G.
(MAC %)</th></tr>
<tr><td>Baggage FWD</td><td>(< 50 kg)</td><td>0</td><td>3.250</td><td>0</td><td></td></tr>
<tr><td>Front seats</td><td>(kg)</td><td>90</td><td>4.534</td><td>408</td><td></td></tr>
<tr><td rowspan="2">Inter. seats</td><td>- 15.4 kg per seat removed *</td><td>0</td><td rowspan="2">5.710</td><td>0</td><td></td></tr>
<tr><td>Pax</td><td>90</td><td>514</td><td></td></tr>
<tr><td rowspan="3">Rear bench/net</td><td>- 21 kg per seat removed *</td><td>0</td><td rowspan="3">6.785</td><td>0</td><td></td></tr>
<tr><td>Pax</td><td>160</td><td>1,086</td><td></td></tr>
<tr><td>Cargo (< 80 kg)</td><td>0</td><td>0</td><td></td></tr>
<tr><td>Baggage AFT</td><td>(< 100 kg)</td><td>35</td><td>7.695</td><td>269</td><td></td></tr>
<tr><td>Zero fuel weight</td><td>(< 2,836 kg)</td><td>2,545</td><td>4.925</td><td>12,535</td><td>35.3</td></tr>
<tr><td>Fuel</td><td>(kg)</td><td>915</td><td>4.820</td><td>4,410</td><td></td></tr>
<tr><td>Ramp weight</td><td>(< 3,470 kg)</td><td>3,460</td><td>4.897</td><td>16,945</td><td>33.4</td></tr>
<tr><td>Taxi fuel</td><td>(kg)</td><td>- 30</td><td>4.820</td><td>- 145</td><td></td></tr>
<tr><td>Takeoff weight</td><td>(< 3,454 kg)</td><td>3,430</td><td>4.898</td><td>16,800</td><td>33.5</td></tr>
<tr><td>Trip fuel</td><td>(kg)</td><td>- 600</td><td>4.820</td><td>- 2,892</td><td></td></tr>
<tr><td>Landing weight</td><td>(< 3,225 kg)</td><td>2,830</td><td>4.914</td><td>13,908</td><td>34.6</td></tr>
<tr><td colspan="6">* Seat weights include the seat heating system</td></tr>
</table>

Figure 6.4.5 - Weight and Balance Diagram Example (m, kg)



Weight and Balance Examples (in, lbs)

CAUTION

These loading tables (Table 6.4.5, Table 6.4.6 and Figure 6.4.6) are provided only as examples. For calculations concerning your airplane, use the appropriate diagram.

Table 6.4.5 - Loading Example (in, lbs)

1 - Airplane basic characteristics:	
W = Empty weight	4,740 lbs
Moment	883,741 in.lbs
Balance arm	186.4 in
C.G. (MAC %)	22.8%
2 - Anticipated loading:	
FWD compartment	0 lbs
1 Pilot and 1 front passenger	400 lbs
1 Intermediate passenger	220 lbs
2 Rear seats removed	- 92.4 lbs
Rear cargo	176 lbs
AFT cargo in baggage compartment	220 lbs
Fuel	1,900 lbs
3 - Anticipated fuel:	
Taxi fuel	- 50 lbs
Trip fuel	- 1,450 lbs

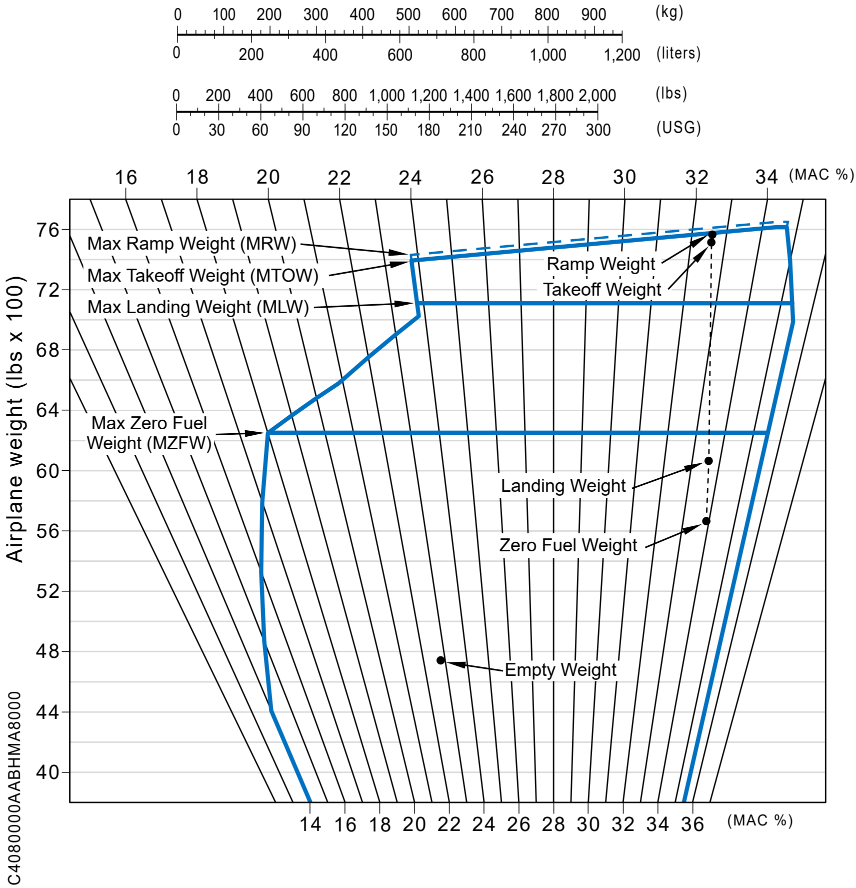
Moment = Weight × Arm CG (MAC %) = $\frac{\text{Arm (in)} - 172.93}{59.45} \times 100$

Table 6.4.6 - Weight and Balance Form Example (in, lbs)

Item		Weight (lbs)	Arm (in)	Moment (in.lbs)	C.G. (MAC %)
Empty weight	(lbs)	4,740	186.4	883,741	22.8
Baggage FWD	(< 110 lbs)	0	128.0	0	
Front seats	(lbs)	400	178.5	71,400	
Inter. seats	- 34 lbs per seat removed *	0	224.8	0	
	Pax	220		49,456	
Rear bench/net	- 46.2 lbs per seat removed *	- 92.4	267.1	- 24,680	
	Pax	0		0	
	Cargo (< 176 lbs)	176		47,010	
Baggage AFT	(< 220 lbs)	220	303.0	66,660	
Zero fuel weight	(< 6,252 lbs)	5,664	193.1	1,093,587	33.9
Fuel	(lbs)	1,900	189.8	360,620	
Ramp weight	(< 7,650 lbs)	7,564	192.3	1,454,207	32.6
Taxi fuel	(lbs)	- 50	189.8	- 9,490	
Takeoff weight	(< 7,615 lbs)	7,514	192.3	1,444,717	32.6
Trip fuel	(lbs)	- 1,450	189.8	- 275,210	
Landing weight	(< 7,110 lbs)	6,064	192.9	1,169,507	33.6

* Seat weights include the seat heating system

Figure 6.4.6 - Weight and Balance Diagram Example (in, lbs)



Determining Empty Airplane Characteristics

Empty airplane characteristics (weight and balance) may vary in relation to those indicated on the weighing form based on the installed optional equipment and installed seats.

The list of equipment (refer to Subsection 6.5. List of Equipment) contains the standard and optional equipment, as well as their characteristics (weight, arm), except those listed in this chapter.

Use the chart below to compute the new empty weight and corresponding balance if necessary.

Table 6.4.7 - Example Weight and Balance Record

Date	Equipment or modification description	(+) (-)	Weight modification			Basic empty weight		
			Weight lbs	Arm in	Moment in.lbs/ 1000	Weight W	Arm "d_0"	Moment
	According to delivery							

$$CG\ (MAC\ \%) = \frac{d_0 - 172.93}{59.45} \times 100$$

Use the above formula to express arm "d_0" in % of mean aerodynamic chord (MAC).

NOTE

The arm is expressed in inches with relation to the reference datum.

FWD baggage compartment:	128.0 in (3.250 m)
Baggage compartment in pressurized cabin:	303.0 in (7.695 m)
Fuel:	189.8 in (4.820 m)

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in (m)
		10 - Parking, mooring, storage and return to service		
		Board kit		
S		- Blanking caps bag	8.31 (3.77)	128.00 (3.250)
S		- Towing bar	8.77 (3.98)	128.00 (3.250)
S		- Control lock device	0.90 (0.41)	133.86 (3.400)
		25 - Equipment and furnishings (partial)		
A	0641-25A	**Upholstery Version 2019, of which:**	Δ Neglig.	/
		- Carpets for 6-place configuration	26.68 (12.100)	/
		- Carpets for 4-place configuration	20.59 (9.340)	/
A	0641-25A	**Generation 2008 cabinets:**		
		- L.H. low storage	9.48 (4.300)	203.74 (5.175)
		- R.H. low storage	9.48 (4.300)	203.74 (5.175)
		- L.H. low + high storage	17.20 (7.800)	203.74 (5.175)
		- R.H. low + high storage	17.20 (7.800)	203.74 (5.175)
		- L.H. low + top pilot case support	9.70 (4.400)	203.74 (5.175)
		- R.H. low + top pilot case support	9.70 (4.400)	203.74 (5.175)
S	0207-00	Carpet	35.27 (16.000)	211.42 (5.370)

Continue ▶

► *Continuing*

S/ R/ A/ O	Item OPT70 or MOD70	Required (R) or Standard (S) or Optional (A or O) equipment	Weight per unit lb (kg)	Arm in (m)
		- Cabin furnishings	302.45 (137.19)	211.42 (5.370)
		Leather seats		
S	0588-25	- L.H. intermediate seat with seat heaters (back to or in flight direction)	34.06 (15.45)	224.80 (5.710)
S	0588-25	- R.H. intermediate seat with seat heaters (back to or in flight direction)	34.06 (15.45)	224.80 (5.710)
S	0588-25	- Double chair		
		. L.H. seat with seat heaters	46.25 (20.98)	278.62 (7.077)
		. R.H. seat with seat heaters	46.25 (20.98)	278.62 (7.077)
		Nets		
S	0315-25	- Small cargo net GP SOCT704CC-10	15.00 (7.00)	/
S	0315-25	- Large cargo net GP SOCT704CS-10	13.00 (6.00)	/
S	25026B	- Partition net at Frame 14 (between the cabin and the baggage compartment) T700B2590001, of which:	3.64 (1.650)	289.53 (7.354)
S		. Partition net	1.70 (0.77)	289.53 (7.354)

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6.5 - List of Equipment

The list of equipment is available on the MyTBM.aero website.

A separate list of equipment items installed at the factory in your specific airplane is provided in the records carried in the airplane.

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Section 7

Description

Table of Contents

7.1 - General

This section provides description and operation of the airplane and its systems.

Some of the equipment described herein is optional and may not be installed in the airplane.

Complete description and operation of the Garmin Integrated Flight Deck are detailed in the Garmin Pilot's Guide. Reference to this guide is often made all along this section to get more details about some systems.

Details of other optional systems and equipment are presented in Section 9: Supplements of the POH.

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7.2 - Airframe

See Figure 7.2.1, Figure 7.2.2 and Figure 7.2.3.

This airplane is a six-place, low wing airplane.

The airplane can be changed into 2, 3, 4 or 5-seat accommodation.

The structure is a semi-monocoque all-metal construction and is equipped with a retractable tricycle landing gear.

The pressurized cabin is equipped, on the left side of the fuselage, with a one-piece access door and folding stairs comprising a hand rail allowing pilot and passengers boarding. The occupants have access to the cockpit and rear seats through a central aisle.

An optional pilot door located forward of the cabin on the left side allows access to the cockpit by means of folding stairs.

The aft cabin section is a baggage compartment.

Figure 7.2.1 - Cabin Arrangement – 6-seat Accommodation

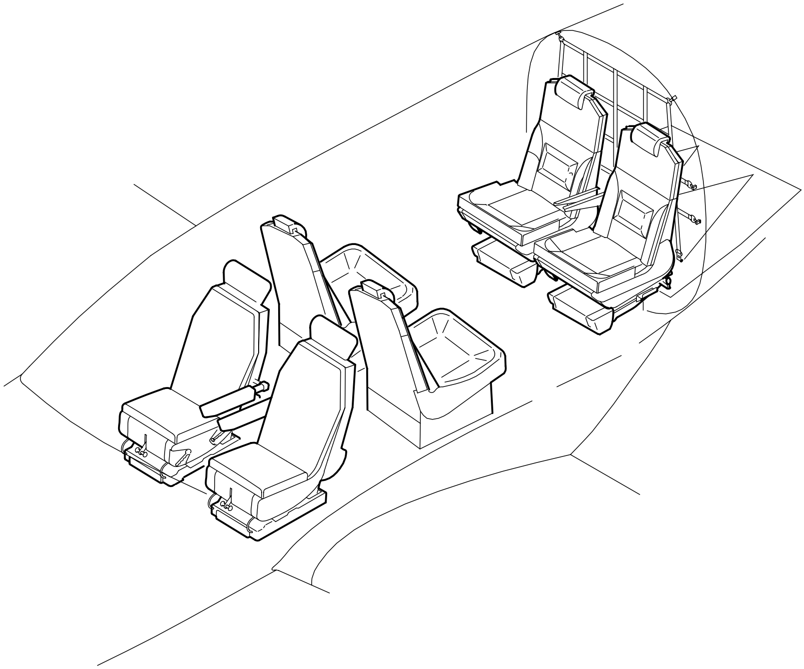

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Figure 7.2.2 - Cabin Arrangement – 4-seat Accommodation with Large Securing Net

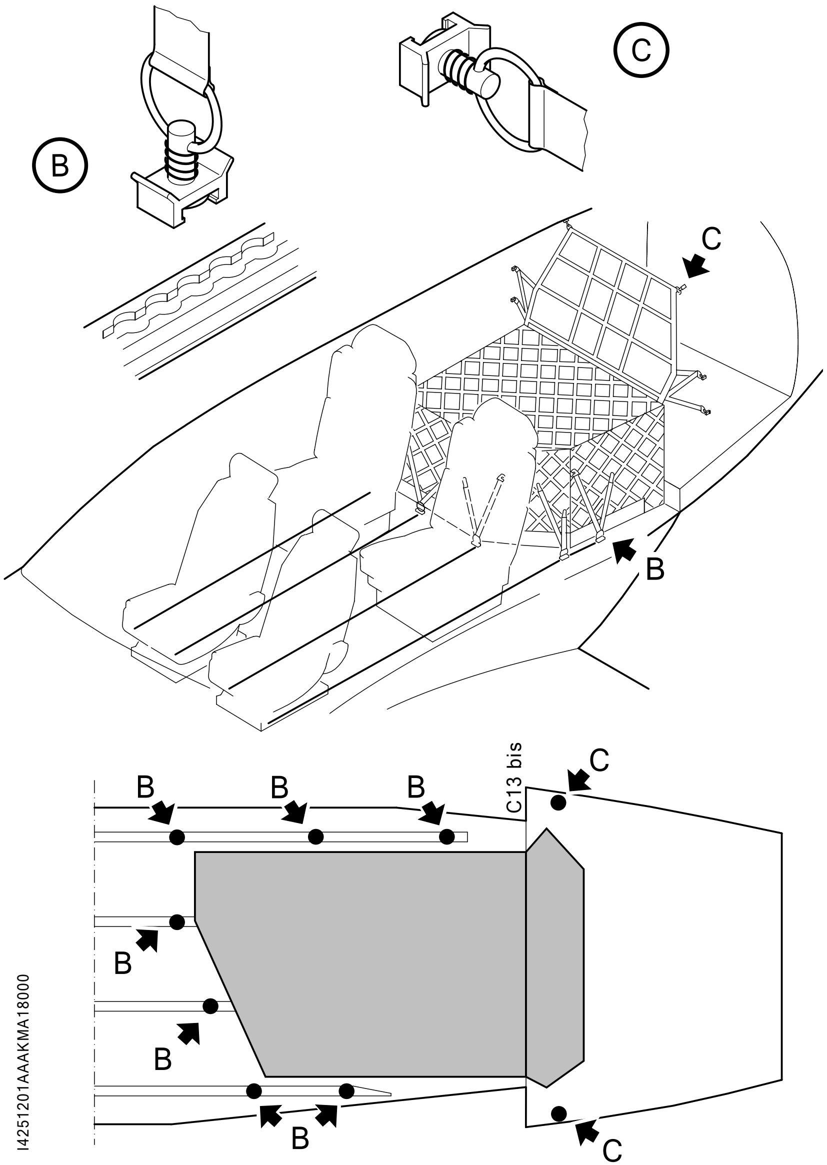
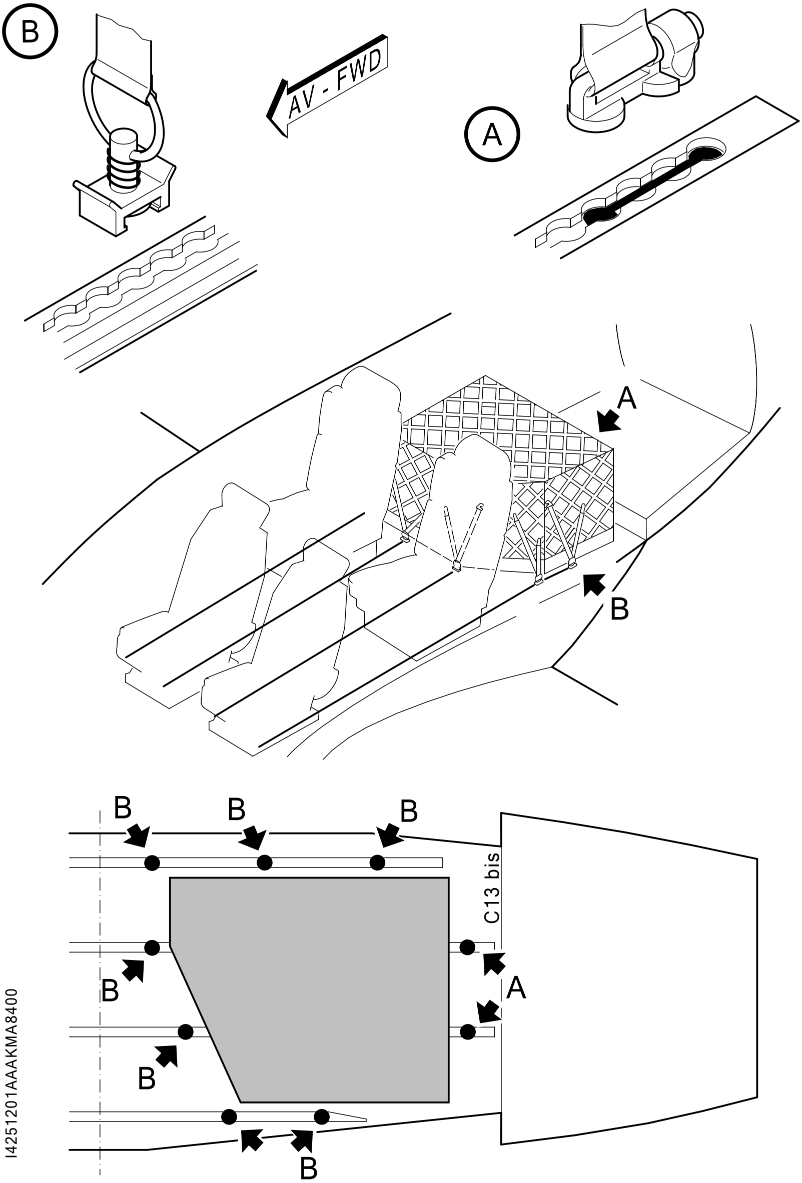


Figure 7.2.3 - Cabin Arrangement – 4-seat Accommodation with Small Securing Net



Wings

The wings are monocoque, bi-spar structures. Main spars of each wing are linked to the fuselage by two integral attach fittings. Each wing contains a main landing gear well and sealed casings forming the fuel tank. The wing leading edge is equipped with a deicing system.

Each wing extremity is equipped with a winglet.

Ailerons, Spoilers and Roll Trim Tab

The ailerons located on external trailing edge of each wing are hinged on two attach fittings fixed on the rear spar. They allow airplane lateral control and are controlled mechanically through control wheel rotation.

The spoilers located in front of flaps, on top skin side, are mechanically linked to the ailerons.

Trim tab attached on the trailing edge of left-side aileron is electrically activated by a trim switch, through an actuator.

Wing Flaps

See Figure 7.2.4 and Figure 7.2.5.

The wing flaps are large span slotted flaps with a single rotation point. They are activated by actuating rod-controlled screw jacks linked to an electric motor located under the floor, inside the fuselage.

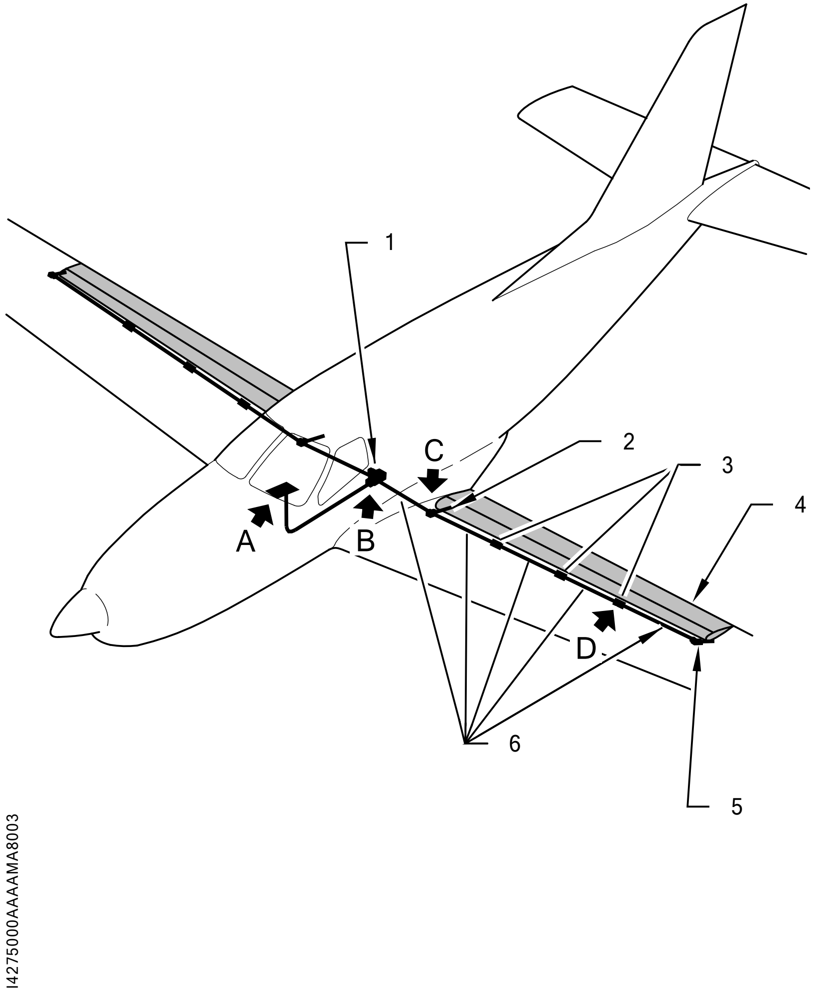
A preselection control located on the right side of pedestal console allows the pilot to select one of the three positions (UP - TO - LDG). For each control position, a deflection angle is defined (0°, 10°, 34°).

A monitoring device interrupts flaps movement as soon as a deflection dissymmetry is detected.

Key to Figure 7.2.4

1) Geared motor
2) Internal actuator
3) Intermediate bearings
4) Wing flap
5) External actuator
6) Rods

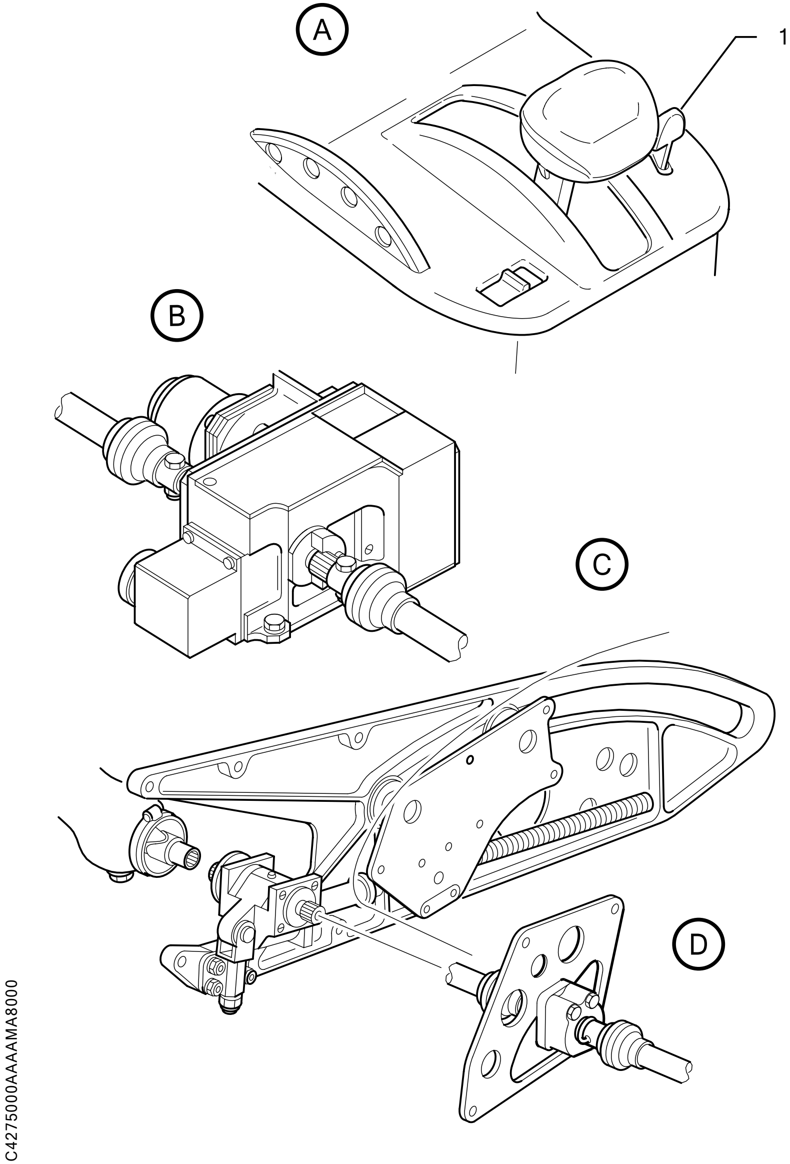
Figure 7.2.4 - Wing Flaps (1/2)



Key to Figure 7.2.5

1) Control selector

Figure 7.2.5 - Wing Flaps (2/2)



Empennages

Empennages are composite structures. The horizontal empennage consists of a horizontal stabilizer, control surfaces and elevator trim tabs; the vertical empennage consists of a vertical stabilizer, the rudder and the rudder trim tab. The empennage leading edge is equipped with a deicing system.

7.3 - Accomodations

Instrument Panel

The instrument panel contains instruments and controls necessary for flight monitoring. The typical instrument panel consists of all standard equipment, as well as additional optional equipment.

Upper Panel

See Figure 7.3.2.

The upper panel located at the top part of the windshield, contains LIGHTS control panels, ELECTRICAL POWER control panel, ENGINE / FUEL control panel, AP/ TRIMS switch and ELT remote control switch.

Rearwards of upper panel, the central part of cockpit overhead panel provides loudspeakers and cockpit floodlights.

The TEST pushbutton, at the left of the panel, allows to test:

- the autopilot control panel backlighting,
- the MASTER WARNING and MASTER CAUTION indicators,
- the DE ICE SYSTEM panel leds,
- the ENGINE / FUEL panel leds,
- the ECS panel leds,
- the DUMP switch,
- the MICRO/MASK switch,
- the GND FEATHER switch,
- the HomeSafe activation button,
- the stick shaker system,
- the fire detection system, if installed,
- the stall aural warning alert,
- the DISPLAY BACKUP pushbuttons backlighting,
- the LVL pushbutton.

>> *postMod: MOD70-800-00*

- the SEATS HTRS MASTER panel led,
- the CB LIGHT panel led.

>> All

Instrument Panel

See Figure 7.3.1.

The instrument panel consists of the integrated flight deck composed of three screens [two primary flight displays (PFD) and one multi-function display (MFD)] – refer to the Garmin Pilot's Guide for detailed description. Apart from the Garmin flight deck system, equipment listed below complete the instrument panel.

>> preMod: MOD70-0800-00

- Left area instrument panel includes – see Figure 7.3.3:
  . on top: MD302, MASTER CAUTION and MASTER WARNING,
  . on the left: DISPLAY BACKUP pushbutton and SEATS HTRS MASTER panel,
  . at bottom: deicing controls and indicators, MICRO/MASK switch, hourmeter, LANDING GEAR control panel, parking brake control and left station control wheel.
- Central area instrument panel includes – see Figure 7.3.4:
  . on top: AFCS control unit, BARO knob (pilot) and the LVL pushbutton
  . at bottom: touchscreen controllers, ECS and PRESSURIZATION panels.
- Right area instrument panel includes – see Figure 7.3.5:
  . on top: locations for optional equipment,
  . on the right: DISPLAY BACKUP pushbutton and BARO knob (right station),
  . at bottom: alternate static source selector and the right station control wheel.
- Emergency air control is located under the right area instrument panel.

>> All

>> postMod: MOD70-0800-00

- Left area instrument panel includes – see Figure 7.3.6:
  . on top: MD302, MASTER CAUTION and MASTER WARNING,
  . on the left: DISPLAY BACKUP pushbutton, BARO knob (pilot) and SEATS HTRS MASTER panel,
  . at bottom: deicing controls and indicators, MICRO/MASK switch, hourmeter, LANDING GEAR control panel, parking brake control and left station control wheel.

- Central area instrument panel includes – see Figure 7.3.7:
  . on top: AFCS control unit and the LVL pushbutton
  . at bottom: touchscreen controllers, ECS and PRESSURIZATION panels.
- Right area instrument panel includes – see Figure 7.3.8:
  . on top: locations for optional equipment,
  . on the right: DISPLAY BACKUP pushbutton and BARO knob (right station),
  . at bottom: alternate static source selector and the right station control wheel.
- Emergency air control is located under the right area instrument panel.

>> *All*

An adjustable air outlet is located on both sides of instrument panel lower part.

Reception-micro jacks are located inside the recess under the armrest on both lateral sides of the cockpit, on right side of right-side intermediate passenger's seat and on the armrest of right-side rear passenger's seat.

Pedestal Console

See Figure 7.3.9.

The pedestal console, under the touchscreen controllers, comprises flaps controls, pitch trim tab control wheel, aileron trim switch, engine controls, propeller feathering pushbutton and fuel tank selector.

Circuit Breakers Panel

See Figure 7.3.10 and Figure 7.9.3.

Circuit breakers for all electrical equipment supplied by bus bars are located on a separate panel installed on the right side of the cockpit.

General Alarms Warning Lights and CAS Messages

WARNING, **CAUTION** and **ADVISORY** messages appear in the CAS window to alert crew about monitored systems discrepancies. As a message appears, a chime is heard. Refer to the Garmin Pilot's Guide to know all possible CAS messages.

A **MASTER WARNING** red flashing indicator and a **MASTER CAUTION** amber indicator located on instrument panel – see Figure 7.3.11, in front of the pilot, illuminate as soon as one or several messages of same color light on.

To cancel and reset a general alarm, press on the red or amber indicator. A pressure on the red indicator also stops red message associated chimes.

Aural Warnings

See Figure 7.3.2.

The aural warnings are intended to alert the pilot during some configurations. The aural signals are heard through the loudspeakers installed in the cockpit overhead panel and through the pilot's and right-side station headsets.

The aural warnings consist of:

- the Garmin flight deck system (GIA and GMA),
- the loudspeaker.

The system uses:

- the stall warning system,
- the airspeed indicator,
- the landing gear control unit,
- the flap geared motor,
- the idle position sensor.

Aural Warning Alerts

According to the airplane configuration, different aural warning alerts sound:

Condition	Alert
gear up and idle above 800 ft AGL	*"Landing gear / Landing gear"* *
gear up and extended flaps above 800 ft AGL	
gear up and idle below 800 ft AGL	*"Check gear / Check gear"*
gear up and extended flaps below 800 ft AGL	
stall	*"Stall / Stall"*
gear up, idle and stall	*"Stall / Landing gear"* *
gear up, extended flaps and stall	
IAS > 269 ± 3 KIAS	*"Overspeed / Overspeed"*
AP disconnected	AP chime
AT disconnected	*"Autothrottle"*

Continue ►

► *Continuing*

Condition	Alert
* Pressing the MASTER CAUTION indicator mutes this aural alert.	

Refer to the Garmin Pilot's Guide for description of the other aural warning alerts.

Master warning alerts are announced by repetitive chimes while Master caution alerts are announced by single chimes.

Cockpit Overhead Panel

See Figure 7.3.2.

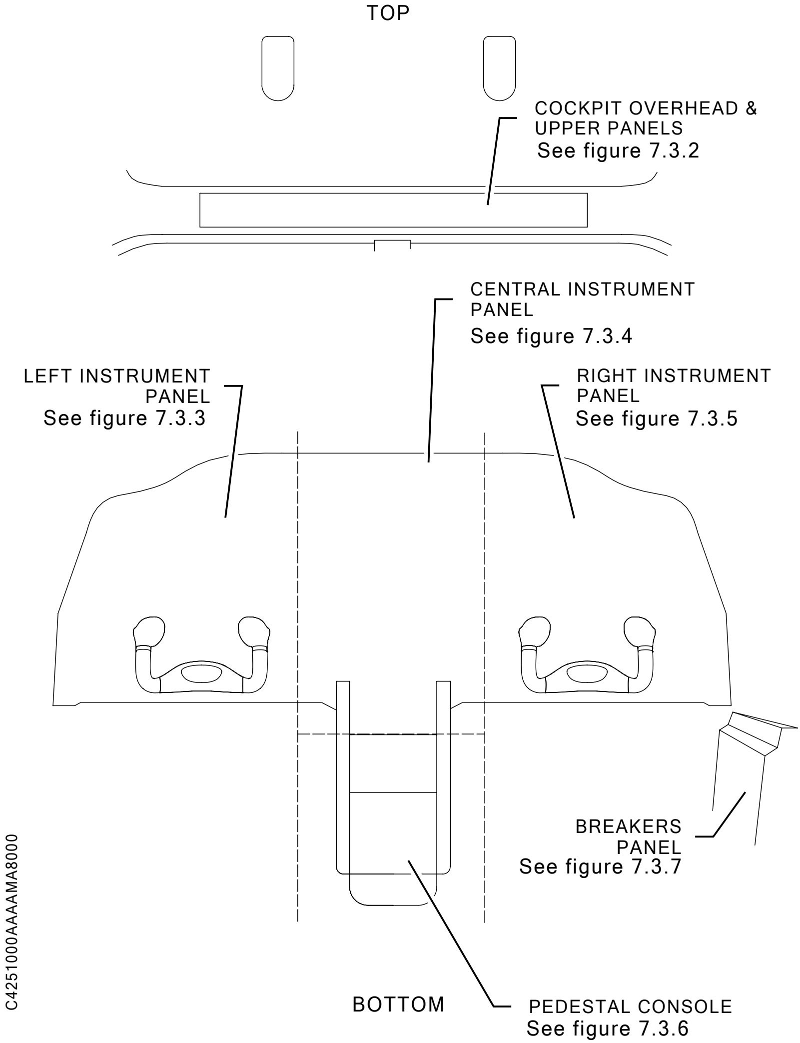
This panel includes following elements:

- the loudspeaker of GMA,
- the emergency lighting rheostat.

It is integrated in the ceiling upholstery panel.

The emergency lighting rheostat is electrically supplied by BATT BUS bar and protected by PANEL EMER circuit breaker.

Figure 7.3.1 - Instrument Panel Assembly (Typical arrangement)



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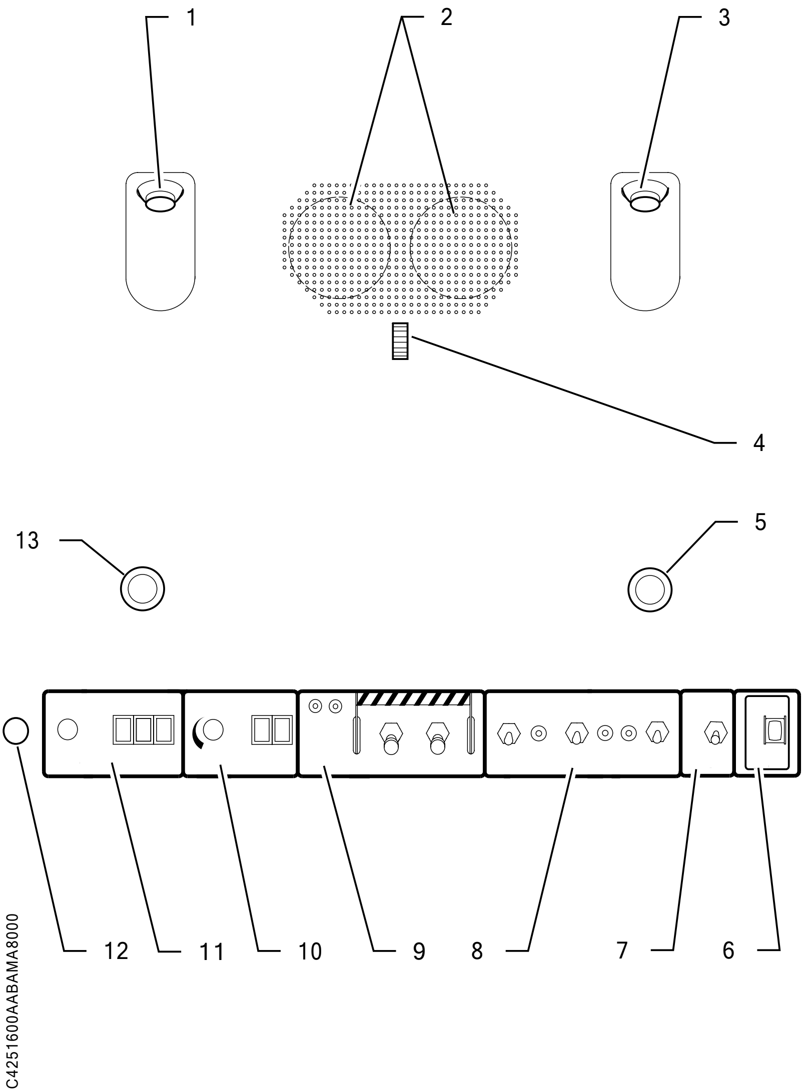
Key to Figure 7.3.2

1) Left-side instrument panel emergency lighting
2) Loudspeaker of GMA
3) Right-side instrument panel emergency lighting
4) Instrument panel emergency lighting switch (rheostat)
5) Right-side cockpit floodlight
6) ELT remote control switch
7) AP/TRIMS switch
8) ENGINE and FUEL switches – see Figure 7.6.8 and Figure 7.8.2.
9) ELECTRIC POWER switches – see Figure 7.9.2
10) INT LIGHTS internal lighting switches – see Figure 7.9.8
11) EXT LIGHTS external lighting switches – see Figure 7.9.7
12) TEST pushbutton
13) Left-side cockpit floodlight

Figure 7.3.2 - Upper Panel and Cockpit Overhead Panel



>> preMod: MOD70-0800-00

Key to Figure 7.3.3

1) DISPLAY BACKUP and SEATS HTRS MASTER panel – see Figure 7.3.17
2) General alarm red and amber indicators
3) MD302
4) PFD 1
5) Landing gear configuration and control panel – see Figure 7.5.1
6) Parking brake control – see Figure 7.5.6
7) USB servicing plug
8) Alternate left station reception-micro jack
9) Left station rudder pedals adjusting handle
10) Left station reception-micro jacks
11) Adjustable air outlet
12) Flight conditions and instruction placard
13) AP/TRIM DISC pushbutton
14) CWS
15) Push To Talk button (PTT)
16) Circuit breaker panel lighting switch
17) Pitch & Yaw trim setting management
18) Deicing control and check panel – see Figure 7.14.1
19) Paper clip
20) Hourmeter
21) MICRO/MASK switch – see Figure 7.11.1
22) COM 2 (Standby / Active)
23) Stormscope clear
24) Transponder Ident sequence
25) Chronometer management
26) Left station rudder pedals

Figure 7.3.3 - Left Instrument Panel (Typical arrangement)

>> All

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>> preMod: MOD70-0800-00

Key to Figure 7.3.4

1) BARO knob
2) Micro LDR
3) AFCS control unit
4) LVL pushbutton
5) HomeSafe activation button
6) Registration
7) MFD
8) Touchscreen controllers
9) ECS and PRESSURIZATION panels – see Figure 7.10.4

Figure 7.3.4 - Central Instrument Panel (Typical arrangement)

>> *All*

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>> preMod: MOD70-0800-00

Key to Figure 7.3.5

1) PFD 2
2) DISPLAY BACKUP pushbutton
3) BARO knob
4) Pitch & Yaw trim setting management
5) Push To Talk button (PTT)
6) CWS
7) AP/TRIM DISC pushbutton
8) Adjustable air outlet
9) Circuit breakers panel postlight
10) Right station rudder pedals adjusting handle
11) Right station reception-micro jacks
12) USB servicing plugs
13) Crew music
14) Paper clip
15) Cabin emergency air control (EMERGENCY RAM AIR control knob)
16) Static source selector
17) Chronometer management
18) Transponder Ident sequence
19) Stormscope clear
20) COM 2 (Standby / active)

Figure 7.3.5 - Right Instrument Panel (Typical arrangement)

>> All

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>> *postMod: MOD70-0800-00*

Key to Figure 7.3.6

1) SEATS HTRS MASTER panel – see Figure 7.3.18
2) BARO knob
3) DISPLAY BACKUP pushbutton
4) General alarm red and amber indicators
5) MD302
6) PFD 1
7) Landing gear configuration and control panel – see Figure 7.5.1
8) Parking brake control – see Figure 7.5.6
9) USB servicing plug
10) Alternate left station reception-micro jack
11) Left station rudder pedals
12) Left station rudder pedals adjusting handle
13) Left station reception-micro jacks
14) Adjustable air outlet
15) Flight conditions and instruction placard
16) AP/TRIM DISC pushbutton
17) Pitch & Yaw trim setting management
18) Push To Talk button (PTT)
19) CWS
20) Deicing control and check panel – see Figure 7.14.1
21) Paper clip
22) MICRO/MASK switch – see Figure 7.11.1
23) Hourmeter
24) Circuit breaker panel lighting pushbutton
25) COM 2 (Standby / Active)
26) Electronic checklist management (items acknowlegment function only)
27) Transponder Ident sequence
28) Chronometer management

Figure 7.3.6 - Left Instrument Panel (Typical arrangement)

>> All

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>> postMod: MOD70-0800-00

Key to Figure 7.3.7

1) LVL pushbutton
2) Micro LDR
3) AFCS control unit
4) Registration
5) HomeSafe activation button
6) MFD
7) Touchscreen controllers
8) ECS and PRESSURIZATION panels – see Figure 7.10.4

Figure 7.3.7 - Central Instrument Panel (Typical arrangement)

>> *All*

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>> *postMod: MOD70-0800-00*

Key to Figure 7.3.8

1) PFD 2
2) DISPLAY BACKUP pushbutton
3) BARO knob
4) Pitch & Yaw trim setting management
5) Push To Talk button (PTT)
6) CWS
7) AP/TRIM DISC pushbutton
8) Adjustable air outlet
9) Right station reception-micro jacks
10) Right station rudder pedals adjusting handle
11) Circuit breakers panel postlight
12) USB servicing plugs
13) Paper clip
14) Cabin emergency air control (EMERGENCY RAM AIR control knob)
15) Static source selector
16) Chronometer management
17) Transponder Ident sequence
18) Electronic checklist management (items acknowlegment function only)
19) COM 2 (Standby / active)

Figure 7.3.8 - Right Instrument Panel (Typical arrangement)

>> All

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Key to Figure 7.3.9

1) THROTTLE
2) FLAPS lever
3) Lock for access door to landing gear emergency pump – see Figure 7.5.2
4) Manual FUEL TANK SELECTOR – see Figure 7.8.3
5) Roll trim tab control
6) Pitch trim tab control
7) GND FEATHER switch

Figure 7.3.9 - Pedestal Console (Typical arrangement)

Figure 7.3.10 - Circuit Breakers Panel

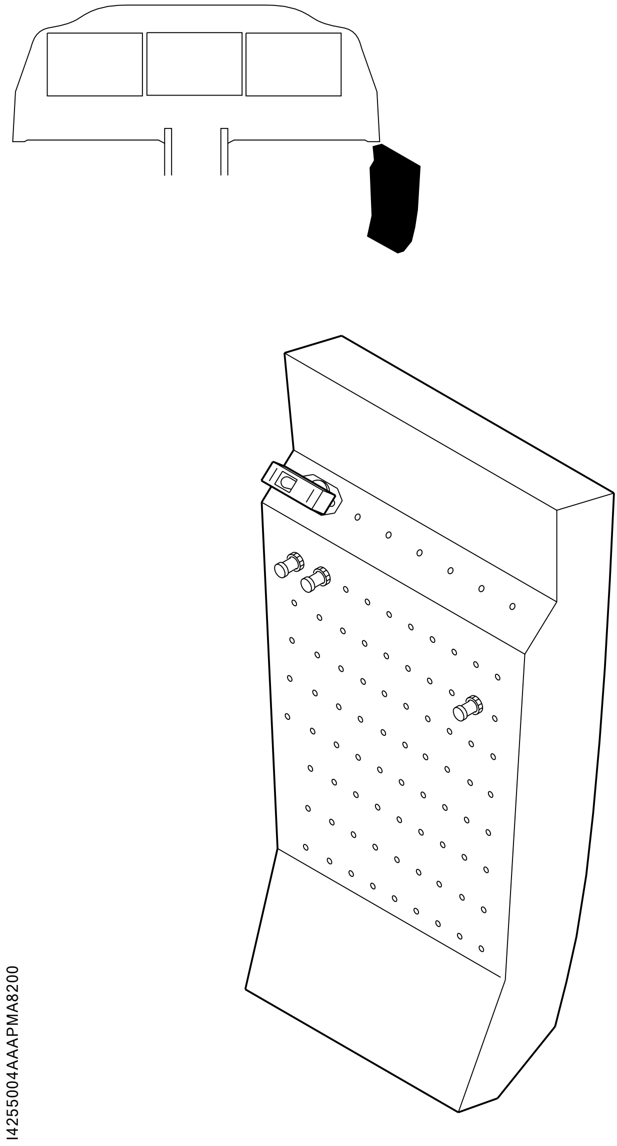


Figure 7.3.11 - General Alarms Warning Lights

HomeSafe Interface Panel

The activation button for HomeSafe emergency function is located in central area on top of instrument panel – see Figure 7.3.4.

Doors, Windows and Emergency Exit

Cabin Access Door

See Figure 7.3.12.

The cabin one-piece access door, located on the left side of fuselage aft of the wings, opens outside. The retractable stairs and hand rail make boarding easier.

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embedded in door (this pressure disengages the handle from its recess), then turn the handle upwards. Raise the door helping it to open. Two compensation actuators bring and maintain the door at its maximum opening position.

After door opening, tilt stairs downwards. Stairs down movement is damped by means of two gas struts and leads the hand rail to extend.

CAUTION

Retract stairs before closing access door and make sure door deflection area is clear.

To retract stairs, press on locking pin located on stairs front string board (see detail 1), raise retractable handle - see detail 2 and pull stairs inside cabin. While stairs are retracted, the hand rail folds up.

To close the door from inside the airplane, press on knob inside cabin forward of the door. The door driven by a geared motor tilts downwards up to a position near the complete closing. Pull the door until it aligns with fuselage and lock it by moving inside handle downwards. Check that all latch pins and hooks are correctly engaged (visible green marks).

DOOR is displayed in the CAS window as long as cabin access door and pilot access door, if installed, are not correctly locked.

CAUTION

Before opening access door, make sure door deflection area is clear.

To open the door from inside the cabin, unlock the handle by pressing on knob located on its left side, pull the handle toward inside and move it upwards. Open the door by pushing it upwards.

After door opening, tilt the stairs downwards which leads the hand rail to extend.

CAUTION

Retract stairs before closing access door and make sure door deflection area is clear.

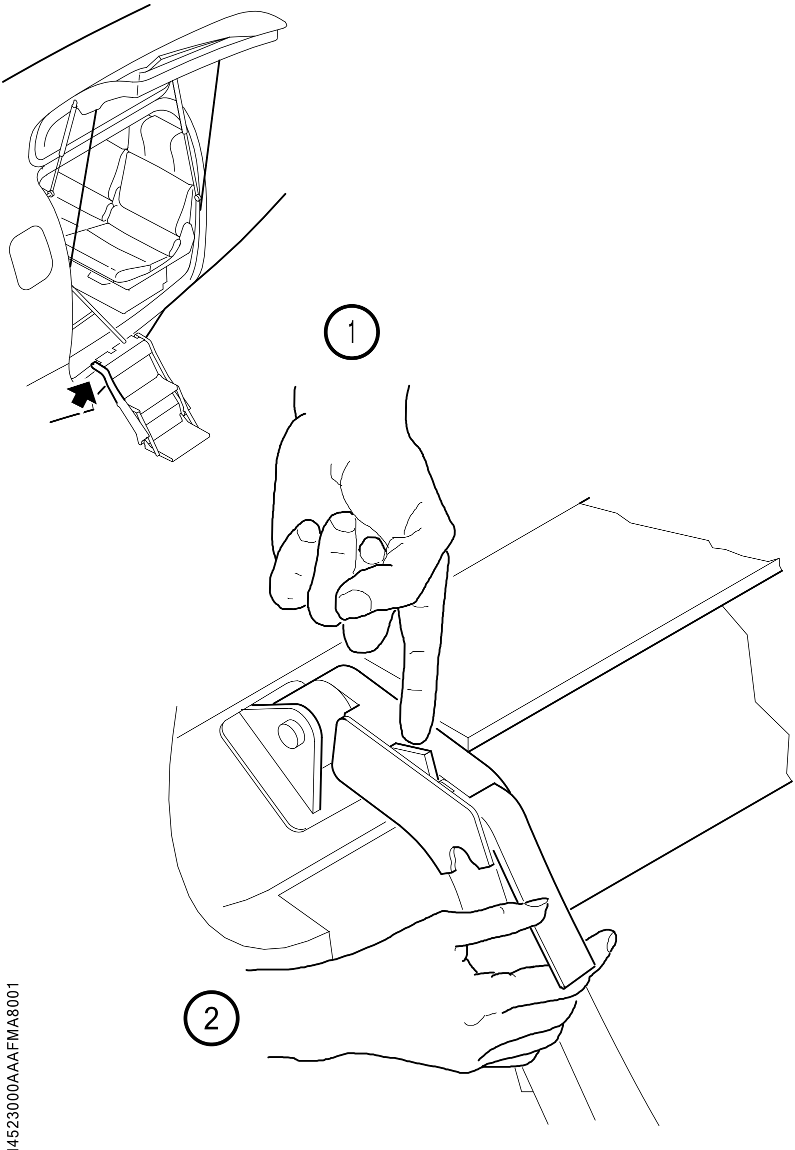
To retract stairs from outside the airplane, raise stairs by pushing them upwards from the lower part and fold them inside cabin. While stairs are retracted, the hand rail folds up.

To close the door from outside the airplane, press on knob on outside fuselage at the right side of the door. The door driven by a geared motor tilts downwards up to a position near the complete closing. Push the door until it aligns with fuselage and lock it by moving outside handle downwards, then fold handle in its recess.

Check that all latch pins and hooks are correctly engaged, with green marks visible.

In case of geared motor failure, the door can be manually tilted downwards by pulling sufficiently to override action of compensating struts.

Figure 7.3.12 - Cabin Access Door



Cockpit Access Door

See Figure 7.3.13.

The cockpit access door, so-called pilot door, if installed located on the left side of fuselage forward of the wings, opens outside. Retractable footstep makes boarding easier.

WARNING

As the pilot door is located in a dangerous area, wait for complete engine stop before operating this door.

To open the door from outside the airplane (make sure the door is not locked), press on front end of the handle embedded in door (this pressure disengages the handle from its recess), then turn the handle downwards. Pull the door helping it to open until it reaches its maximum opening position.

After door opening, tilt and unfold footstep.

CAUTION

Retract footstep before closing access door.

Fold and tilt footstep upwards.

To close the door from inside the airplane, pull the door until it aligns with fuselage and lock it by moving inside handle downwards. Check that each latch is correctly engaged in its recess, with green marks visible.

DOOR is displayed in the CAS window as long as cabin access door and pilot access door, if installed, are not correctly locked.

To open door from inside the cockpit, unlock the handle by pressing on knob located on its right side, pull the handle inwards and move it upwards. Open the door helping it to open until it reaches its maximum opening position.

After door opening, tilt and unfold footstep.

CAUTION

Retract footstep before closing access door.

Fold and tilt footstep upwards.

To close the door from outside the airplane, push the door until it aligns with fuselage and lock it by moving outside handle upwards, then fold handle in its recess.

FWD Compartment Door

The FWD compartment door is located on the airplane left side between the firewall and the front pressure bulkhead. It is hinged at the top. It is maintained in the up position by a compensation rod. Two interlocking-type latches ensure its closing and it is equipped with a lock (same key as for the access door and the pilot door, if installed). When the door is closed, latches are flush with the fuselage profile.

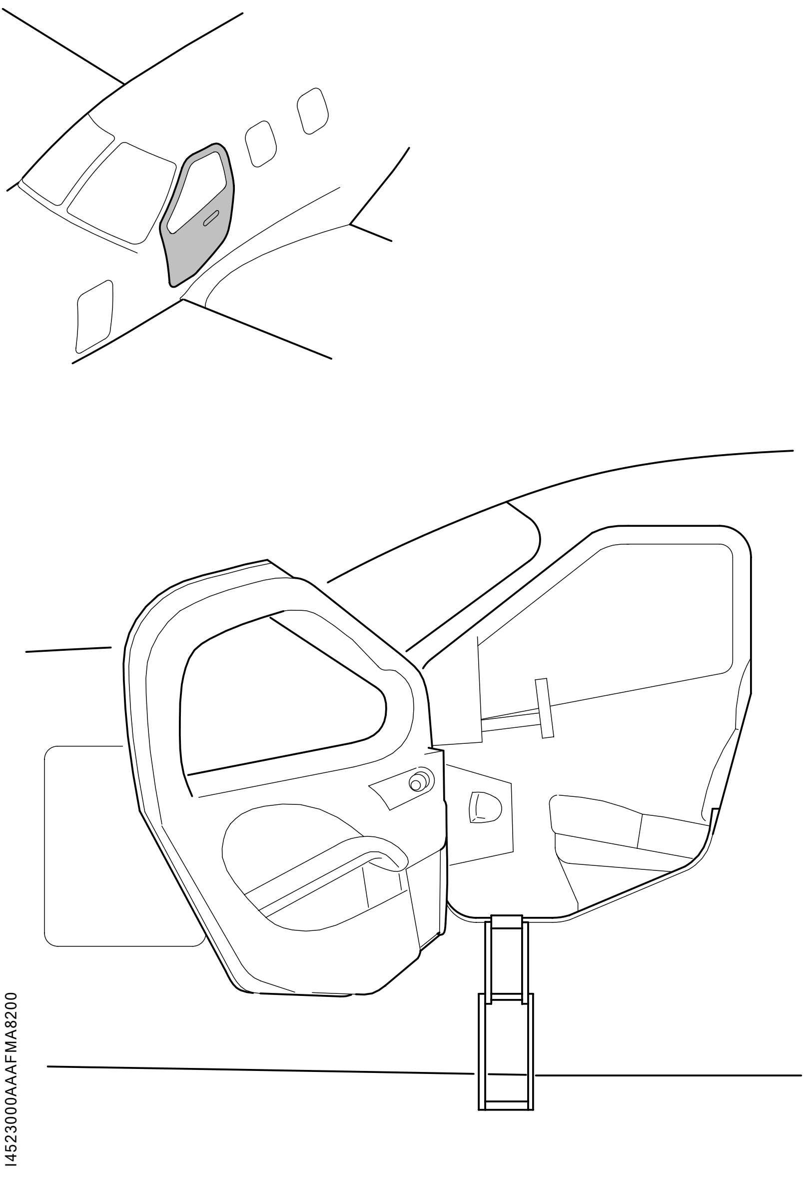
CARGO DOOR is displayed in the CAS window as long as FWD compartment door is not locked.

Windows

Windows do not open.

The windshield consists of two parts electrically deiced.

Figure 7.3.13 - Cockpit Access Door (pilot door)



Emergency Exit

See Figure 7.3.14.

The emergency exit is installed on the right side of the fuselage and opens towards the inside. It is equipped with two handles, one inside and the other outside, each located on the upper frame.

When the airplane is parked, the closing system may be locked by a safety pin provided with a flag marker. The handle is then inoperable.

WARNING

Taxiing and flying with thief-proof safety pin installed is forbidden.

To open the emergency exit, pull one of the two handles and tilt the emergency exit from top to bottom towards inside of airplane.

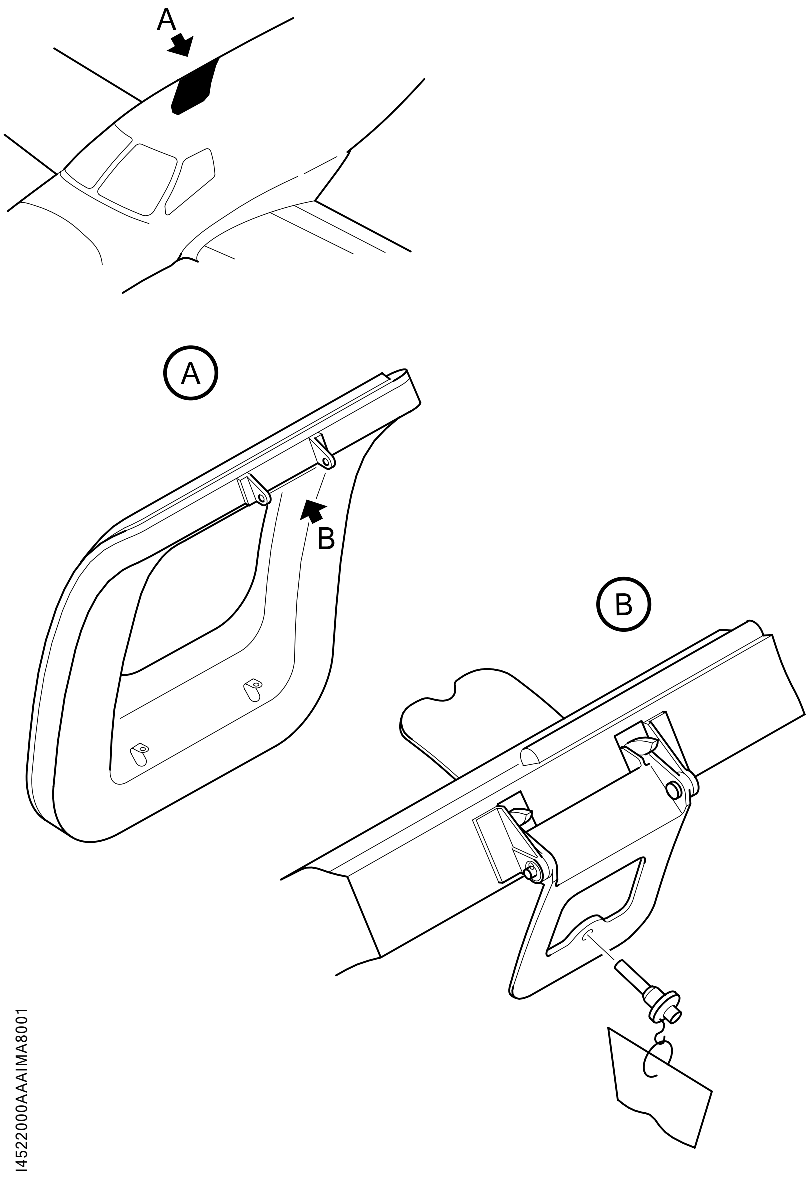
>> preMod: MOD70-0793-25

CAUTION

Before opening the emergency exit from the inside of the airplane, remove the upholstery panel of the emergency exit.
Using the two hands, pull firmly the upholstery panel through the access area to the opening handle – see Figure 7.3.15.

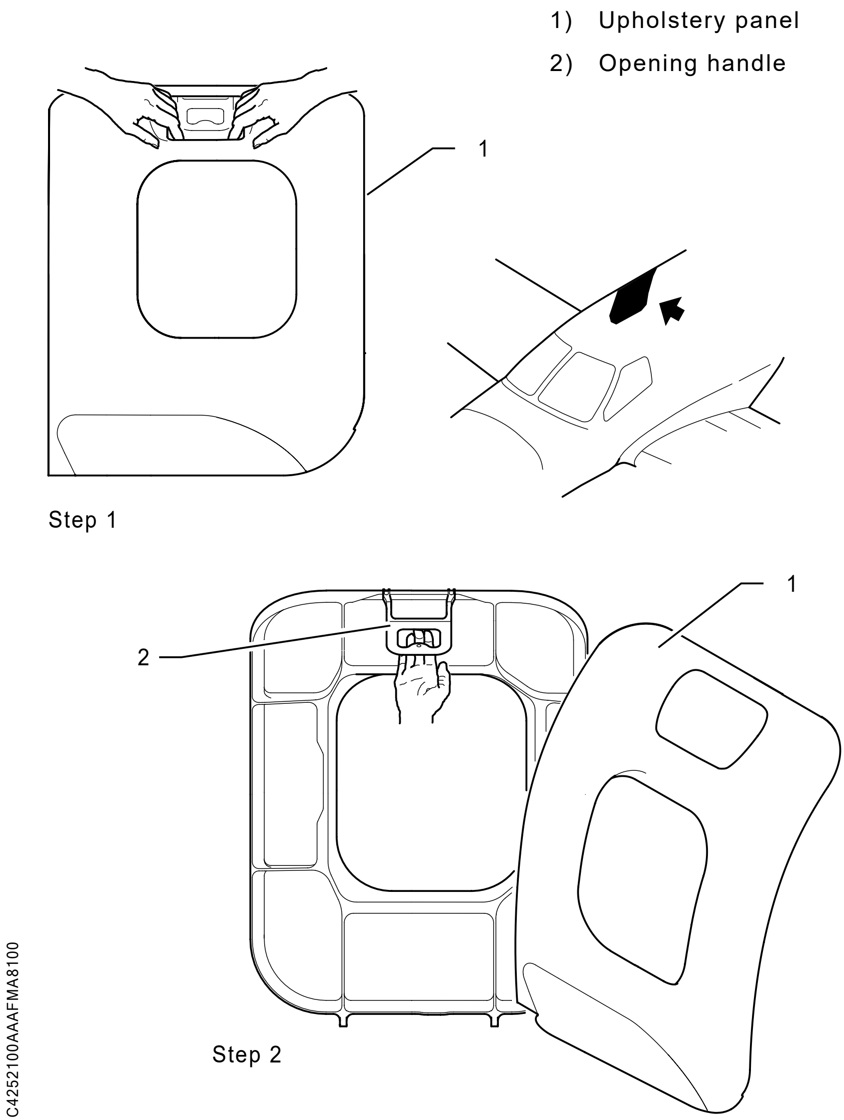
>> *All*

Figure 7.3.14 - Emergency Exit



>> preMod: MOD70-0793-25

Figure 7.3.15 - Removal of the Upholstery Panel of the Emergency Exit



>> *All*

Dimmable Windows, if installed

See Figure 7.3.16.

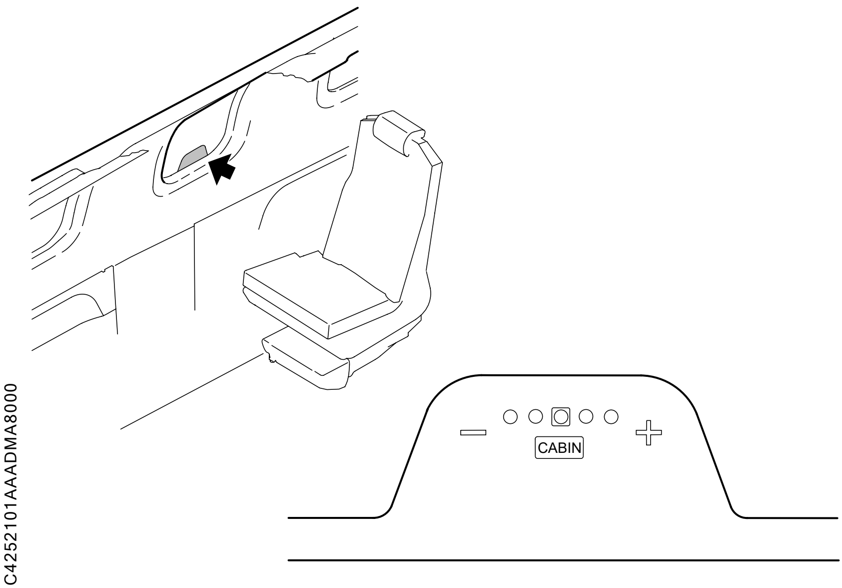
The airplane is equipped with dimmable windows. Passengers can individually set the opacity from 0% to 50% for visual comfort purpose through the control panel located at the bottom of each dimmable window.

By touching the CABIN marking of a control panel, a passenger can set all the dimmable windows simultaneously. After few seconds, the control panel turns off and the control mode of all dimmable windows returns to individual control.

The dimmable windows are electrically supplied by the BUS 4 bar and protected by the DIM WINDOWS breaker located on Frame C13bis.

When not powered, the dimmable windows are 50% shaded.

Figure 7.3.16 - Dimmable Windows Control



Seats, Belts and Harnesses

Heated Seats

See Figure 7.3.17 and Figure 7.3.18 .

Cockpit and cabin seats are equipped with a heating system for the comfort of pilot and passengers.

The system consists of:

- One heating element in the cushion and one heating element in the backrest of each seat,

>> preMod: MOD70-0800-00

- The SEATS HTRS MASTER switch located on the instrument panel,

>> All

>> postMod: MOD70-0800-00

- The SEATS HTRS MASTER pushbutton located on the instrument panel,

>> All

- HI/OFF/LOW three-position switch located on each cockpit and cabin seat,
- The seats heaters control box and relays located under the floor panel.

Each seat is equipped with a power supply wire with a connector. A clip attaches the connector to the seat to prevent damage during seat operation or seat storage.

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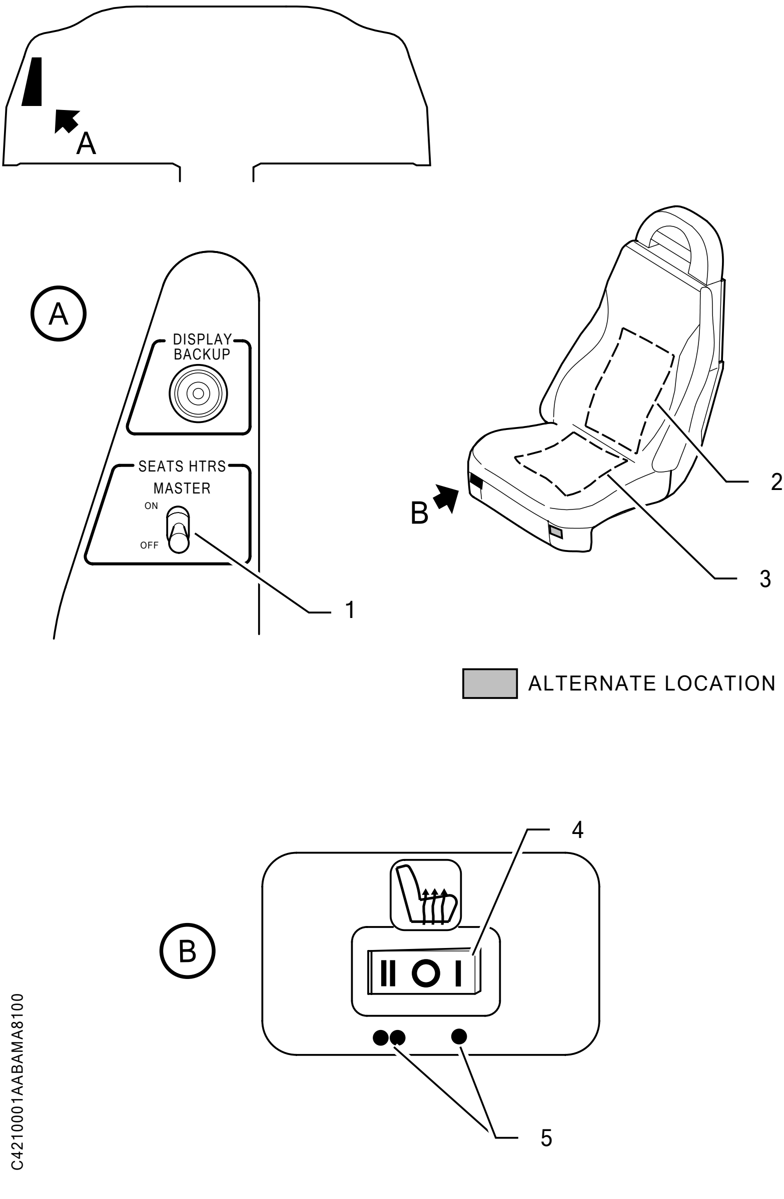
>> preMod: MOD70-0800-00

Key to Figure 7.3.17

1) SEATS HTRS MASTER switch
2) Backrest surface heating
3) Seat surface heating
4) HI/OFF/LOW three-position switch
5) Tactile marks

Figure 7.3.17 - Heated Seat



>> *All*

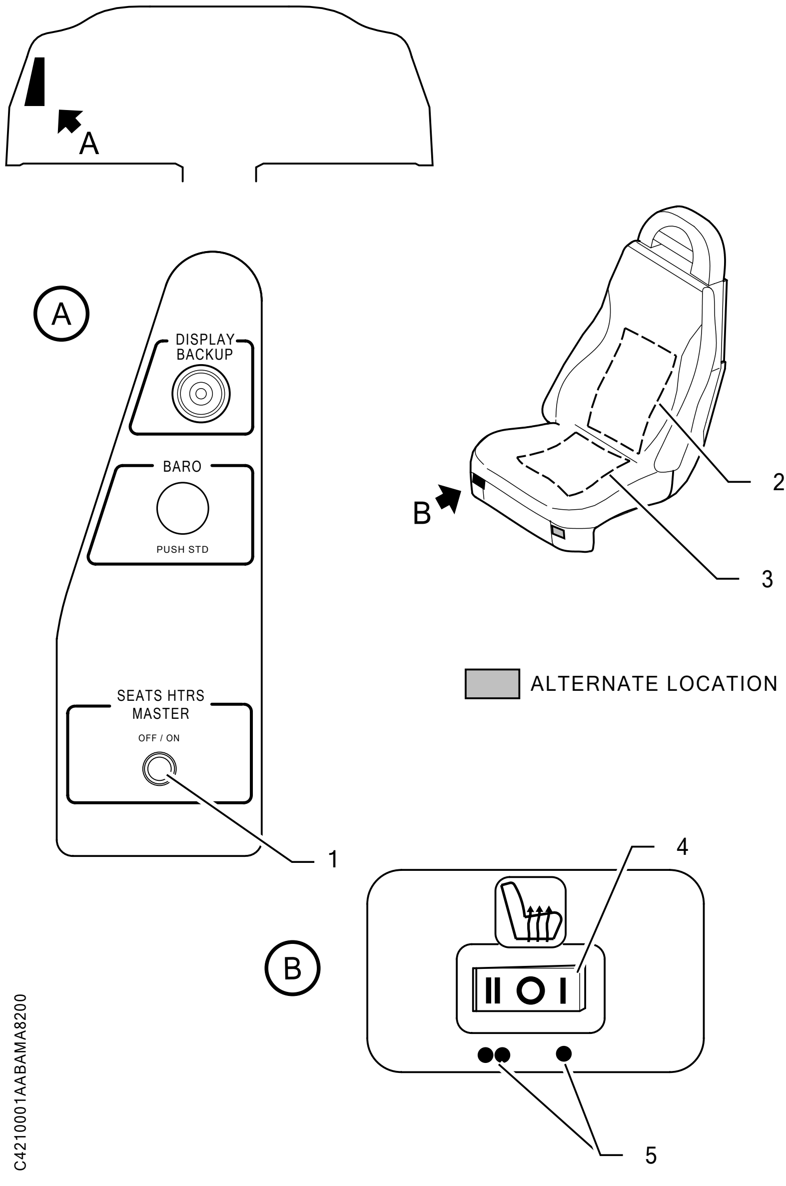
Intentionally left blank

>> postMod: MOD70-0800-00

Key to Figure 7.3.18

1) SEATS HTRS MASTER pushbutton
2) Backrest surface heating
3) Seat surface heating
4) HI/OFF/LOW three-position switch
5) Tactile marks

Figure 7.3.18 - Heated Seat



>> *All*

The seats heating is only available when the airplane is connected to a GPU or when the main generator is supplying power.

The system does not operate if GENERATOR selector is set to ST-BY.

>> preMod: MOD70-0800-00

The SEATS HTRS MASTER switch allows the pilot to enable or not the electrical supply of all seats heaters.

>> All

>> postMod: MOD70-0800-00

The SEATS HTRS MASTER pushbutton allows the pilot to enable or not the electrical supply of all seats heaters.

The table hereafter gives the status light colors corresponding to the state of the system.

System state	Status light
OFF position	
ON position	

>> All

Each seat is then individually controlled by the HI/OFF/LOW switch:

NOTE

Two tactile marks located under the HI/OFF/LOW switch enables to determine which position is selected.

- OFF position is obtained when the switch is in the central position. In this position the seat does not heat.
- HI position is obtained by positioning the switch to the right. In this position the seat heats at its maximum capacity.
- LOW position is obtained by positioning the switch to the left. In this position the seat heats less than HI position.

NOTE

In HI position, the heating sensation comes up after approximately three minutes.

To avoid overheating, each seat is equipped with thermal sensors which remove power supply in case of overtemperature detection.

Precaution of use of the seats heaters system:

- Do not place any sharp or heavy objects on the seat, as the seat heater could otherwise be damaged.
- Persons with an impaired sensitivity to heat should only operate the seat heater at low level.
- Do not place any heat insulating objects, such as blankets or coats, on the seat when the seat heater is switched on.
- The seat heater can be damaged by fluids spilt on the seat.
- Never switch the seat heater on when it is wet.

Cockpit Seats

See Figure 7.3.19.

Left-side and right-side front seats are mounted on rails attached to the structure. Longitudinal position, height and backrest tilting of each seat can be adjusted and the armrest is hinged.

Pull up the handle located forward for longitudinal setting.

The seat height is adjusted by pulling up side forward handle while relieving the seat from the body weight.

The seat back angle is adjusted by pulling up side rearward handle.

Passenger Seats

>> With 6-seat accommodation

See Figure 7.3.19.

The accommodation consists of:

- two individual seats, installed back to the flight direction, mounted on the same rails as the front seats. The seat back angle is adjusted by pulling up side handle.
- two rear seats arranged as a bench, mounted on the same rails as the front seats. The seat backrests tilt forward by pulling up the handle located forward on left side of each seat which may tilt forwards by pulling up a rear

handle to ease baggage loading in baggage compartment. For longitudinal setting pull up the handle located forward, on right side.

>> *With 4-seat accommodation*

See Figure 7.3.20.

The accommodation consists of:

- two individual seats, installed facing flight direction, mounted on the same rails as the front seats. The seat back angle is adjusted by pulling up side handle.

>> *All*

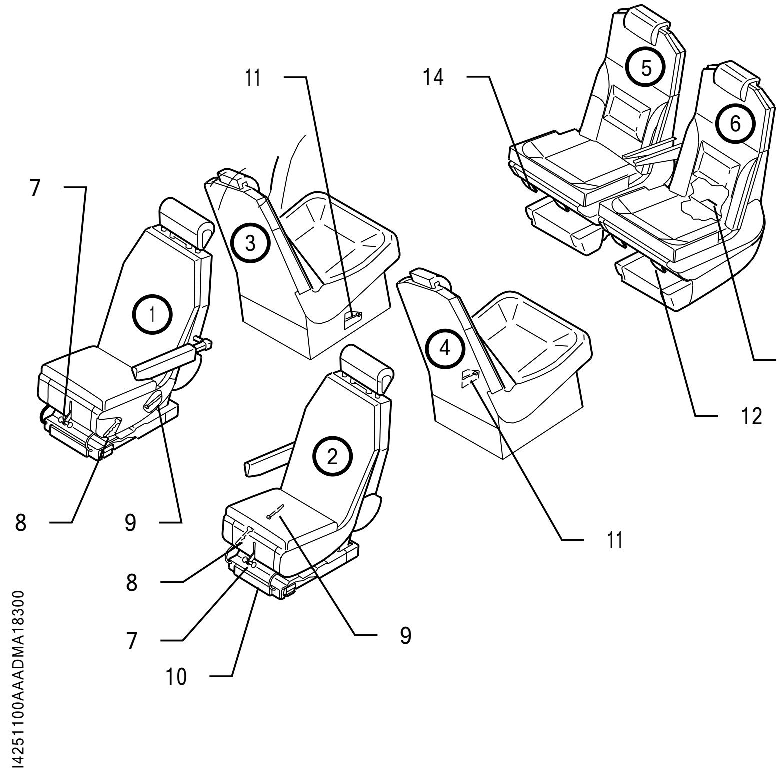
Key to Figure 7.3.19

1) Front passenger seat
2) Pilot seat
3) Right-side intermediate passenger seat, back to flight direction
4) Left-side intermediate passenger seat, back to flight direction
5) Right-side rear passenger seat - Rear bench
6) Left-side rear passenger seat - Rear bench
7) Front seat(s) longitudinal shift control
8) Front seat(s) height control
9) Front seat(s) backrest tilt control
10) Drawer for pilot's piddle pak, if installed (front side: new bags, rear side: used bags)
11) Intermediate seat(s) backrest tilt control
12) Rear bench seat(s) backrest tilt control
13) Rear bench Left-side seat tilt control
14) Rear bench seat(s) adjustment control handle

NOTE

To have access to the baggage compartment, pull forwards the backrest of rear bench left-side seat, then pull forwards control (Item 13) to tilt left-side seat assembly forwards. If necessary, pull forwards the backrest of rear bench right-side seat.

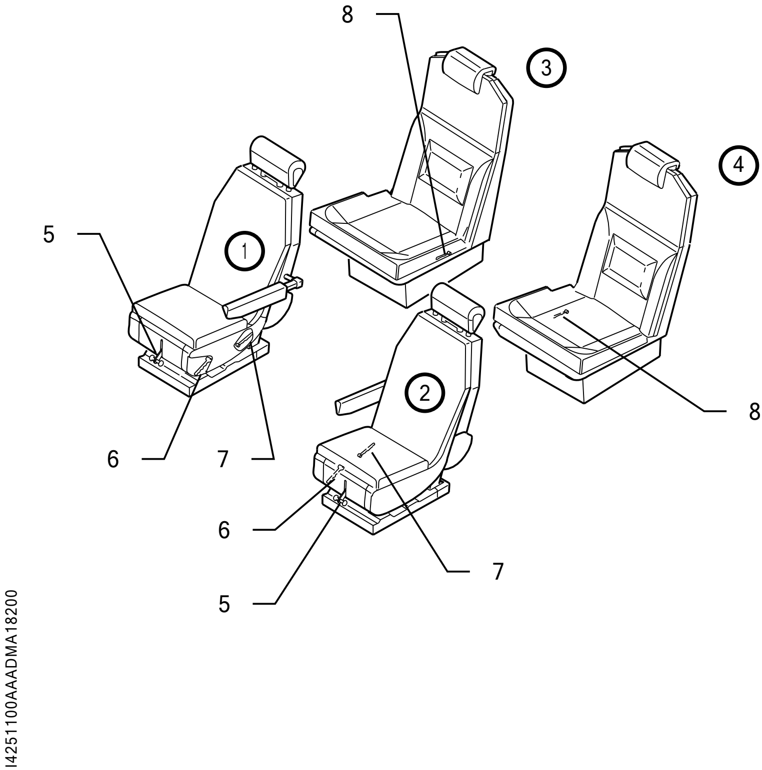
Figure 7.3.19 - Seats – 6-Seat Accommodation



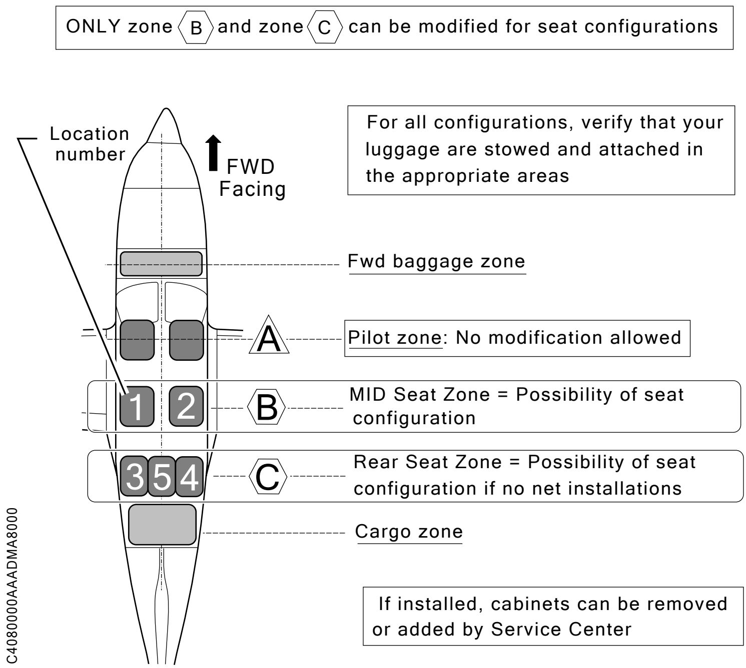
Key to Figure 7.3.20

1) Front passenger seat
2) Pilot seat
3) Right-side intermediate passenger seat, facing flight direction
4) Left-side intermediate passenger seat, facing flight direction
5) Front seat(s) longitudinal shift control
6) Front seat(s) height control
7) Front seat(s) backrest tilt control
8) Intermediate seat(s) backrest tilt control

Figure 7.3.20 - Seats – 4-Seat Accommodation



Many accommodations are possible. They are described hereafter



For the MID Seat zone B

ONLY the Middle Seats can be installed in MID Seat Zone.
This Zone accepts Fwd and Aft Facing MID Seat when rear seats are installed.

The zone B accepts zero or 1 or 2 seats.

(The zone B is not a luggage area).

Location number	FWD Facing	AFT Facing	Number of seat can be installed
1	YES	YES	1 or 0
2	YES	YES	1 or 0

For the REAR Seat zone C

ONLY the Rear Seat can be installed in Rear Seat Zone.

The zone C accepts zero or 1 or 2 seats.

Location number	FWD Facing	Number of seat can be installed
3	YES	1 or 0
4	YES	1 or 0
5 *(1)	YES *(1)	1 or 0 *(1)

*(1) Centered on the fuselage axis

Here are all the configurations possibilities (see figure above)

Configuration name	Location number				
	1	2	3	4	5
C1	X	X	X	X	
C2 (2)	X	X			X
C3	X	X		X	
C4 (1)	X	X			
C5	X	X	X		
C6	X		X	X	
C7	X		X		
C8	X			X	
C9 (2)	X				X
C10 (1)	X				
C11		X	X	X	
C12 (2)		X			X
C13		X	X		
C14		X		X	
C15 (1)		X			
C16			X	X	
C17			X		
C18				X	
C19 (2)					X
C20 (1)					
	Zone B		Zone C		

(1) This configuration accepts small net or large net

(2) In this position, the seats heaters system cannot be connected to the rear seat.

Each cross indicates that a seat is installed at the corresponding location number.

Belts and Harnesses

See Figure 7.3.21, Figure 7.3.22 and Figure 7.3.23.

WARNING

Incorrect closure of the safety belt may introduce a risk. Make sure it is tightened when buckled. To be most efficient, the belt must not be twisted. Check that there is no constraint when operated. After an accident, replace all belts.

Each cockpit seat is equipped with a four-point restraint system consisting of an adjustable lap belt and a dual-strap inertia reel-type shoulder harness with airbags, if installed.

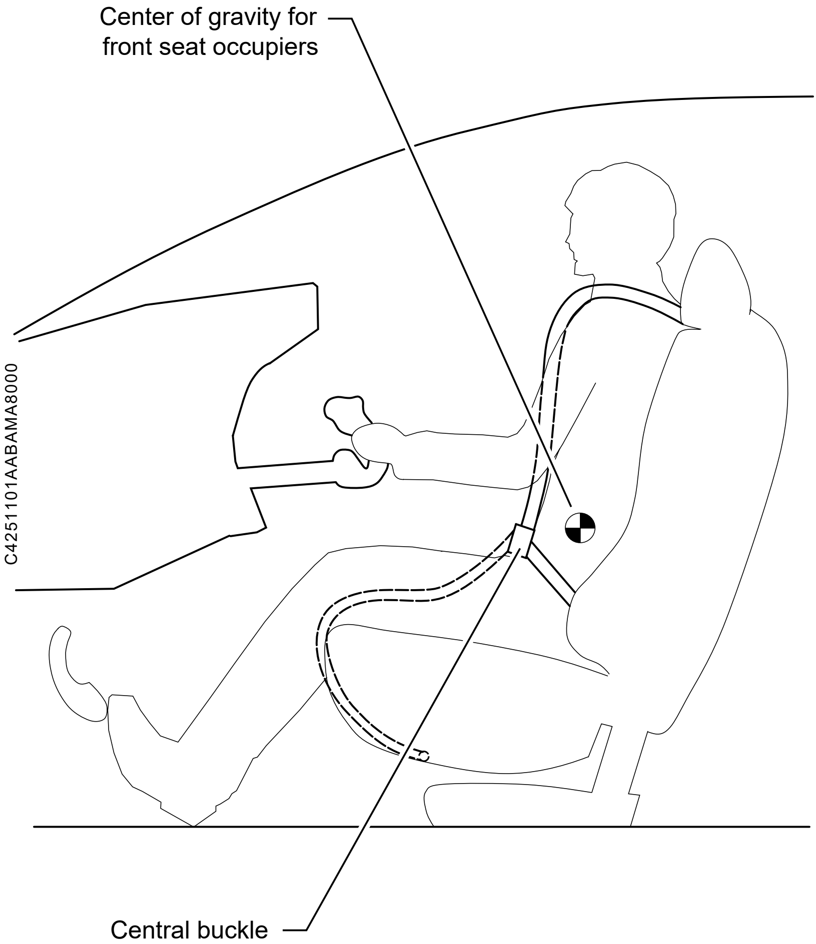
Airbags, if installed, are inflated by two inflators located under the backrest fairing, which are activated by an accelerometer fixed under the floor panel in front of the seat.

The two cockpit seats are equipped with a buckle positioner that enables the central buckle to be positioned correctly. The length of the buckle positioner is adjustable using the self-gripping area of the strap. Each occupier of cockpit seats must check that the buckle positioner is properly adjusted.

WARNING

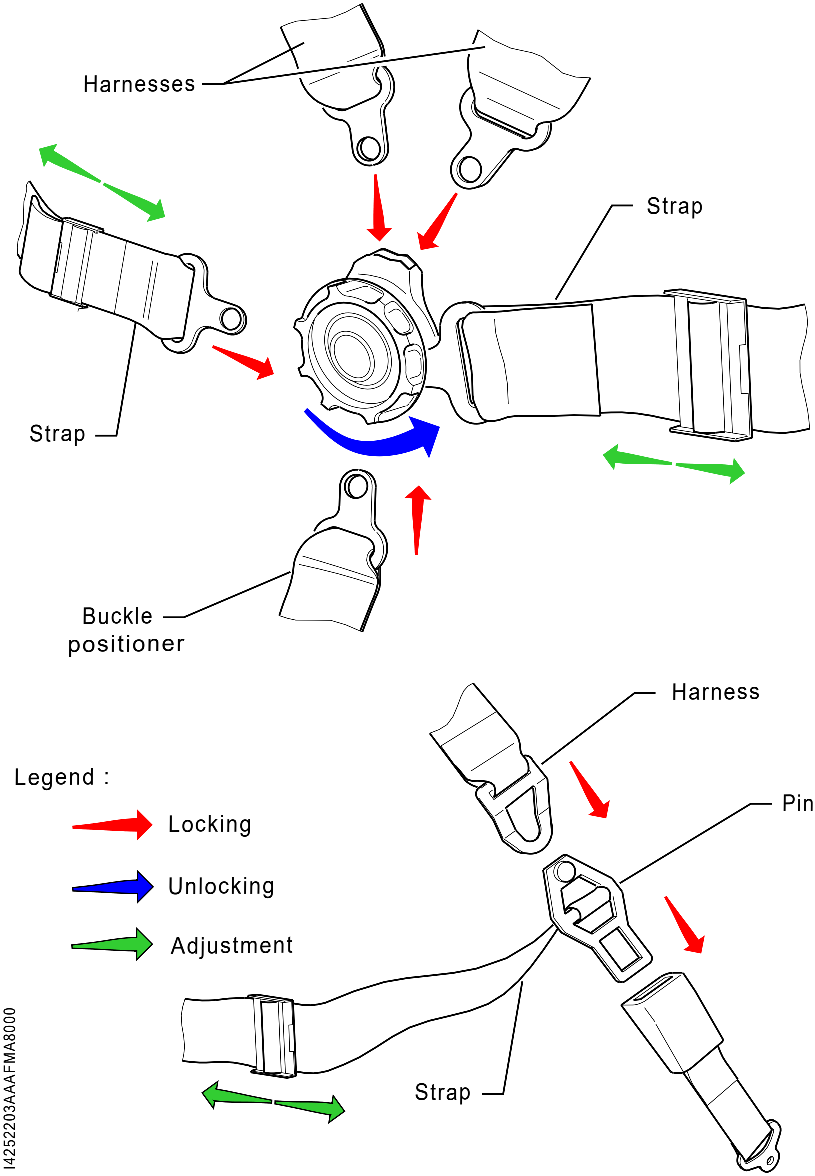
The central buckle must be positioned so that the belt straps remain at hip level (just below the center of gravity) to prevent the body from slipping under the belts.

Figure 7.3.21 - Correct pre-Positioning of the Buckle



Each passenger seat is equipped with a three-point restraint system consisting of an adjustable lap belt and an inertia reel-type shoulder harness.

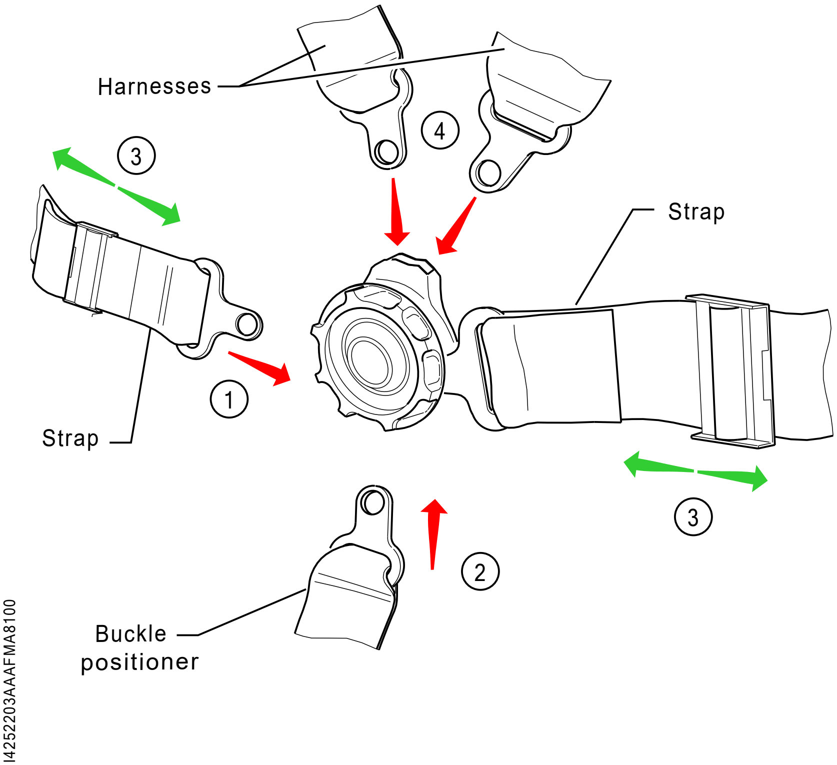
Figure 7.3.22 - Front and Rear Seat Belts with Movable Straps and Harnesses



Fastening the Seat Belts on Front Seats

1. Fasten the belt straps,
2. Fasten the buckle positioner in the buckle and adjust its length so that the belt straps remain at hip level,
3. Adjust the belt straps,
4. Fasten and adjust the harnesses.

Figure 7.3.23 - Fastening the Seat Belts on Front Seats



Baggage Compartments

>> With 6-seat accommodation

There are two baggage compartments:

- An AFT compartment located in the pressurized cabin between rear passenger seats and rear pressure bulkhead.
- A FWD compartment (non-pressurized) located between firewall and fwd pressure bulkhead.

The AFT compartment is accessible through the cabin by tilting forward the left-side rear seat and/or left-side or right-side rear seat back-rests. Rings fitted with lashing straps are provided for securing parcels and baggage on compartment floor.

The FWD compartment is accessible by opening the external door located on the left side of the airplane.

These locations are designed for the carrying of low density loads; loading and unloading must be carried out with caution to avoid any damage to airplane.

The cabin is separated from the baggage compartment by a partition net intended to protect the passengers from injuries that could be caused by improper tie-down of a content.

The partition net is mounted at Frame C14 – see Figure 7.2.1, it is secured at the bottom to 4 points of the floor and on the sides to 6 points of the structure.

Maximum loads allowable in the baggage compartments depend on airplane equipment – refer to Subsection 6.3. Baggage Loading.

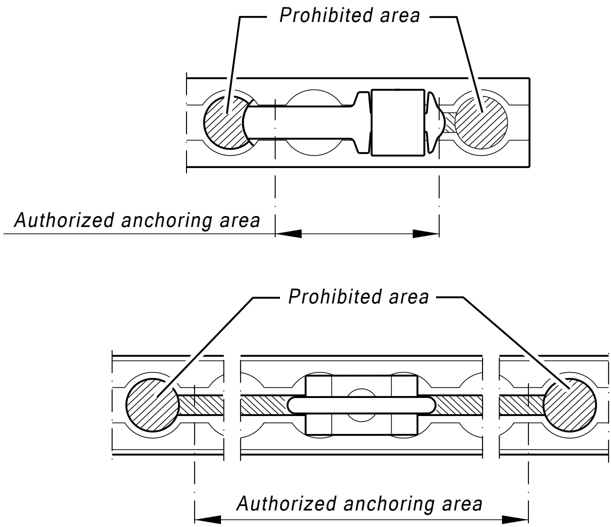
WARNING

Any parcel or baggage must be stowed by straps.
It is the pilot's responsibility to check that all parcels and baggage are properly secured in the cabin.
Transport of dangerous products/materials is normally prohibited, however if transport of such products/materials is necessary, it must be performed in compliance with regulations concerning transport of dangerous products/materials and any other applicable regulation.

>> With 4-seat accommodation

Two cargo nets are available for the pilot to safely secure and transport baggage:

- the small cargo net is attached through nine anchoring points on seat rails, between Frame C11 and Frame C13bis – see Figure 7.2.3.



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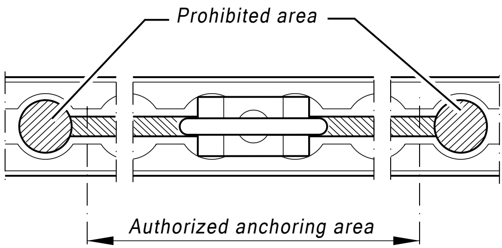
- the large cargo net is attached through seven anchoring points on seat rails, between Frame C11 and Frame C13bis and six anchoring points on fuselage sides, at Frame C14 – see Figure 7.2.2.

NOTE

Original partition net must be disconnected from side walls and placed on the floor.



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Authorized anchoring points are identified with green self-adhesive labels affixed to the inside of the seat rail.

A placard indicates loading limits for each cargo net:

- for the small cargo net, it is affixed on Frame C13bis,
- for the large cargo net, it is affixed on right side upholstery panel, in the rear baggage compartment.

Maximum loads allowable in the baggage compartments depend on airplane equipment – refer to Subsection 6.3. Baggage Loading.

WARNING

Any parcel or baggage must be stowed by cargo net and straps.
It is the pilot's responsibility to check that all parcels and baggage are properly secured in the cabin.
Transport of dangerous products/materials is normally prohibited, however if transport of such products/materials is necessary, it must be performed in compliance with regulations concerning transport of dangerous products/materials and any other applicable regulation.

Use of Cargo Nets

Net Inspection

Before each use, visually inspect net for:

- webbing condition,
- seam condition of tensioning strap,
- metallic part condition.

Installation Instructions

Tensioning straps must be installed so that they make a V with a minimum angle of 40° between both strands attached on the net. The net must be properly tight.

Damage Acceptance Criteria

If any damage is detected, such as:

- damage or absence of hook, buckle or stud on tensioning strap: strap must **mandatorily** be discarded and replaced,
- webbing frayed or cut on less than 30% of its surface: reduce maximum load by 50%,
- seam of vertical net tensioning straps damaged on less than 30% of its length: reduce maximum load by 50%,
- seam of tensioning straps attached on the rails damaged on less than 30% of its length: reduce maximum load by 50%,

- beyond 30% damage for above-mentioned cases, defective element must mandatorily be discarded and replaced,
- netting cut or torn on less than 3.9 in (100 mm): still serviceable, no impact,
- netting cut or torn on more than 3.9 in (100 mm): do not carry small objects which dimensions are smaller than 4.9 x 4.9 x 4.9 in (125 x 125 x 125 mm).

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7.4 - Flight Controls

Flight controls consist of roll, pitch and rudder controls, as well as roll trim tab, pitch trim tab and rudder trim tab controls.

NOTE

During airplane parking, it is recommended to lock flight controls – see Figure 8.6.2.

Roll

See Figure 7.4.1 and Figure 7.4.2.

The roll control is activated by an assembly of rods and cables which links control wheels with the ailerons and the spoilers.

Aileron displacement is combined with that of spoilers, located at upper surface of each wing forward of flaps.

The spoiler rises from wing upper surface profile, when the aileron is deflected upwards and remains in wing profile, when the aileron is deflected downwards.

Control wheel movement is transmitted through rods to fuselage roll lever located under the floor. The movement is then transmitted through cables to the spoiler mechanism and from the spoiler mechanism to wing roll lever which activates the aileron through a rod.

A rudder / roll combination spring-type system induces roll deflection at the time of pedals movement and vice versa.

Roll Trim

See Figure 7.4.3 and Figure 7.4.4.

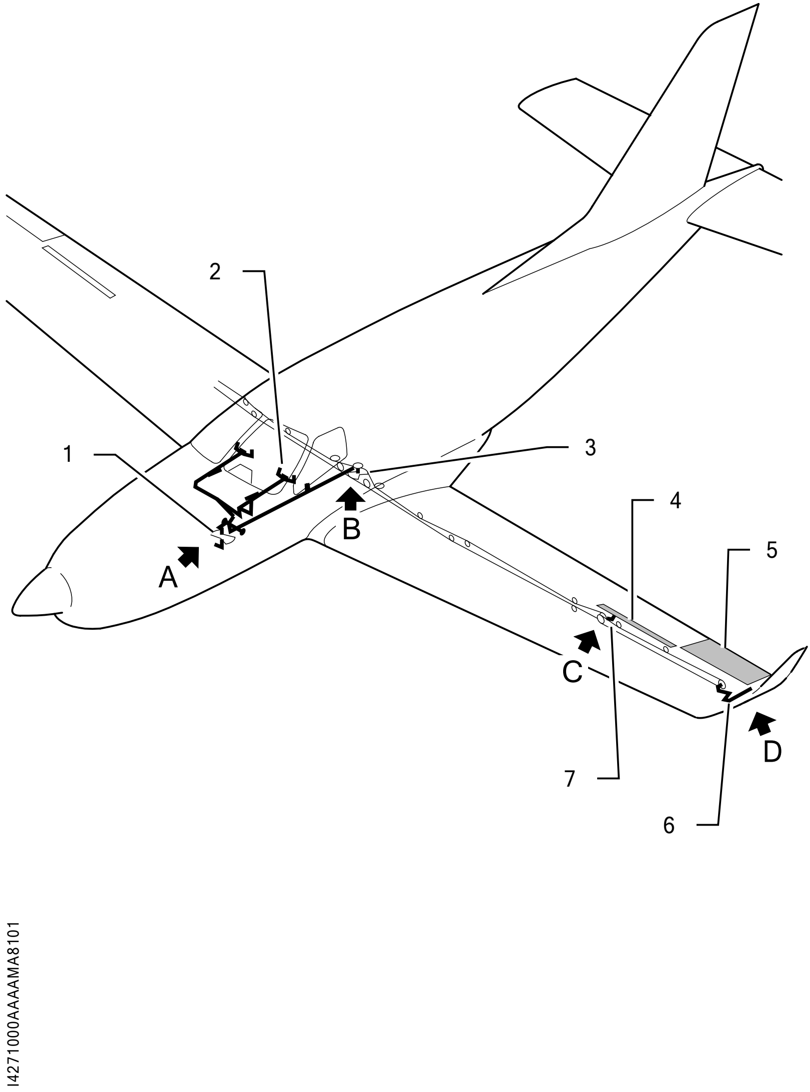
The roll trim is controlled by a trim tab attached at the trailing edge of left-side aileron. The trim tab is connected through two links to an electric actuator located in the aileron. A trim switch located on pedestal controls the roll trim tab maneuver.

Roll trim tab electrical circuit is protected by the AIL TRIM breaker.

Key to Figure 7.4.1

1) Pedestal assembly
2) Control wheels
3) Fuselage roll lever
4) Spoiler
5) Aileron
6) Aileron control in wing
7) Spoiler control

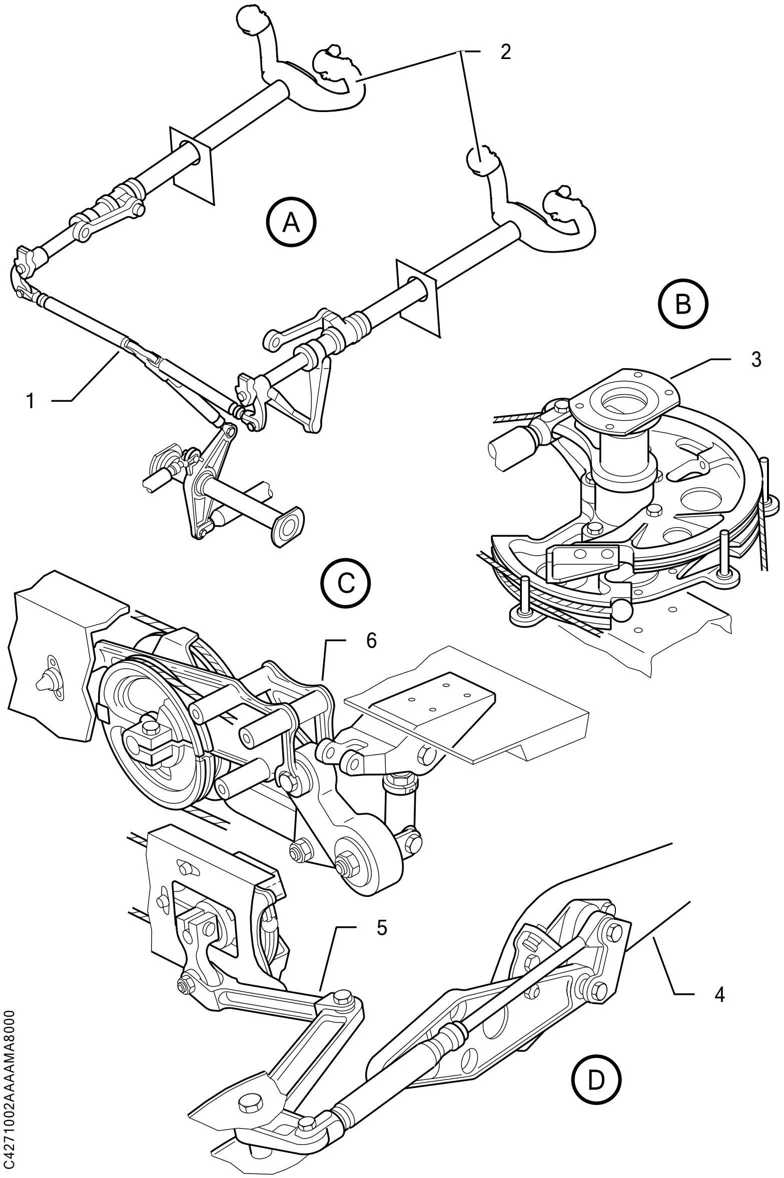
Figure 7.4.1 - Roll (1/2)



Key to Figure 7.4.2

1) Pedestal assembly
2) Control wheels
3) Fuselage roll lever
4) Aileron
5) Aileron control in wing
6) Spoiler control

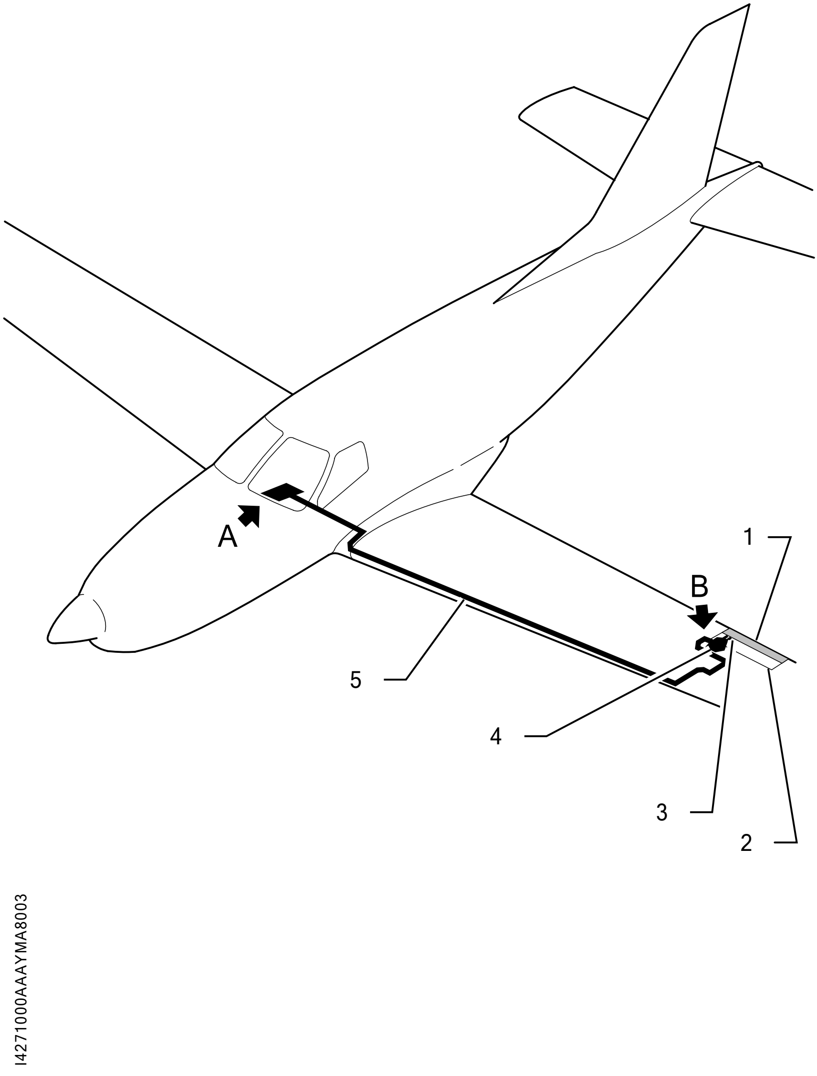
Figure 7.4.2 - Roll (2/2)



Key to Figure 7.4.3

1) Roll trim tab
2) Aileron
3) Adjustable rods
4) Actuator
5) Trim tab control wiring

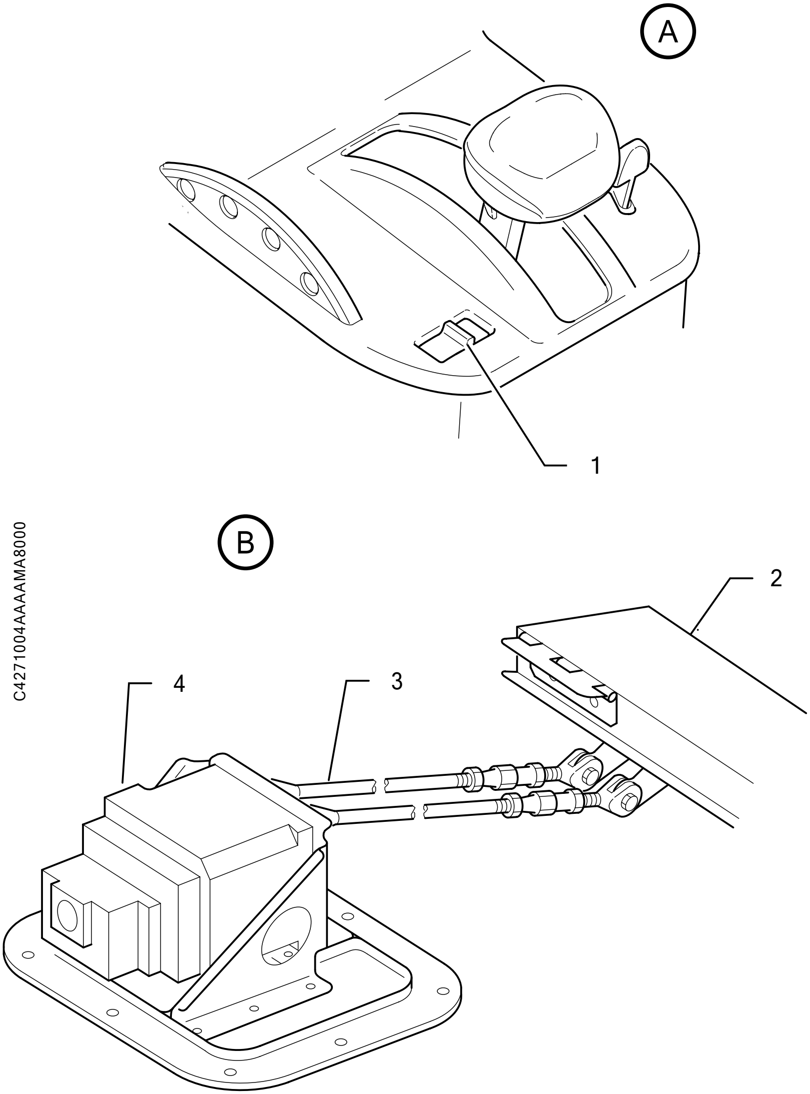
Figure 7.4.3 - Roll Trim (1/2)



Key to Figure 7.4.4

1) Trim switch on pedestal console
2) Roll trim tab
3) Adjustable rods
4) Actuator

Figure 7.4.4 - Roll Trim (2/2)



Elevator

See Figure 7.4.5 and Figure 7.4.6.

Both elevators are activated simultaneously by the same control. Each control surface is hinged at three points to the rear part of horizontal stabilizer.

The control wheel controls the two elevators through rods, bearings and bellcranks.

A stick shaker is fixed on the pitch lever linked to the pilot control column lever. This is a mechanical device to vibrate the control wheel to warn the pilot in case of an imminent stall. When the data received from the AoA (angle of attack) sensor indicates an imminent stall, the AoA computer actuates both the stick shaker and the stall warning.

A spring actuator creates a nose-down artificial force which allows a better static stability.

Each control surface is provided with an automatic anti-tab (automaticity about 0.3), which is also used as trim tab.

Pitch Trim

See Figure 7.4.7 and Figure 7.4.8.

The pitch trim is accomplished through the two anti-tabs located on left and right elevators.

The trim tab can be controlled electrically or manually. It is activated through cables and a chain on two screw actuators attached to the horizontal empennage.

The electrical control consists of a switch (NOSE UP - NOSE DOWN) located on the pilot control wheel and a servo-motor attached under the pedestal.

The electrical circuit for pitch trims is protected by the AP SERVOS breaker.

Manual control wheel is installed vertically on left side of pedestal console.

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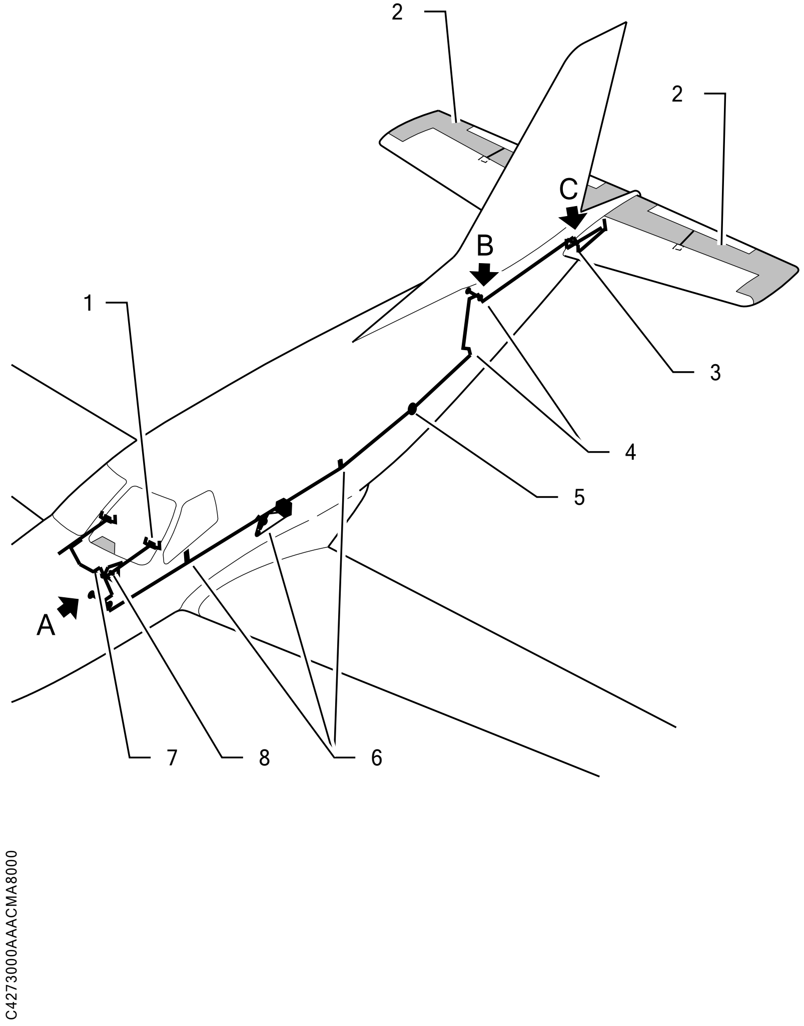
Key to Figure 7.4.5

1) Control wheel assembly
2) Elevators
3) Lever assembly, fuselage rear part
4) Elevator bellcrank
5) Rod with presseal connection
6) Lever assembly under floor
7) Pedestal assembly
8) Stick shaker

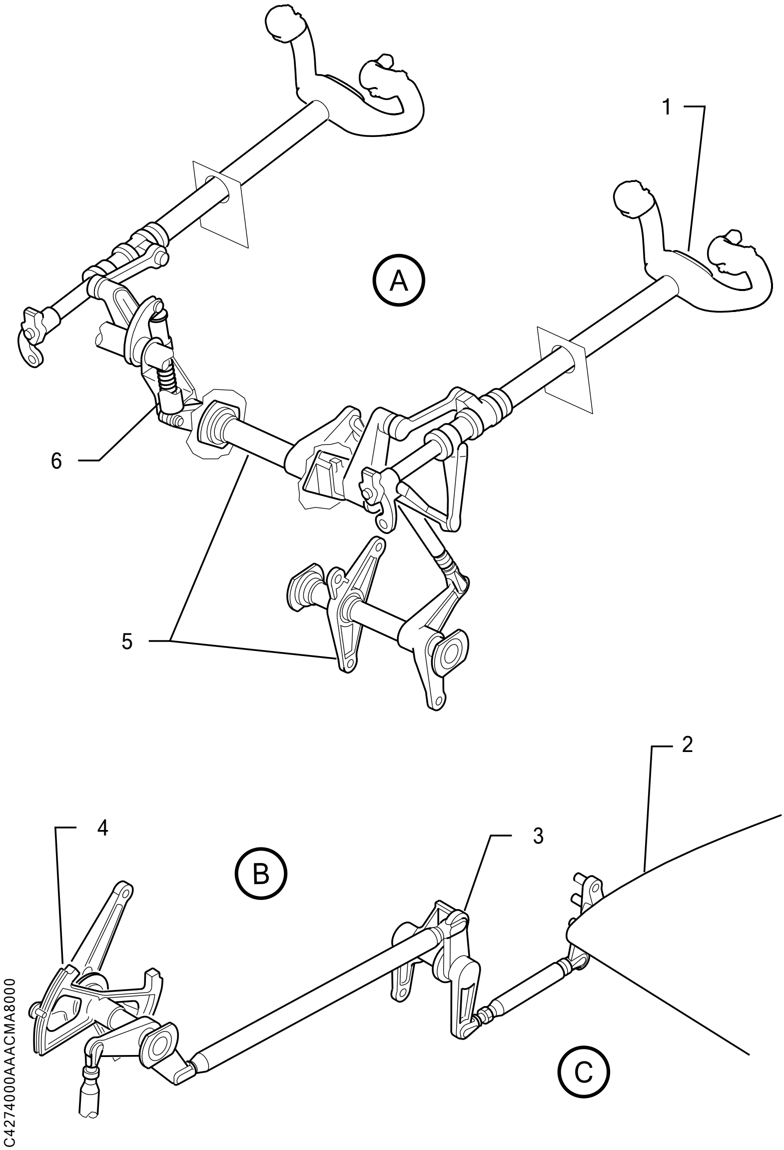
Figure 7.4.5 - Elevator (1/2)



Key to Figure 7.4.6

1) Control wheel assembly
2) Elevators
3) Lever assembly, fuselage rear part
4) Elevator bellcrank
5) Pedestal assembly
6) Actuator

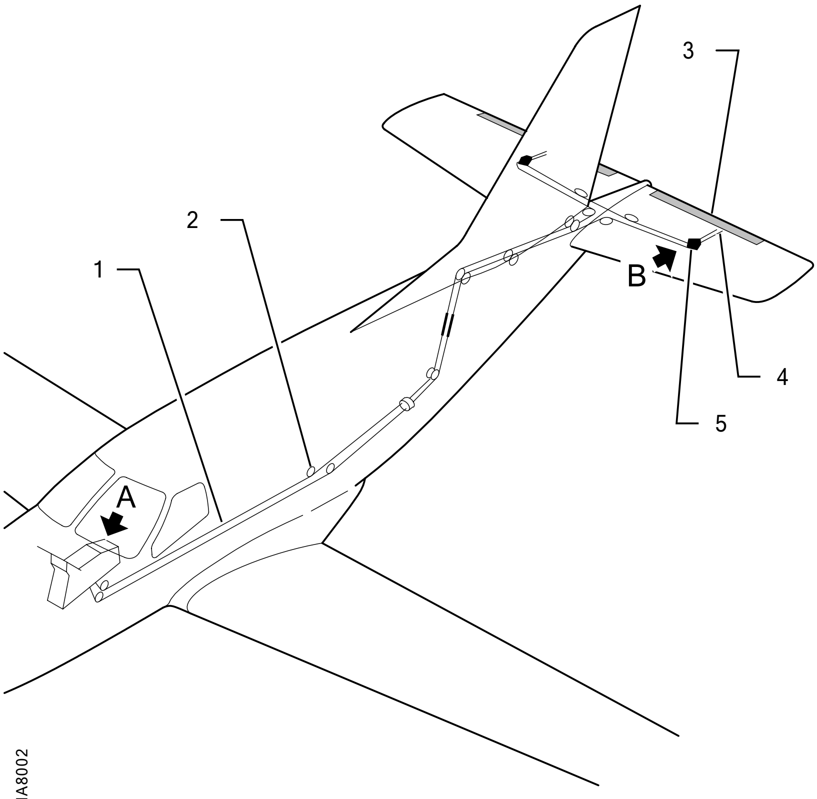
Figure 7.4.6 - Elevator (2/2)



Key to Figure 7.4.7

1) Cables
2) Pulleys
3) Pitch trim tabs
4) Actuating rods
5) Actuator

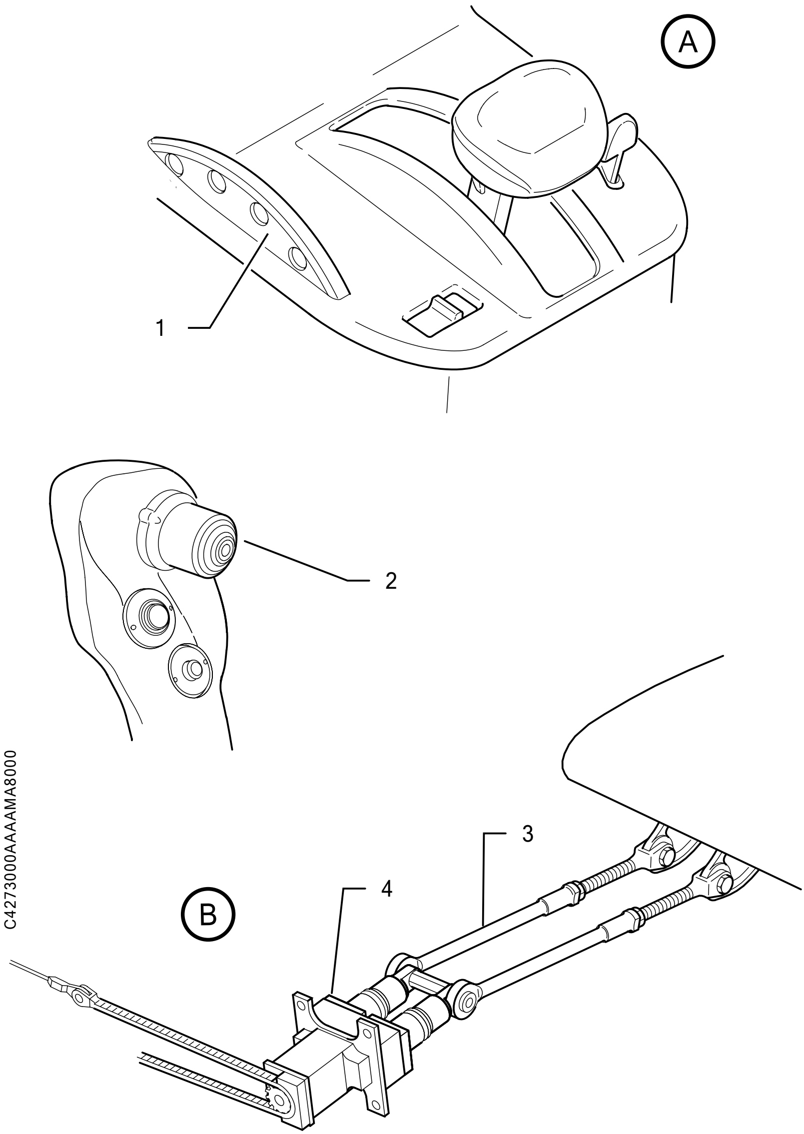
Figure 7.4.7 - Pitch Trim (1/2)



Key to Figure 7.4.8

1) Pitch trim manual control wheel
2) Electric pitch trim control
3) Actuating rods
4) Actuator

Figure 7.4.8 - Pitch Trim (2/2)



Rudder

See Figure 7.4.9 and Figure 7.4.10.

The rudder is hinged on three fittings attached to the vertical stabilizer rear spar.

The rudder pedals / rudder linkage is ensured through cables and a rod.

Pilot and front pasenger's station rudder pedal positions are adjustable at each station. The rudder pedal adjustment mechanism (for piloting comfort purposes) includes a manual control located against the external bulkhead beneath the instrument panel and a locking device on the rudder pedals. This ball locking device allows selecting six different positions.

When landing gear is down, rudder pedals are linked to nose gear steering system.

Spring system of rudder / roll combination induces aileron deflection at the time of pedal displacement and vice versa.

Rudder Trim

See Figure 7.4.11 and Figure 7.4.12.

A trim tab hinged at two points located at rudder trailing edge provides rudder trim.

Trim tab is linked by two rods to an electric actuator attached to rudder. It is controlled by rudder trim switch (Y L / Y R) located on pilot control wheel.

Electrical circuit of rudder trim tab is protected by RUD TRIM breaker.

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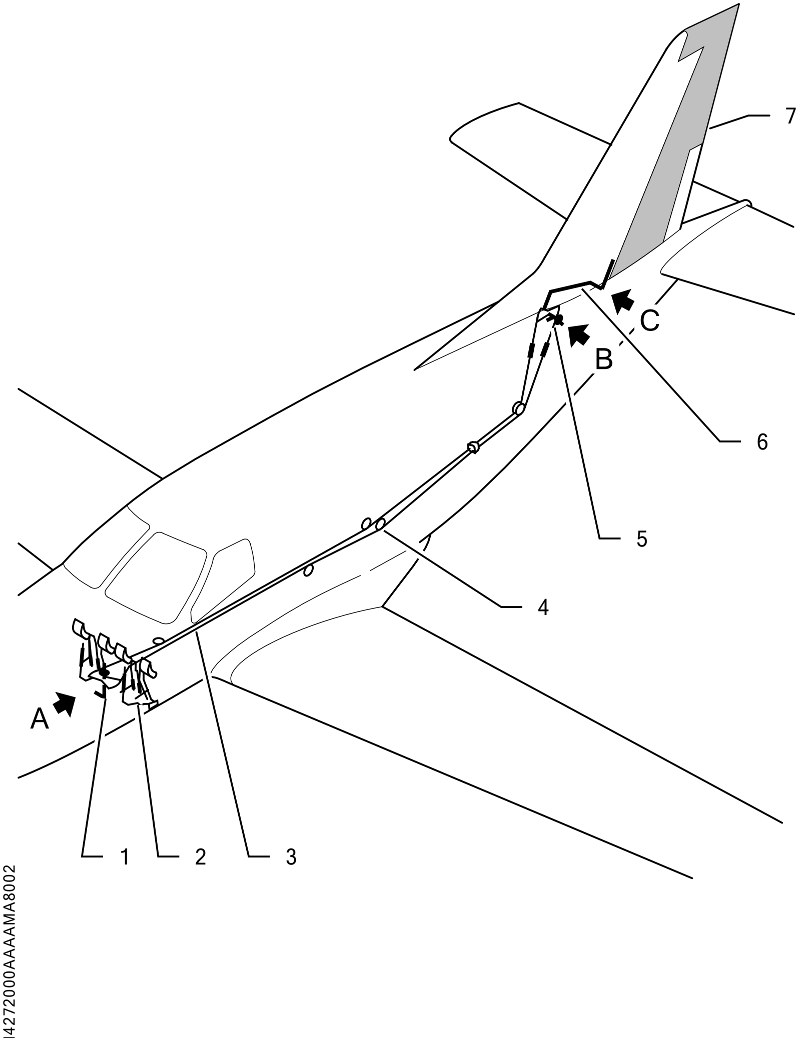
Key to Figure 7.4.9

1) Roll / rudder combination bellcrank installation
2) Rudder pedals assembly
3) Control cables
4) Pulleys
5) Rudder lever assembly
6) Rod
7) Rudder

Figure 7.4.9 - Rudder (1/2)



Key to Figure 7.4.10

1) Roll / rudder combination bellcrank installation
2) Rudder pedals assembly
3) Rudder
4) Rudder lever assembly
5) Nose gear steering rod
6) Rod

Figure 7.4.10 - Rudder (2/2)

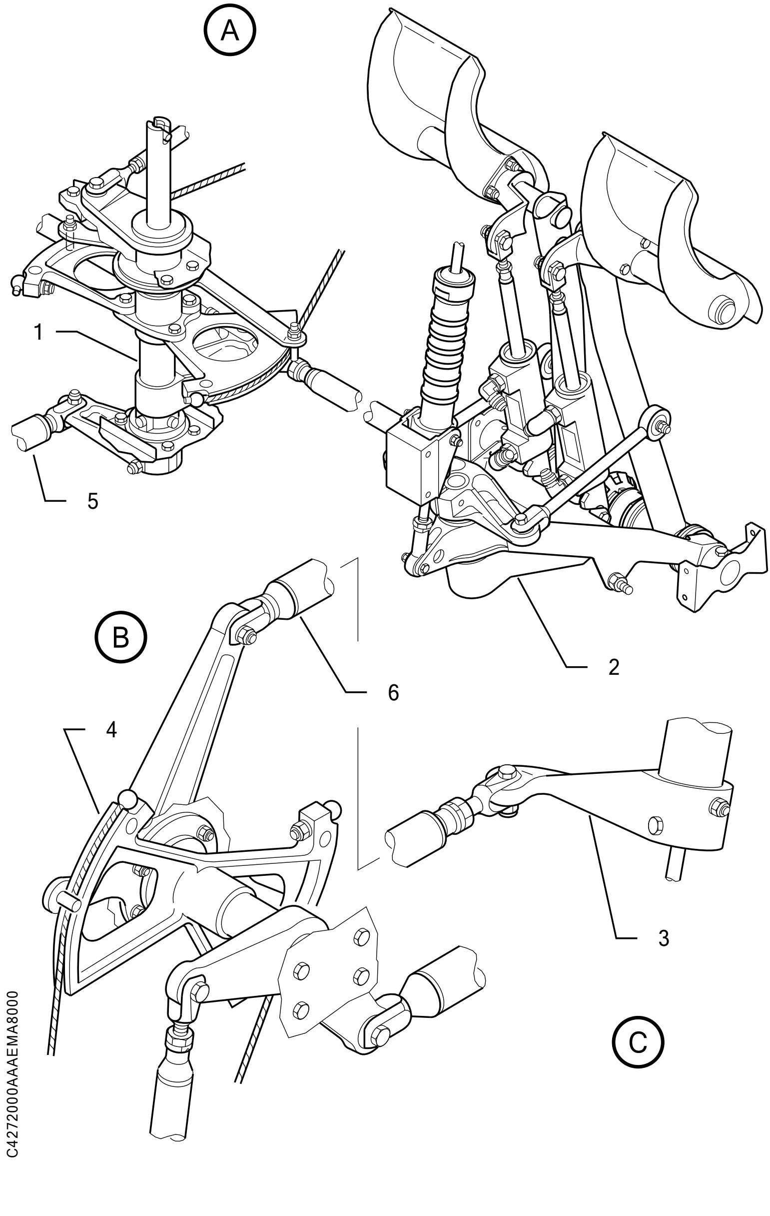
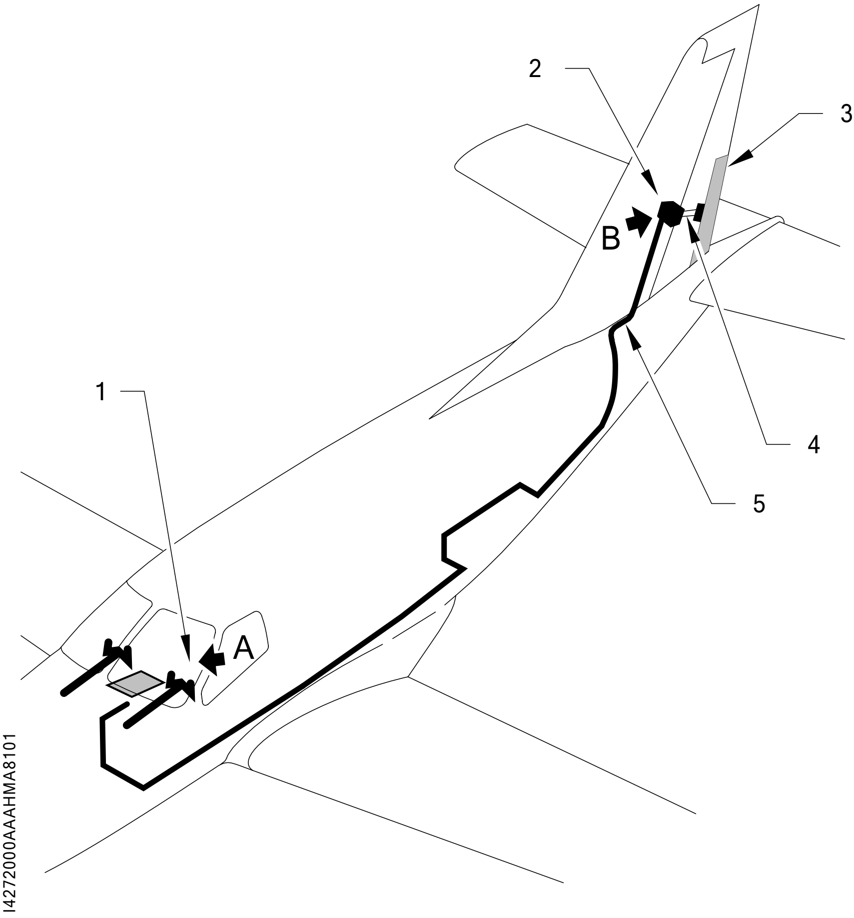


Figure 7.4.11 - Rudder Trim (1/2)

1) Trim switch on control wheel
2) Actuator
3) Rudder trim tab
4) Rods
5) Rudder trim control wiring



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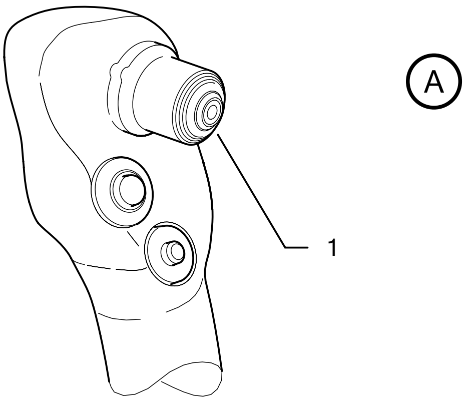
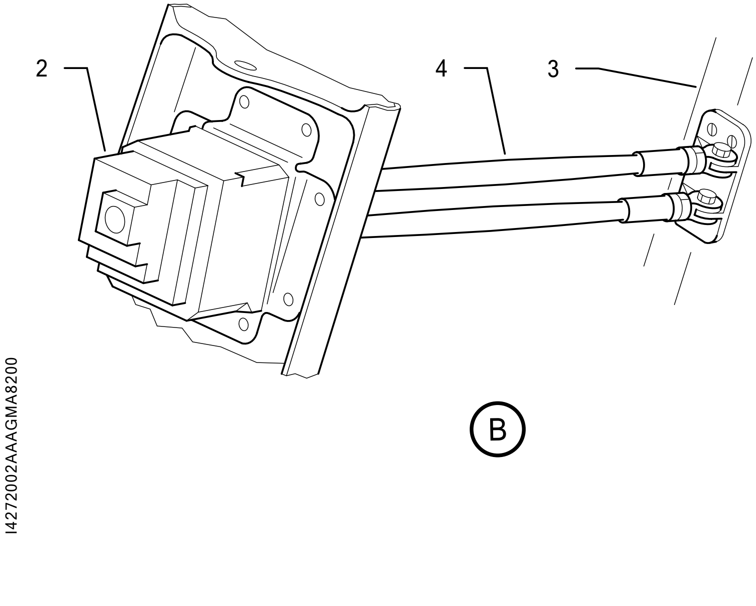
Key to Figure 7.4.12

1) Trim switch on control wheel
2) Actuator
3) Rudder trim tab
4) Rods

Figure 7.4.12 - Rudder Trim (2/2)





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7.5 - Landing Gear

The airplane is equipped with an electro-hydraulically actuated, fully retractable tricycle landing gear.

Each landing gear is equipped with one wheel and an oil-air shock absorber integrated in the strut.

The **main landing gears** swivel on two ball joints installed on wing spars. Each landing gear retracts toward airplane centerline. The operation is accomplished by a hydraulically actuated cylinder, which also provides up and down locking.

The **nose gear** swivels on two ball joints installed on a tubular steel mount frame. Its operation is performed by a hydraulically actuated cylinder, which also provides up and down locking. The nose wheel is steerable. It is connected to pedals through a spring rod and is provided with a shimmy damper. In up position, the nose wheel is automatically disconnected.

Actuating cylinders have a locking device integrated at both ends. This device maintains the landing gear in up or down position.

Landing gear doors – two on the nose gear, two on each main landing gear – are driven and maintained in the up position by the landing gear itself.

All doors are mechanically kept in the down position.

Hydraulic Pressure

Hydraulic pressure required for landing gear operation is provided:

- during normal operation by an electro-hydraulic generator with integrated reservoir,
- during emergency extension operation by a hand pump supplied with an auxiliary reservoir.

Landing Gear Lever

See Figure 7.5.1.

The LANDING GEAR lever is located on the LANDING GEAR panel at the bottom of the instrument panel's left portion. It actuates an electric selector that controls the hydraulic generator. At the end of this lever is a knob that represents a wheel. Raising and lowering of the landing gear is performed by pulling on the lever and moving it to either the UP (retracted) or DN (extended) position.

Landing Gear Position Indicator

See Figure 7.5.1.

Landing gear position indication is indicated by:

- Five lights on the LANDING GEAR control panel
  - . Three green indicator lights (one per landing gear),
  - . One red warning light GEAR UNSAFE,
  - . One amber light in the LANDING GEAR lever.
- The GEAR UNSAFE CAS message.

NOTE

The amber light flashes while the hydraulic pump is operating during the landing gear’s extension or retraction.

A correctly downlocked landing gear is confirmed when:

- the three green indicator lights are ON,
- the GEAR UNSAFE red warning light is OFF,
- the GEAR UNSAFE CAS message is OFF, and
- the amber caution light is OFF.

Any other combination indicates that the gear is not downlocked.

If there is uncertainty about the landing gear being correctly in the downlocked position, an independent electrical circuit provides a countercheck capability of the indication system. Pressing the CHECK DOWN pushbutton – located on the LANDING GEAR panel – checks the gear's correct downlock, which is shown when the green indicator lights that correspond to the downlocked gear are flashing at a rate of 16 hertz.

Pressing the LIGHT TEST pushbutton enables the testing of all LANDING GEAR panel lights, which will flash at a rate of one hertz.

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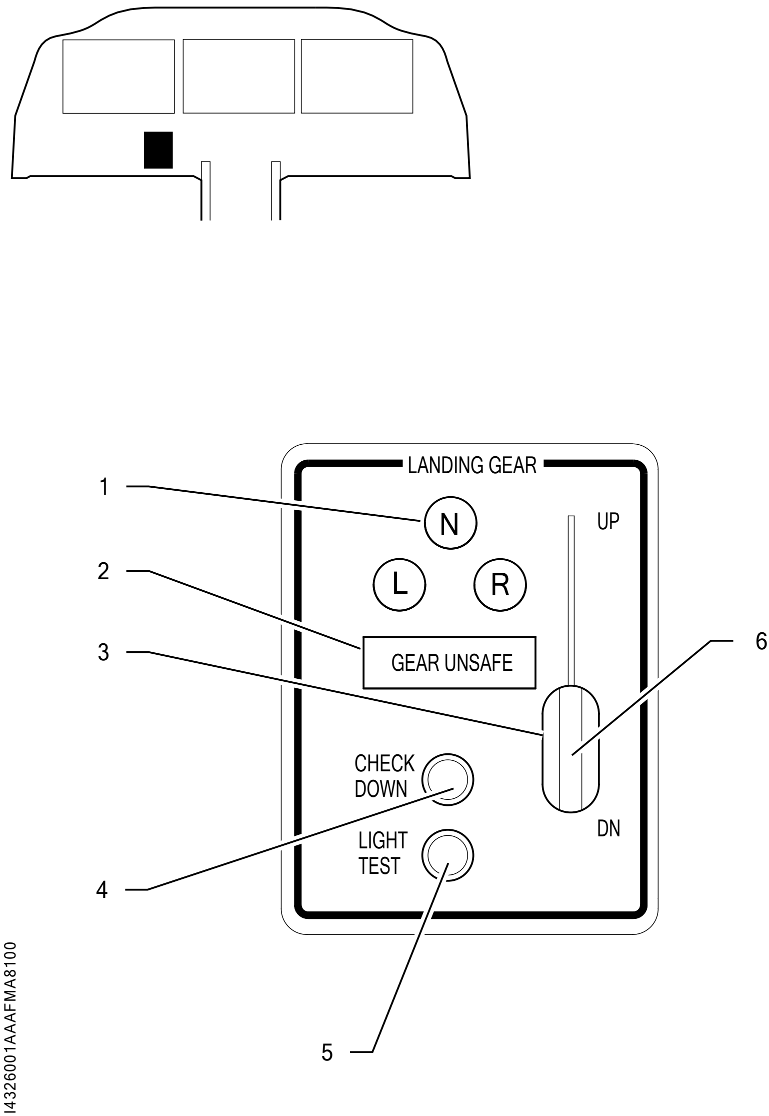
Key to Figure 7.5.1

1) Green indicator light
2) Red warning light
3) LANDING GEAR lever
4) CHECK DOWN pushbutton
5) LIGHT TEST pushbutton
6) Amber light

Figure 7.5.1 - Control Panel and Landing Gear Indicating



Safety

Safety Switch - Landing Gear Retraction

When the airplane is on ground, a safety switch installed on each main landing gear prevents an accidental retraction of the landing gear by detecting the shock strut's compression.

Landing Gear Aural Warning

The *"Landing gear / Landing gear"* (above 800 ft AGL) or the *"Check gear / Check gear"* (below 800 ft AGL) voice alert sounds, and LDG GEAR UP is displayed in the CAS window, when:

- the THROTTLE is close to the IDLE position and the landing gear is not downlocked,
- flaps are close to the LDG position (Landing) and the landing gear is not downlocked.

NOTE

Pressing the MASTER CAUTION indicator mutes the *"Landing gear / Landing gear"* voice alert.

NOTE

If one of above conditions exists and the airplane is in a stall situation, the *"Stall / Landing gear"* voice alert sounds and the control wheel vibrates. Pressing the MASTER CAUTION indicator mutes the *"Stall / Landing gear"* voice alert. The *"Stall / Stall"* voice alert will activate.

Emergency Landing Gear Extension Control

See Figure 7.5.2.

The emergency landing gear extension control consists of a hand pump and a bypass selector.

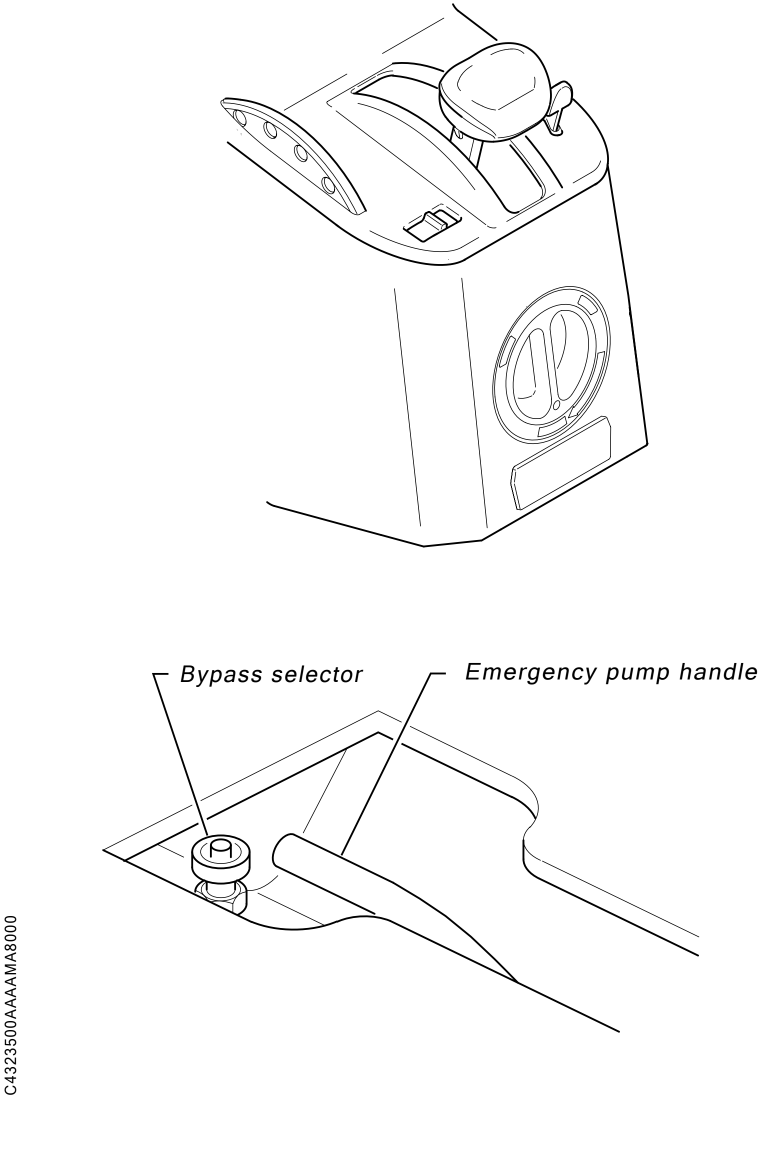
This control is accessible by removing the floor panel located aft of the pedestal.

After the bypass selector is closed, the hand pump operation sends hydraulic fluid directly into the landing gear actuators.

CAUTION

Depending on the airplane's altitude, the landing gear's full extension and locking requires up to 110 cycles of the hand pump. During the final pumping cycles, increased pressure must be felt while actuating the hand pump to confirm its proper operation in extending and locking the landing gear.

Figure 7.5.2 - Emergency Landing Gear Extension Control



Ground Maneuvers

Nose Gear Steering Control

See Figure 7.5.3 and Figure 7.5.4.

The nose gear steering control is combined with the rudder pedals and is fitted with a shimmy damper. When one of the rudder pedals is fully pushed, the nose wheel swivels approximately 20°. Steering may be increased up to 28° by applying differential braking to each side.

The airplane may be towed by attaching a steering or towing bar on the nose gear – refer to Subsection 8.6. Ground Handling. In this case, the nose wheel steering angle is limited to ± 28°.

Minimum Turn Diameter

Minimum turn diameter is obtained by using nose gear steering and differential braking – see Figure 7.5.4.

NOTE

As tight turns result in untimely tire wear, turns should be made using the largest possible turning radius.

Figure 7.5.3 - Minimum Turn Diameter [Full travel of rudder pedals without differential braking applied]

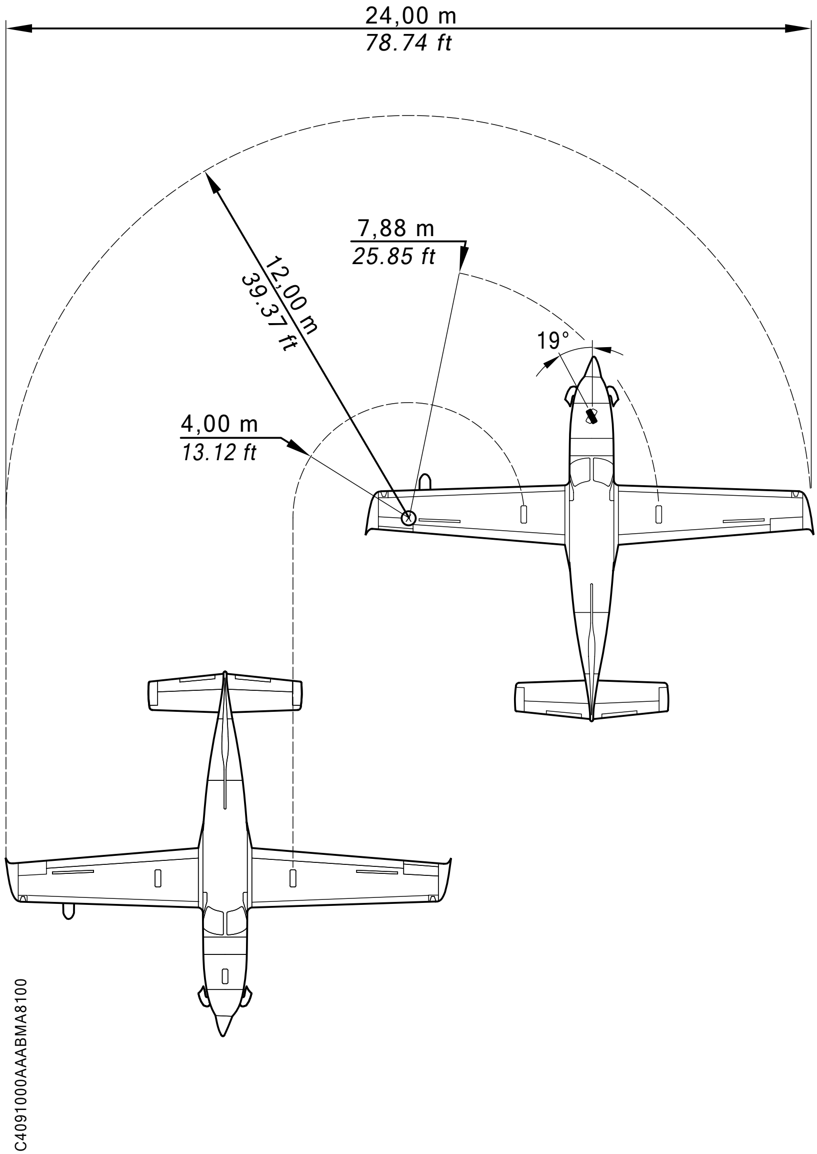
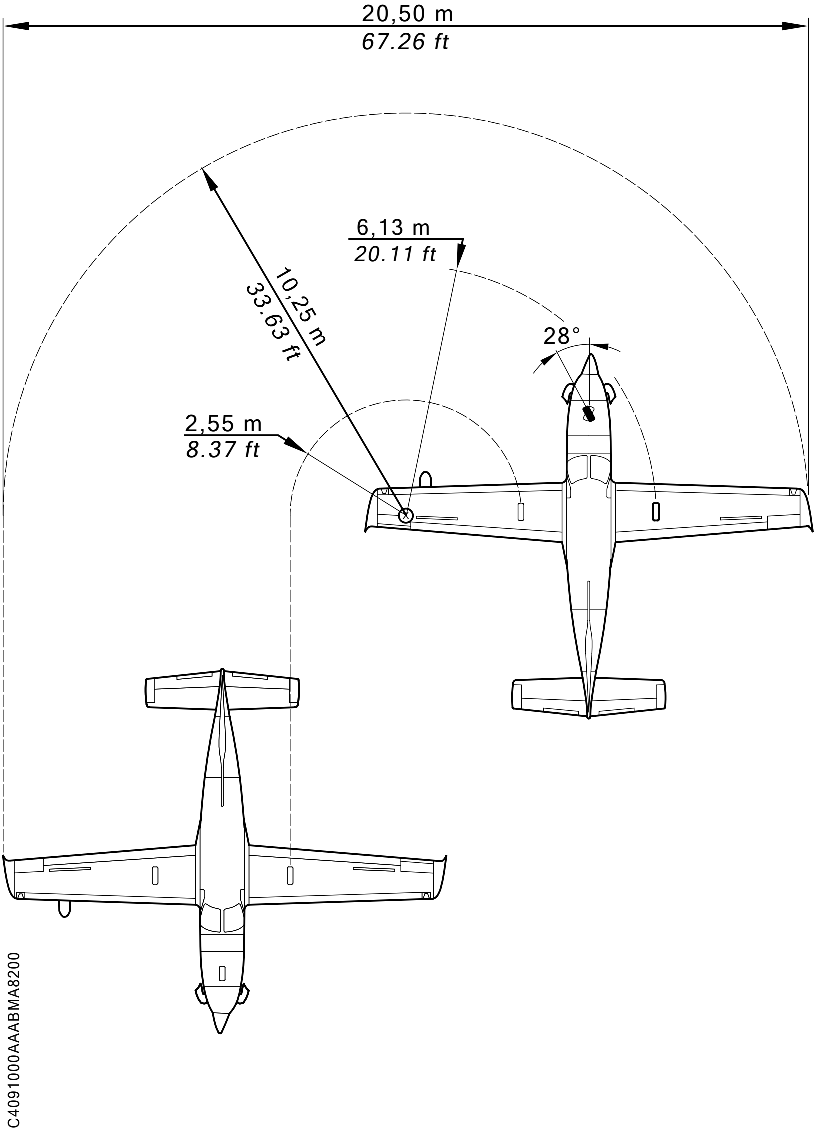


Figure 7.5.4 - Minimum Turn Diameter [Full travel of rudder pedals with differential braking applied]



Brake System

See Figure 7.5.5.

The airplane is equipped with a hydraulically actuated disc braking system installed on the main landing gear wheels.

Each toe brake at pilot and front passenger positions is equipped with a master cylinder which sends hydraulic pressure to the corresponding disc brake: left pedals, left-side brake; right pedals, right-side brake. Use differential braking to assist in maneuvering during taxiing.

A master cylinder actuated by a servomotor sends hydraulic pressure to the disc brakes when landing with the HomeSafe emergency function engaged.

HS ABN BRAKES is displayed in the CAS window when the servomotor is operating.

Parking Brake

See Figure 7.5.5 and Figure 7.5.6.

The parking brake control consists of a control knob located on pilot's side lower instrument panel and a valve that regulates the brake pressure.

To apply the parking brake, press on the rudder pedals' toe brake and set the control knob to ON.

PARK BRAKE is ON when the control knob is set to ON.

NOTE

Operating the parking brake knob without applying pressure on the rudder pedals' toe brake will not provide wheel braking.

CAUTION

Failure to apply brake pressure while releasing the parking brake can damage the parking brake valve. This damage can cause the parking brake valve to not release the pressure.

To release the parking brake, press on the rudder pedals' toe brake and set the control knob to OFF. Check that PARK BRAKE disappears at the same time.

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Key to Figure 7.5.5

1) Reservoir
2) Vent
3) HomeSafe braking servo-actuator
4) HomeSafe master cylinder
5) Front passenger's position master cylinders
6) PARK BRAKE control knob
7) PARK BRAKE valve
8) Drain
9) Pilot's position master cylinders
10) Left-side brake assembly
11) Right-side brake assembly

Figure 7.5.5 - Brake System

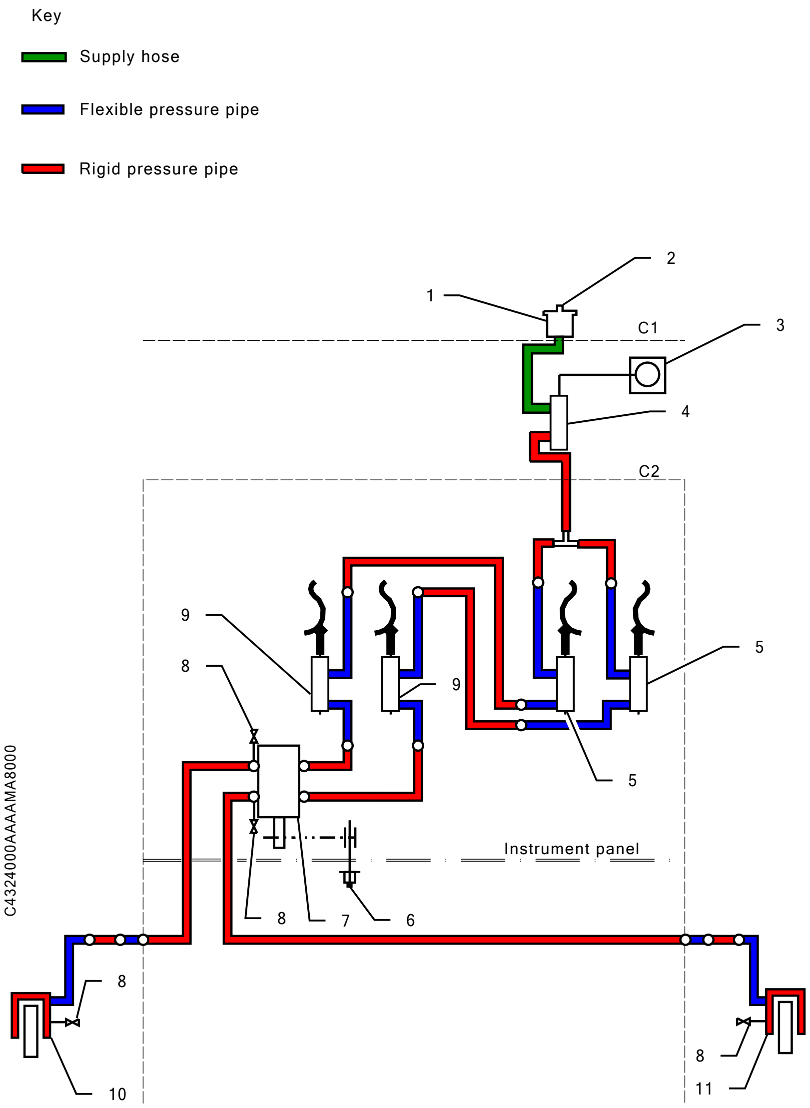
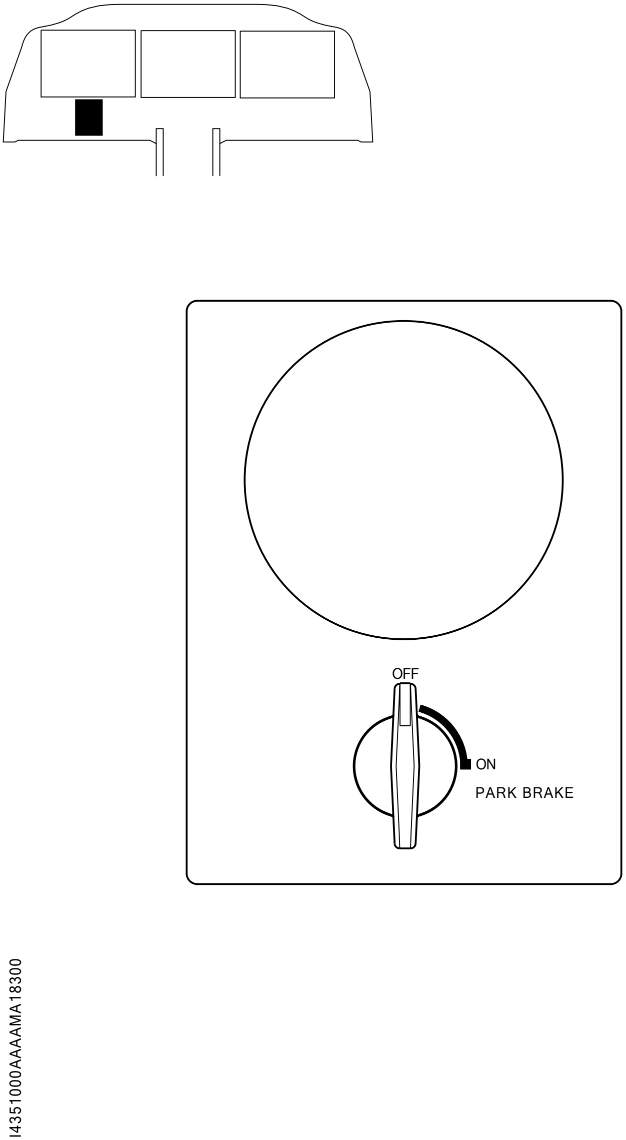


Figure 7.5.6 - Brake Bystem – Park Brake Controls



7.6 - Powerplant

Turboprop Engine Operation

See Figure 7.6.1.

The Pratt & Whitney Canada PT6E-66XT turboprop engine model is a free turbine engine flat-rated at 895 SHP, electronically controlled by a Full Authority Digital Engine Control (FADEC).

Intake air enters the engine through an annular casing and is ducted towards the compressor.

The compressor is composed of four axial stages and one centrifugal stage forming a whole assembly that compresses the air.

Fuel is sprayed by fuel nozzles into the combustion chamber and mixed with the compressed air. The mixture is first ignited by two spark igniter plugs; then combustion continues as a result of air-fuel mixture flow.

Gases resulting from combustion expand through a series of turbines:

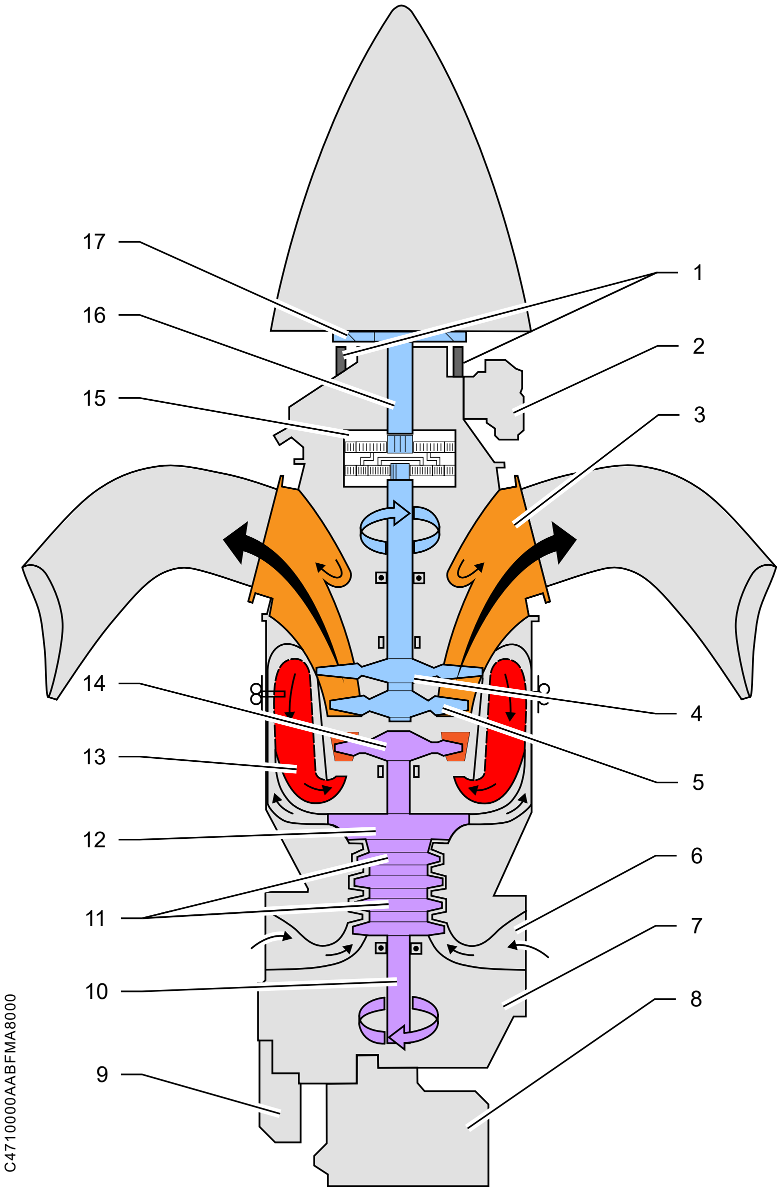
- the gas generator turbine which drives the compressor assembly and accessories. The accessory gearbox is located rearward of the engine,
- the power turbines (two stages), independent from the gas generator turbine and rotating reverse way, which drive the propeller shaft through a reduction gearbox.

Hot gases are evacuated through two exhaust stubs located laterally on both sides forward of engine cowling.

Key to Figure 7.6.1

1) Np/beta sensors
2) Propeller Control Unit (PCU)
3) Exhaust
4) Power turbine 2nd stage
5) Power turbine 1st stage
6) Air intake
7) Accessory gearbox
8) Fuel Control Unit (FCU)
9) Oil to fuel heater
10) Accessory gearbox coupling shaft
11) Axial compressors
12) Centrifugal impeller
13) Combustion chamber
14) Gas generator turbine
15) Reduction gearbox
16) Propeller shaft
17) Beta ring

Figure 7.6.1 - Powerplant



Full Authority Digital Engine Control (FADEC)

The FADEC is a full dual-channel (Channel A and B), dual-processor digital engine control system with segregated control, redundant interfaces and protection signals.

The FADEC performs the full digital control of the engine power by adjusting the fuel flow through the Fuel Control Unit (FCU) and the propeller blade angle through the Propeller Control Unit (PCU) based on:

- THROTTLE position,
- ambient conditions,
- information from engine sensors and airframe data.

The FADEC includes several control loops to control:

- engine torque (TRQ) at reference propeller speed,
- Ng at idle, during engine accelerations/decelerations, in reverse range or in degraded mode.

The FADEC sends the engine parameters including fault messages to the avionics.

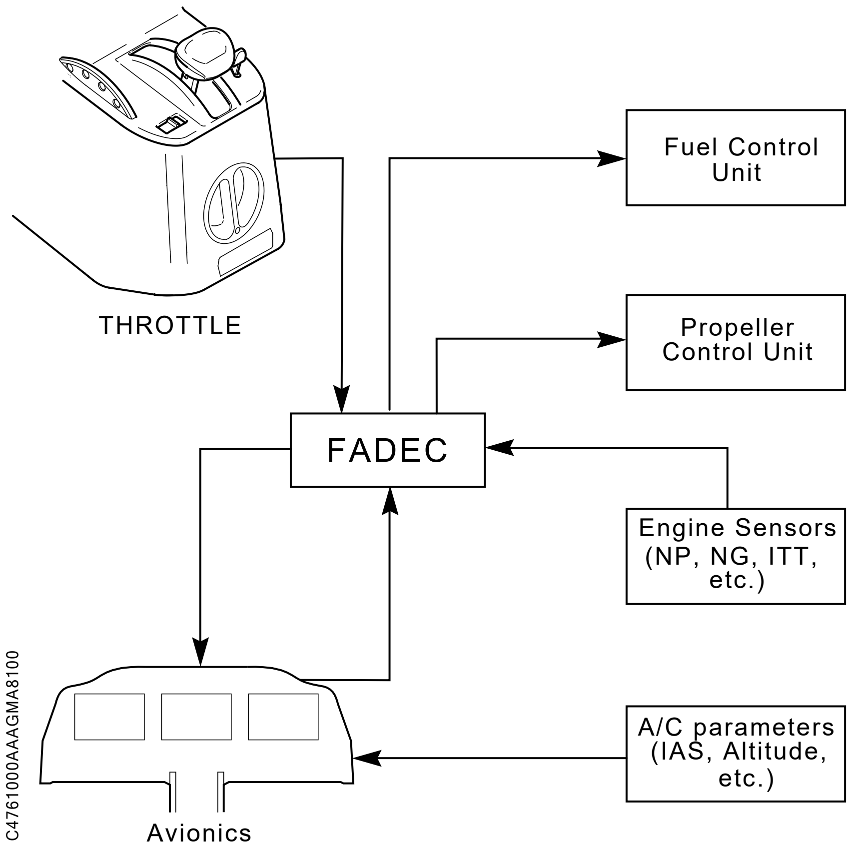
The FADEC is installed in the front cargo compartment and is connected to the engine accessories through the main engine harness.

When the engine is running, the FADEC is electrically supplied by the permanent magnet alternator – refer to Paragraph Engine Accessories .

If the permanent magnet alternator cannot provide enough electrical power to the FADEC, the airplane electrical system electrically supplies the FADEC as follows:

- Channel A is supplied by the ESS BUS 1 bar and protected by the FADEC CH.A breaker,
- Channel B is supplied by the BUS 2 bar and protected by the FADEC CH.B breaker.

Figure 7.6.2 - FADEC System Architecture



FADEC Engine Protections

The FADEC provides protections against:

- Ng exceedance and underspeed during engine operation by modulating the fuel flow,
- TRQ exceedance during engine operation by reducing the fuel flow and, if necessary, increasing Np to 2,000 RPM,
- Np exceedance during engine operation by reducing the fuel flow and, if necessary, by feathering the propeller,
- uncommanded propeller reverse in flight, by feathering the propeller,

- ITT exceedance during ground engine start by aborting the start sequence – refer to Paragraph Engine Operations ,
- surge by reducing the fuel flow.

NOTE

FADEC engine protections are fully independent of AT engine protections.

When FADEC engine protection is active, the engine power may be limited and ENG PROT ACTIVE is displayed in the CAS window.

The activation of protections may also lead to the loss of functions associated with CAS messages displayed in the CAS window.

FADEC System Faults Indications

The FADEC continuously monitors the integrity of its inputs, internal hardware functions and external driver circuits.

When an input fault is detected, the FADEC selects an alternative valid input. When an output fault is detected that prevents the channel in control from controlling the engine or propeller, the FADEC transfers control to the other channel in order to maintain engine operability.

Multiple faults are accommodated by alternative input sources, backup control loops and by always choosing the best channel to control the engine. Each channel is responsible for the detection and accommodation of its own failures and for transferring control to the other channel.

All detected faults are sent to the avionics, recorded on the DCTU and monitored through associated CAS messages triggered during ground and flight operations.

CAS message	Description
FADEC FAULT	Indicates that the FADEC system is in degraded mode without effect on engine operation. The control system has experienced a FADEC system component fault that has been automatically accommodated to provide continued operation without operational impact.

Continue ►

► *Continuing*

CAS message	Description
ENG OP DEGRADED	Indicates that the FADEC system is in degraded mode with effect on engine operation. The control system has experienced an engine failure that has been automatically accommodated to provide continued operation with operational impact.
FADEC FAIL	Indicates that the FADEC system is in degraded mode with no ability to modulate and control engine power. The control system has experienced a FADEC system component failure that has been automatically accommodated by setting fixed fuel flow condition, or shutting down the engine.

Depending on the failure detected, other CAS messages are displayed to indicate the loss of some functions and/or protections:

CAS message	Description
FADEC COM 1 CHL	The communication between one FADEC channel and the avionics is lost. The fault has been automatically accommodated by using remote channel communication data to provide continued operation.
THROTTLE FAIL	Indicates that the FADEC no more receives information of the THROTTLE position. The FADEC commands the engine considering the last valid THROTTLE position.
FEATHER	Indicates that the propeller is feathered and the engine set to idle after a FADEC system component failure.

Continue ►

► *Continuing*

CAS message	Description
NP 2000 MAX	Indicates that the FADEC commands a higher Np at 2,000 RPM due to: - an avionics failure, or - an overtorque, or - a FCU runaway (fuel metering valve fully open). To comply with engine power limitations, the maximum available torque is reduced to 96%.

All FADEC system component failures are associated with dispatch indication on ground. The pilot is informed that the next flight can be performed or not with CAS messages displayed in the CAS window:

- NO DISPATCH indicates that the failure must be repaired prior further flight,
- LMTD DISPATCH indicates that further flight can be performed and the failure should be repaired within 50 flight hours after first appearance of the message. The duration of the flight after which LMTD DISPATCH appears for the first time must be taken into account in the 50 flight hours.

Engine Control Lever

THROTTLE

See Figure 7.6.3.

The pilot operates the engine using the THROTTLE (electro-mechanical device) located on the pedestal console.

The FADEC receives information of the THROTTLE position to modulate the engine power from full reverse to maximum power:

- on ground, the power response to the THROTTLE movement is non-linear to provide more sensitivity at low power, close to IDLE,
- in flight, the power response is linear to provide a smooth response throughout the full range of operation.

IDLE position of the THROTTLE can lead to two different engine settings:

- in flight, flight IDLE setting with dedicated Ng and propeller pitch values,

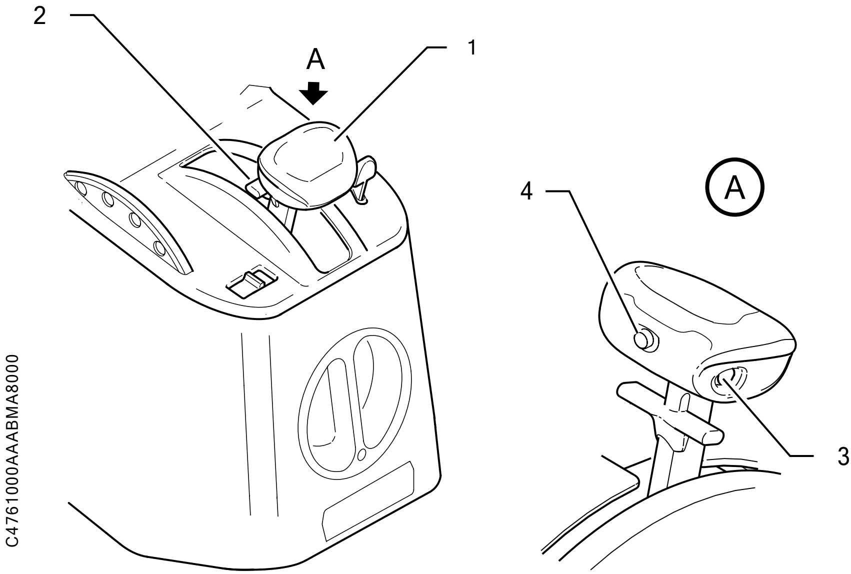
- on ground, ground IDLE setting with reduced Ng to reduce fuel consumption during ground operations.

To select reverse thrust, the pilot must pull up the trigger and move the THROTTLE rearward in the REV range. Then, the FADEC commands a reversion of propeller pitch and an increase of Np, modulated depending on the THROTTLE position in the REV range.

Return to IDLE position is performed by pushing the THROTTLE forward.

Figure 7.6.3 - Engine Control Lever

1) THROTTLE
2) Trigger for reverse
3) TO/GA pushbutton
4) AT DISC pushbutton



Autothrottle Assembly

See Figure 7.6.4.

The THROTTLE can be commanded by the autothrottle system through a mechanical transmission (gears) between the THROTTLE and the autothottle servomotor which is fully integrated to the pedestal console.

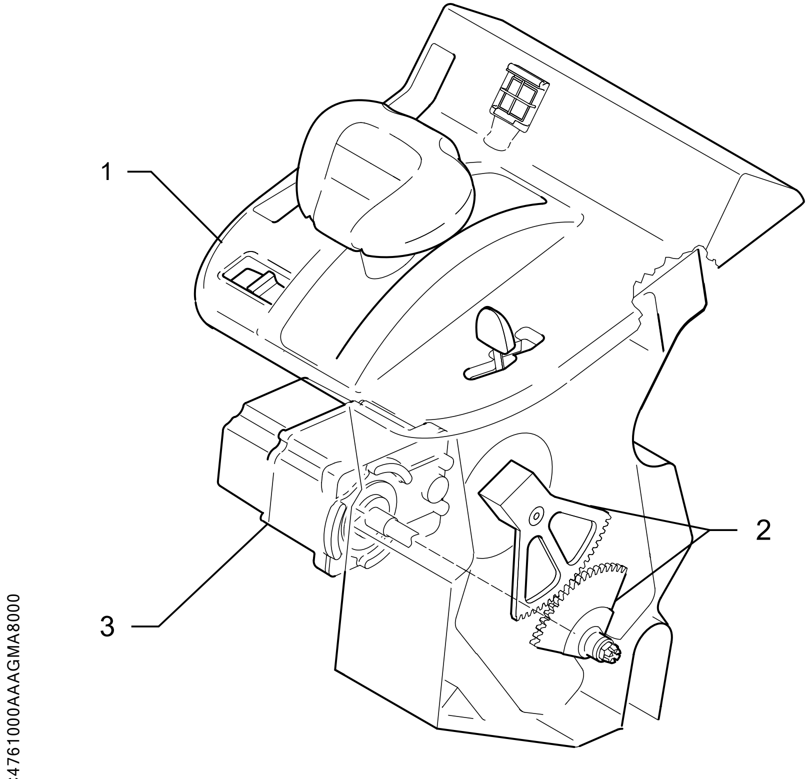
The autothrottle function actuates the THROTTLE by a mechanical assembly (gears) permitting to link the Garmin servomotor.

When the Autothrottle function is activated, the THROTTLE movements are defined by the Autothrottle servomotor.

The autothrottle controls are integrated within the AFCS control unit located above the MFD.

Figure 7.6.4 - Autothrottle Assembly

1) Pedestal console
2) Gears
3) Servomotor



Engine Monitoring

Engine indicating consists of:

- engine torque expressed in percent (%), TRQ
- gas generator rotation speed expressed in percent (%), NG
- inter turbine temperature expressed in °C, ITT
- propeller speed in RPM, PROP RPM
- oil pressure expressed in psi, OIL PSI
- oil temperature expressed in °C, OIL °C

All these indications are merged in the Single Engine Indicator – refer to Paragraph Single Engine Indicator .

The monitoring is also ensured by CAS messages – refer to Paragraph CAS Messages .

Refer to the Garmin Pilot's Guide for further details.

Single Engine Indicator

See Figure 7.6.5, Figure 7.6.6 and Figure 7.6.7.

The single engine indicator simplifies the monitoring of engine parameters:

- TRQ, NG and ITT gauges are merged into one display window,
- PROP RPM is always displayed with a digital indicator,
- TRQ, NG and ITT indications have a dedicated tab.

At all times, only one indication has priority and is primarily displayed with an analog gauge and associated digital information. The two other indications that do not have priority are displayed only in the form of a digital information.

For each displayed parameter, the lower boundary of the yellow arc corresponds to the maximum continuous limit, and the red line corresponds to the absolute limit.

There is only one arc displayed at a time with either TRQ, NG or ITT. At all times the digital value of TRQ, NG and ITT are displayed.

Indication priority depends on engine condition (i.e. engine OFF, engine starting, engine running, engine shutdown or dry motoring) and parameter level (i.e. normal, amber or red):

- When the engine is OFF, during engine start and engine shutdown, the primarily displayed indication is ITT,

- When the engine is running, the primarily displayed indication is TRQ. NG and ITT indications take priority only if either parameter enters an amber or red operating range,
- When the pilot manually performs a dry motoring, the primarily displayed indication is NG.

Figure 7.6.5 - Priority Indication = TRQ

C4342800AAAEMA18000

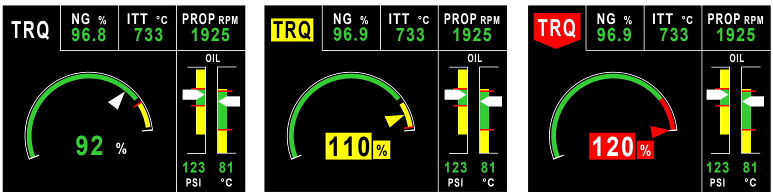


Figure 7.6.6 - Priority Indication = NG

C4342800AAAEMA18100

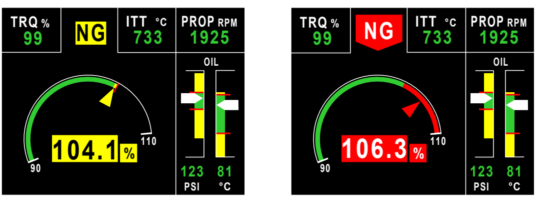
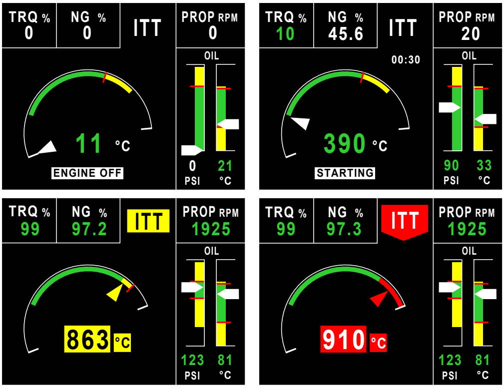


Figure 7.6.7 - Priority Indication = ITT



C4342800AAAEMA18200

CAS Messages

Table 7.6.1 - Engine Monitoring CAS Messages

CAS message	Description
NG	- NG > 104.3%, or - NG > 104% for more than 20 seconds.
ITT	During engine start: - ITT > 1,000 °C, or - ITT > 900 °C for more than 5 seconds, or - ITT > 850 °C for more than 20 seconds. When engine is running: - ITT > 900 °C, or - ITT > 850 °C for more than 20 seconds.

Continue ►

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Table 7.6.1 - Engine Monitoring CAS Messages

CAS message	Description
ITT HI	During engine start: >> *postMod: MOD70-0753-00C* - ITT ≥ 850 °C for less than 20 seconds, or >> *All* - ITT > 900 °C for less than 5 seconds. When engine is running: - ITT > 850 °C for less than 20 seconds.
PROP	- PROP RPM ≥ 2,100 RPM, or - PROP RPM > 2,030 RPM for more than 20 seconds.
OIL PRESS	For overpressure: - OIL PSI > 175 psi, or - OIL PSI > 135 psi for more than 20 seconds. For low pressure: - OIL PSI < 40 psi, or - OIL PSI < 60 psi for more than 20 seconds, or - OIL PSI < 100 psi for more than 20 seconds when NG > 72%.

Continue ►

► *Continuing*

Table 7.6.1 - Engine Monitoring CAS Messages

CAS message	Description
OIL PRESS	For overpressure: - OIL PSI > 135 psi for less than 20 seconds. For low pressure, when engine is running: - OIL PSI < 60 psi for less than 20 seconds, or >> *preMod: MOD70-0753-00C* - OIL PSI < 100 psi for more than 5 seconds when NG > 72%. >> *All* >> *postMod: MOD70-0753-00C* - OIL PSI < 100 psi for less than 20 seconds when NG > 72%, or - OIL PSI < 100 psi when NG ≤ 72%. >> *All*
OIL TEMP	For overtemperature: - OIL °C > 110 °C, or - OIL °C > 104 °C for more than 10 minutes. For low temperature: - OIL °C < -40 °C.
OIL TEMP	For overtemperature: - OIL °C > 104 °C for less than 10 minutes. >> *preMod: MOD70-0753-00C* For low temperature, when engine is running: - OIL °C < 15 °C when NG > 72%. >> *All* >> *postMod: MOD70-0753-00C* For low temperature: - OIL °C < 15 °C. >> *All*

Continue ►

► *Continuing*

Table 7.6.1 - Engine Monitoring CAS Messages

CAS message	Description
EXCEEDANCE	Displayed on ground when engine is off if avionics has recorded: - exceedance of at least one engine parameter, - airspeed exceedance (> V_{MO}). Inform maintenance department before further flight.

Engine Lubrication

Engine oil is in a tank incorporated into the powerplant. It ensures lubrication and engine cooling. A cooler located on the left side in the engine compartment maintains oil temperature within the limits. Oil flow into the cooler is metered by a thermostatic valve. Engine oil also supplies the PCU and the engine torquemeter.

A chip detection system enables the monitoring of the engine oil system. The system includes one chip detector installed on the propeller reduction gearbox and a second chip detector installed on the engine accessory gearbox. In case of chip detection, **CHIP** is displayed in the CAS window.

Lubrication system content, cooler included, is 12.7 quarts (12 liters). A graduated dipstick allows checking oil quantity in the system. A visual oil sight glass, located on the left side of the engine, allows a rapid checking of the oil level.

NOTE

For checking and oil filling-up, refer to Paragraph Engine Oil in Subsection 8.7. .

Engine Operations

See Figure 7.6.8.

FADEC Power-up

During initialization, the FADEC performs built-in tests:

- to confirm the functioning of each channel's computing hardware, safety-related features, and key interfaces,
- to identity any fault.

During this time, the FADEC briefly activates the output effectors on both channels. As a result it is normal for the pilot and the avionics to observe the effect of the activated output effectors (e.g spurious messages, etc.).

Ignition Function

The ignition system consists of an ignition unit that supplies, from 28 V source, high voltage current necessary to two spark igniter plugs.

The IGNITION pushbutton, located on the ENGINE/FUEL panel of the upper panel, enables the pilot to select between AUTO or ON positions:

- In the AUTO position, the FADEC controls the ignition system:
  - during engine start,
  - under certain conditions, to avoid engine flameout.
- In the ON position, the pilot commands continuous ignition.

IGNITION is displayed in the CAS window as long as the spark igniter plugs are supplied.

The table hereafter gives the status light colors corresponding to the state of the system.

System state	Status light
AUTO position	
ON position	

Starter Function

The FADEC provides the electrical power system with orders required to activate and deactivate the starter.

The STARTER switch, located on the ENGINE/FUEL panel of the upper panel, enables the pilot to send orders to the FADEC to initiate or abort the start sequence.

The STARTER switch is a mono-stable switch normally in the OFF position.

Before initiating the start sequence, the pilot must set the ENGINE MODE guarded switch to RUN.

Setting the STARTER switch to ON initiates the starting procedure which is automatically managed by the FADEC.

STARTER is displayed in the CAS window as long as the starter generator is operating.

During start sequence, the starter operation is automatically limited by the FADEC.

WARNING

Engine starting must be performed by qualified personnel and following procedures and parameters described in section 4 Normal Procedures.

Aborted Start

The pilot has the capability to interrupt the engine start sequence anytime by setting the STARTER switch to ABORT.

The pilot can also interrupt the engine start sequence by setting the ENGINE MODE switch to OFF. In this case, the automatic dry motoring is not performed and the pilot must perform a manual dry motoring before the next engine start – refer to Paragraph Dry Motoring .

The FADEC has also the capability to interrupt the engine start sequence if:

- light-up is not detected within 13 seconds after fuel is injected into the combustion chamber, or
- Ng does not increase after light-up, or
- ITT exceeds 945 °C.

ABORTING START is displayed in the CAS window during engine shutdown.

CAUTION

The FADEC automatic start sequence aborting function is only available on ground.

Dry Motoring

The dry motoring procedure is used:

- to remove internally trapped fuel after an aborted start or a wet motoring,
- to cool the engine after shutdown in high OAT, or
- if there is evidence of smoke from the engine exhausts.

WARNING

During automatic dry motoring run, the propeller continues turning. Remain clear of propeller area.

The FADEC automatically commands a dry motoring for 30 seconds before complete engine shutdown when:

- the FADEC has automatically aborted the engine start sequence, or
- the pilot has set the STARTER switch to ABORT during engine start.

NOTE

The pilot can stop this automatic dry motoring by setting the ENGINE MODE switch to OFF. In this case, the pilot must perform a manual dry motoring before the next engine start.

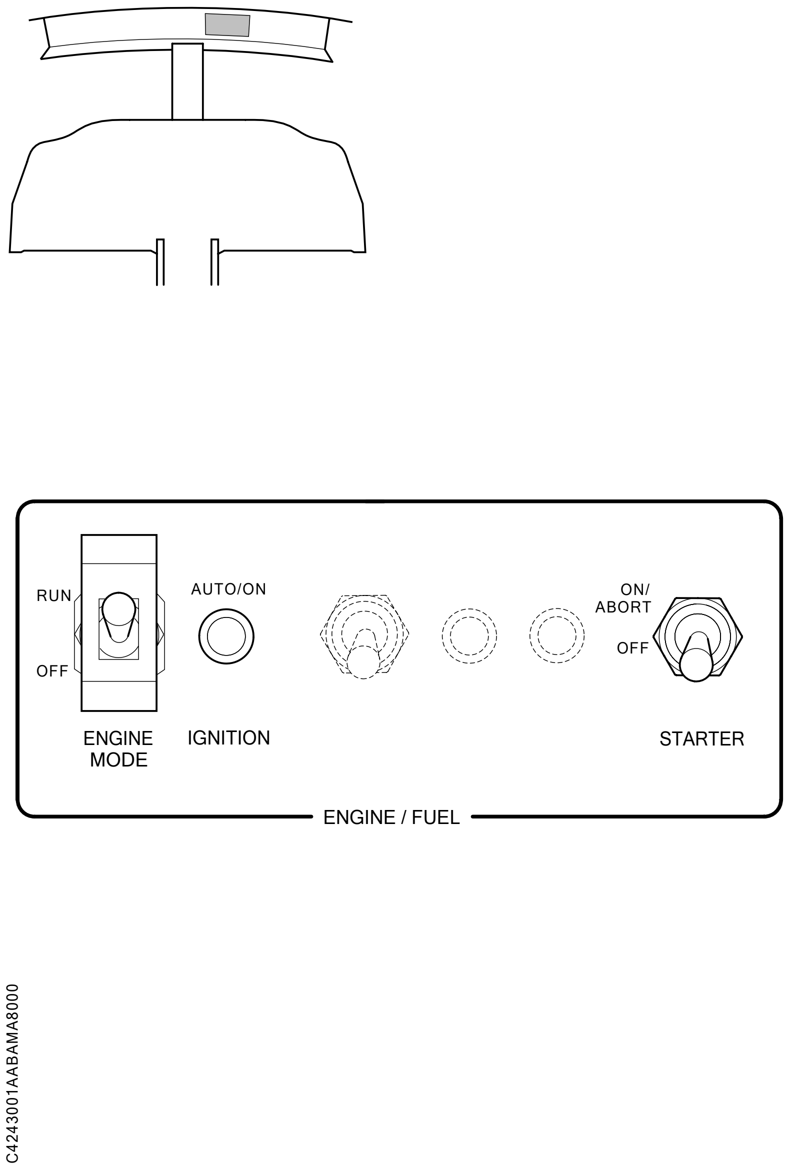
During engine shutdown in high OAT, the FADEC may also command a dry motoring for 15 seconds before complete engine shutdown. The pilot is not able to interrupt this automatic dry motoring sequence.

The pilot can manually perform a dry motoring. The pilot activates the engine crank mode in the dedicated GTC sub-menu ("MFD Home," "Aircraft Systems," "Engine Crank") when the ENGINE MODE switch is set to OFF. Then, the pilot manually operates the starter by setting and maintaining the STARTER switch to ON during all the motoring duration – refer to limitations in Subsection 2.4. Starter Operation Limits.

For further details about activation of the Engine Crank mode in GTC, refer to the Garmin Pilot's Guide.

STARTER is displayed in the CAS window as long as the starter generator is operating.

Figure 7.6.8 - Engine Control Panel



Engine Air Inlet

The engine air inlet is located at the front lower section of engine cowling. The air inlet port is protected against icing by a hot air flow provided by the engine. Air is driven throughout a duct in the engine casing before entering the engine through a protective screen. An inertial separator system inside the air duct protects the engine from ingesting dense particles (water, ice, fine gravels, sand).

The inertial separator consists of two movable vanes. During normal operation, air is conducted directly towards the engine air intake. To separate particles suspended in the air, vanes are positioned to force the engine induction air to execute a sharp turn: under the effect of centrifugal force, denser particles separate from the air and are discharged overboard through two apertures located under engine cowling.

Operation of the inertial separator vanes is electrically controlled by the INERT SEP switch located on the DE-ICE SYSTEM panel. When the INERT SEP switch is set to ON, an electric actuator activates the vanes; INERT SEP ON is displayed in the CAS window when the vanes have reached their maximum deflection, and remains displayed as long as the switch remains in the ON position. Full deflection takes about 40 seconds. If the vanes do not reach the full deflection 50 seconds after activation or are not retracted 50 seconds after deactivation, INERT SEP FAIL is displayed in the CAS window.

The inertial separator is automatically activated when the Ice Detection System is in the AUTO mode and an ice signal is sent by the ice detector. It can be manually activated at any moment by pressing the INERT SEP switch. Deactivation is possible at any moment except if the DE ICE SYSTEM mode switch is set to AUTO and ice is detected by the ice detector. Description of the Ice Detection System is presented in Paragraph Ice Detection System in Subsection 7.14..

The table hereafter gives the CAS messages and the status light colors corresponding to the state of the system.

System state	Status light	CAS
OFF	OFF	
ON (AUTO mode)	ON	INERT SEP ON
ON (MAN mode)	ON	INERT SEP ON

Continue ►

► *Continuing*

System state	Status light	CAS
FAIL		INERT SEP FAIL

Exhaust System

The exhaust gases are evacuated through exhaust stubs located on the sides of engine cowlings.

Engine Accessories

Fuel Control Unit (FCU)

The FCU is an electro-hydro-mechanical device (servo-valves) that modulates the fuel flow sent to the engine combustion chamber within the entire operational envelope of the engine.

The FCU contains:

- An engine fuel filter paired with a differential pressure sensor that triggers FUEL CLOGGING or FUEL CLOGGING, and
- A fuel temperature sensor mounted at the output of the filter.

The FCU is mounted on the accessory gearbox, rearwards of the engine.

Fuel High Pressure Pump (HP)

The fuel HP pump is part of the FCU. The FCU pumping stages are directly driven off an integrated driveshaft which interfaces with the accessory gearbox.

Fuel provided by the engine driven main pump (mechanical) enters the FCU through the low pressure pump (regent wheel), then flows into the engine mounted fuel heater prior returning to the FCU HP pump (gear pump) through the engine fuel filter.

In case of contamination of the engine fuel filter, a bypass valve allows fuel to go directly from the FCU to the downstream fuel nozzles.

Oil Pump

The oil pump is a self-controlled gear pump located at the bottom of the oil casing.

Permanent Magnet Alternator and Ng Determination

The Permanent Magnet Alternator is a dual-wound three-phase unit installed on the FCU, driven by the gas generator spool.

It provides electrical power to the FADEC when the engine is running.

The Permanent Magnet Alternator frequency is sensed by the FADEC and used to derive the gas generator speed (Ng).

Torque Pressure Sensor

The torque pressure sensor sends oil pressure information to the FADEC which uses it to calculate the torque applied to the propeller.

The torque pressure sensor is mounted on the reduction gearbox.

Propeller Operations

The airplane is equipped with a composite five-bladed, constant-speed and full-feathering propeller.

Propeller Control Unit (PCU)

The PCU is an electro-hydro-mechanical device (servo-valves) that modulates the propeller blade angle within the entire operational envelope of the engine.

To control the propeller blade angle, the PCU uses high pressure engine oil. Oil pressure delivered by the PCU drives blades toward low pitch (including reverse range) while counterweights drives blades toward high pitch (feather).

The PCU is mounted on the reduction gearbox, forward of the engine.

In flight, the PCU modulates the propeller blade angle in order to govern propeller at nominal speed.

On ground, or during descent, when engine power is not sufficient to govern at nominal speed, the propeller blade angle will be a resultant from the THROTTLE position.

Np/Beta Sensors

Two Np/beta sensors (variable reluctance magnetic sensors) are used to measure timing between the teeth of the beta ring which is located at the rear of the propeller with longitudinal and oblique protuberances.

The FADEC uses this data to determine the propeller pitch angle and the propeller speed (Np).

Np value (PROP RPM) can be monitored by the pilot on the single engine indicator – refer to Paragraph Engine Monitoring .

The Np/beta sensors are symmetrically mounted at the lower part of the reduction gear box, forward of the engine.

Reverse Operation

Propeller reverse pitch enables reduced landing roll.

Reverse is selected via the THROTTLE – refer to Paragraph Engine Control Lever.

The PCU modulates the propeller blade angle depending on the THROTTLE position.

In reverse operation, the FADEC limits engine power and propeller speed at 1,900 RPM.

Feathering

Depending on the conditions, the FADEC commands propeller feathering via the PCU and/or via an independent electrical solenoid.

During engine start, the propeller is feathered until sufficient engine oil pressure is available to pressurize the PCU.

Pilot Feather Request

The pilot can manually request a propeller feathering via the GND FEATHER guarded switch, located on the upper part of the pedestal console.

Before setting the GND FEATHER guarded switch to ON, the pilot must ensure that all the following conditions are met:

- Airplane is on ground (for at least 5 seconds),
- Engine is running,
- The THROTTLE is in the IDLE position (for at least 5 seconds).

In this case, the PCU commands propeller feathering through the servo valve (i.e. the independent electrical solenoid is not activated).

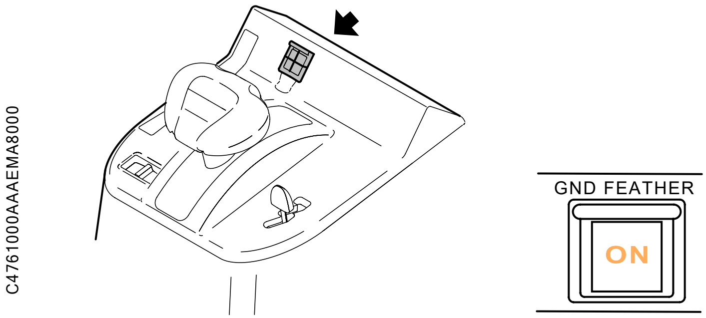
CAUTION

When the propeller is feathered and the THROTTLE is forced out of the IDLE position, the propeller will no longer be feathered.

NOTE

When the propeller is feathered after a pilot request, the autothrottle servomotor is clutched to prevent the THROTTLE from moving easily out of the IDLE position.

Figure 7.6.9 - GND FEATHER Switch



CAS messages are displayed to monitor feathering:

CAS messages	Description
FEATHER MISMATCH	Indicates that the propeller is not feathered after a pilot feather request through the GND FEATHER guarded switch.
FEATHER SECURED	*>> postMod: MOD70-0753-00C* Indicates that the AT servomotor is clutched to secure the THROTTLE in the IDLE position after a pilot feather request through the GND FEATHER guarded switch. *>> All*

Engine Shutdown

- On ground, when an engine shutdown is commanded, as soon as gas generator speed drops below a given threshold, propeller feathering is commanded through both the PCU servo valve and the solenoid.

  When the propeller and gas generator speeds drop below a given threshold, the solenoid is no longer electrically powered to preserve battery.
- In flight, after an engine flameout or if engine shutdown is commanded, as soon as gas generator speed drops below a given threshold, the PCU

commands propeller feathering. A few seconds later, the solenoid is also activated.

The PCU and the solenoid remain electrically powered and command propeller feathering until air start is performed.

Activation of FADEC Protections

- Minimum blade angle protection: if dedicated sensors indicate that the THROTTLE is in forward position and propeller blade angle goes below the minimum threshold, the solenoid commands propeller feathering to avoid uncommanded propeller reverse in flight.
- Overspeed protection: if propeller speed goes above the maximum threshold, the solenoid commands propeller feathering.

7.7 - Use of Autothrottle

General

The Autothrottle (AT) function is fully integrated with the Automatic Flight Control System (AFCS) and is associated with the Single Engine Indicator (SEI). AT automatically actuates the THROTTLE to control engine power within operational limits, in order to reach and maintain the manually selected airspeed (MAN mode) or programmed flight phase schedule (FMS mode).

For more information on AT modes and cockpit controls, refer to the Garmin Pilot’s Guide, Autothrottle section.

For more information on the SEI, refer to Paragraph Engine Monitoring in Subsection 7.6. and to the Garmin Pilot’s Guide, Engine Indication System (EIS) section.

AT Engine and Airspeed Protections

The AT function includes engine and airspeed protections to enhance flight safety. AT engine and airspeed protections automatically activate if necessary, both when the AT is engaged and when the AT is disengaged.

AT engine and airspeed protections are automatically inhibited below 400 ft AGL.

The default setting for the AT engine and airspeed protections is ON at avionics power up. The ESP system and the AT engine protection system must remain ON for all normal operations. If necessary, for a specific training maneuver or maintenance check, these systems can be temporarily turned off with the Stability & Protection button in the avionics setting of the GTC menu. The **ESP OFF** advisory CAS message indicates that the AT engine protection system and the ESP system protections are OFF. Following completion of the training maneuver or maintenance check turn ESP on.

AT Engine Protections

AT engine protections automatically reduce engine power, to ensure that ITT never remains above 840 °C in flight.

NOTE

When the AT is engaged in a mode that sets and maintains 100% TRQ (e.g. TO, CLIMB or any other mode that requires 100% TRQ to reach and maintain a specific airspeed or flight schedule), TRQ may temporarily exceed 100%. It is normal for the autothrottle system to take a few seconds to fully correct a torque exceedance. This may occur in acceleration phases or during extention or retraction of the inertial separator. The engine will only require inspection/maintenance if 118% torque is exceeded, or if 103% torque is exceeded for more than 20 seconds. In this case, EXCEEDANCE will be displayed after engine shutdown.

AT Airspeed Protections

AT airspeed protections are complementary to ESP, and operate as follows:

- AT automatically increases engine power to prevent any airplane underspeed condition.
- AT automatically reduces engine power to prevent any airplane overspeed condition.

NOTE

Airspeed thresholds taken into account by AT airspeed protections depend on the current flap setting and landing gear position.

For more information on AT protections, refer to the Garmin Pilot's Guide, Autothrottle and Electronic Stability & Protection (ESP) sections.

AT Engagement and Disengagement

AT Engagement

To engage AT, press the AT button on the AFCS control unit. AT status, and associated AT mode become active. If the AT is not engaged, AT may automatically engage if an engine or airspeed protection is triggered. PROT AT mode temporarily appears, until the condition for engine or airspeed protection is cleared.

AT Standard Disengagement

To disconnect AT in a standard manner, apply any of the following:

- Press the AT button on the AFCS control unit
- Press the AT DISC pushbutton on the THROTTLE

- Press the AP/TRIM DISC pushbutton on the control yoke (AP/FD will also be disengaged)

At AT standard disengagement, an **AT** annunciation flashes during approximately 5 seconds and the *"Autothrottle"* voice alert is generated.

AT Non-Standard Disengagement

The following will cause non-standard AT disengagement:

- Manually forcing on the THROTTLE until the AT control servo is overridden
- AP SERVOS breaker is pulled or tripped
- FD captures the GS/GP in FMS mode

In the case of AT non-standard disengagement, the **AT** annunciation flashes and the *"Autothrottle"* voice alert is generated, until AT disengagement is acknowledged (i.e. until either the AT DISC pushbutton of the THROTTLE or the AP/TRIM DISC pushbutton of the control yoke is pressed).

Engine Start or Engine Air Start

NOTE

Autothrottle engine protection system is disabled during engine start.
The FADEC provides protection against ITT exceedances during ground start only – refer to Paragraph Full Authority Digital Engine Control (FADEC) in Subsection 7.6. .

For additional information on SEI display during engine start, refer to Paragraph Engine Monitoring in Subsection 7.6. and to the Garmin Pilot's Guide, Engine Indication System (EIS) section.

Taxi

Do not engage AT for taxi – refer to Paragraph Autothrottle (AT) Limits in Subsection 2.6. .

Takeoff

AT can be engaged for takeoff, as follows:

When the airplane is lined up on the runway, press the AT button to arm AT (**TO** AT mode is displayed). Then, manually set takeoff torque to more than around 75%, until AT takes control over the THROTTLE. **TO** AT mode and **AT** status both become active.

TO AT mode sets and maintains maximum TRQ available.

> **NOTE**
>
> AT engine and airspeed protections are inhibited below 400 ft AGL.

> **NOTE**
>
> With AT engaged during takeoff or go-around, the THROTTLE position must be guarded by keeping the pilot's hand on the THROTTLE.

Climb

Above 1,000 ft AGL:

For climb with the AT engaged, it is recommended to use the **FLC** FD vertical mode.

When **FLC** is active, AT engagement activates the **CLIMB** AT mode that sets and maintains engine power in accordance with the climb performance tables – refer to Subsection 5.8. Engine Operation.

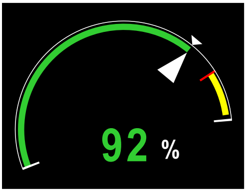
Then, the target airspeed is tracked via FD pitch orders. In MAN mode, the target airspeed is the manually selected airspeed. In FMS mode, the target airspeed is retrieved from the FMS climb schedule.

Torque Target Display

In MAN or FMS mode, the Maximum Climb Torque index is displayed on the torque gauge. Its value corresponds to the Maximum Climb power – refer to Subsection 5.8. Engine Operation.

Figure 7.7.1 - Maximum Climb Torque Index

C4342800AAAFMA18000



Cruise

NOTE

During the acceleration between the climb and the cruise airspeed, the AT may increase engine power, slightly before engine aerodynamic cooling becomes fully effective. As a result, the NG and/or ITT parameters may temporarily enter the cautionary range of the SEI and trigger the AT and/or the FADEC engine protection (engine power reduction associated with NG amber parameter and ENG PROT ACTIVE CAS message, and/or with ITT HI CAS message). This may occur until cruise airspeed is stabilized.

Cruise in MAN Mode

In MAN mode, AT engagement activates the SPD XXXkt AT mode that controls engine power within operational limits to reach and maintain the selected airspeed.

NOTE

If the selected airspeed cannot be reached (e.g. selected airspeed is too high with respect to maximum permitted engine power, or engine performance is affected when inertial separator is ON, etc.), the AT maintains the maximum permitted engine power and the resulting airspeed may remain below the selected airspeed. This is to remain within the normal engine operating range.

Cruise in FMS Mode

In FMS mode, the selectable cruise schedules are Recommended Cruise (RCR), Maximum Cruise (MXCR), Long Range Cruise (LRCR). In either mode, AT controls engine power within operational limits, in order to reach and maintain the selected cruise schedule.

In FMS speed mode, the AT takes speed constraints of the flight plan into account. If the active leg of the flight plan has a speed constraint, the speed constraint is displayed above the airspeed indicator and the AT mode switches to SPD XXXkt.

NOTE

If the inertial separator deploys, the MXCR schedule is automatically selected. As a result, the FADEC changes engine ratings to the MXCR TRQ tables with INERT SEP ON. At the same time, the maximum available TRQ is reduced (the size of the green arc on the SEI reduces). RCR and LRCR schedules are no longer selectable.

If the AT was active with a speed target requiring TRQ below the maximum available TRQ, the AT will try to maintain the speed at the selected target and then may move the THROTTLE forward.

Torque Target Display

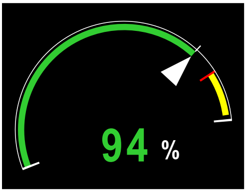
In MAN or FMS mode, the optimum torque index is displayed on the torque gauge. Its display depends on the selected cruise schedule, refer to the Garmin Pilot's Guide, Vertical Navigation section.

If Maximum Cruise schedule is selected, a white "I" is displayed, which corresponds to the Maximum Cruise power – refer to Subsection 5.8. Engine Operation.

If Recommended Cruise schedule is selected, a green "I" is displayed, which corresponds to the Recommended Cruise power – refer to Subsection 5.8. Engine Operation.

If Long Range Cruise schedule is selected, a white "T" is displayed, which corresponds to the Long Range Cruise power – refer to Subsection 5.8. Engine Operation.

Figure 7.7.2 - Maximum Cruise Torque Index



C4342800AAAFMA18100

Figure 7.7.3 - Recommended Cruise Torque Index

C4342800AAAFMA18200

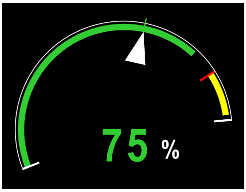
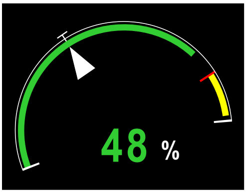


Figure 7.7.4 - Long Range Cruise Torque Index

C4342800AAAFMA18300



Examples

Example, with no speed constraints:

- FL 280, Selected Cruise Schedule: Maximum Cruise. No Speed Constraint.
  - . AT mode: **MXCR**
  - . Managed AT TRQ = 98%
  - . IAS ≃ 210 kt (maximum airspeed corresponding to torque value)

Examples, with speed constraints:

- Altitude 5,000 ft, Selected Cruise Schedule: Long Range Cruise. Speed Constraint = 250 kt.
  - . Displayed AT mode: **SPD 250kt**
  - . Managed AT TRQ = 41%
  - . IAS ≃ 180 kt (maximum airspeed corresponding to torque value)
- Altitude 3,000 ft, Selected Cruise Schedule: Maximum Cruise. Speed Constraint = 120 kt.
  - . Displayed AT mode: **SPD 120kt**
  - . Managed AT TRQ ≃ 28%

. IAS = 120 kt

Descent

For descent with the AT engaged, it is recommended to use the FLC or VS FD vertical mode.

When FLC is active, AT engagement activates the DESC AT mode that sets engine power from around 18% TRQ at high altitude to 0% at the end of the descent. Then, the target airspeed is tracked via FD pitch orders. In MAN mode, the target airspeed is the manually selected airspeed. In FMS mode, the target airspeed is retrieved from the FMS descent schedule.

When VS is active, AT engagement activates the SPD XXXkt AT mode that controls engine power within operational limits to reach and maintain the target airspeed. In MAN mode, the target airspeed is the manually selected airspeed. In FMS mode, the target airspeed is retrieved from the FMS descent schedule. Then, the target vertical speed is tracked via FD pitch orders.

NOTE

If the inertial separator deploys, the FADEC changes engine ratings and reduces power. At the same time, the maximum available TRQ is reduced (the size of the green arc on the SEI reduces).
If the AT was active with a speed target requiring TRQ below the maximum available TRQ, the AT will try to maintain the speed at the selected target and then may move the THROTTLE forward.

Approach

For approaches (i.e. from the Initial Approach Fix), the SPD source switch must be in MAN mode or the autothrottle must be disengaged – refer to Paragraph Autothrottle (AT) Limits in Subsection 2.6. .

This is because use of AT in FMS mode until final approach may result in an unstabilized approach, because the predefined FMS descent schedule is not appropriate for approach. A go-around maneuver may be necessary, due to all of the following:

- Airspeed may be too high at GS/GP capture,
- Airspeed may be too high to timely configure the airplane before landing,
- AT automatically disengages at GS/GP capture and cannot be re-engaged, if in FMS mode.

As a result, only MAN mode is permitted for approach, to ensure an appropriate airspeed management until touchdown.

AT must be disengaged before 200 ft AGL. Then, engine torque must be manually adjusted to manage airspeed until touchdown.

NOTE

It is possible to perform an approach with the AT engaged and the AP/FD disengaged.

Go-Around

With the AT engaged, if the TO/GA pushbutton is pressed, both of the following simultaneously occur:

- The TO AT mode becomes active. TO AT mode sets and maintains maximum TRQ available.
- The GA FD lateral and vertical modes become active.

With the AT disengaged, if the TO/GA pushbutton is pressed, only the GA FD lateral and vertical modes become active. The AT remains disengaged.

NOTE

With AT engaged during takeoff or go-around, the THROTTLE position must be guarded by keeping the pilot's hand on the THROTTLE.

Landing

WARNING

If AT is still engaged during the flare, the airplane will fly at the selected approach airspeed, a few feet above the runway, not allowing a correct and safe landing. In that case, perform a go-around.

AT must be disengaged before 200 ft AGL. Then, engine torque must be manually adjusted to manage airspeed until touchdown.

FD Vertical Modes and Corresponding AT Modes Summary

The following table provides the correspondence between FD vertical modes and AT modes, depending on the MAN/FMS mode.

Active FD Vertical Mode	Corresponding AT Mode (MAN)	Corresponding AT Mode (FMS)
PIT	SPD XXXkt	SPD XXXkt
ALT, ALTS, ALTV, LVL	SPD XXXkt	RCR or MXCR or LRCR
VS	SPD XXXkt	SPD XXXkt
FLC (climb)	CLIMB	CLIMB
FLC (descent)	DESC	DESC
GS, GP, PATH	SPD XXXkt	SPD XXXkt
TO	TO	TO
GA	TO	TO
None (FD disengaged)	SPD XXXkt	SPD XXXkt

7.8 - Fuel System

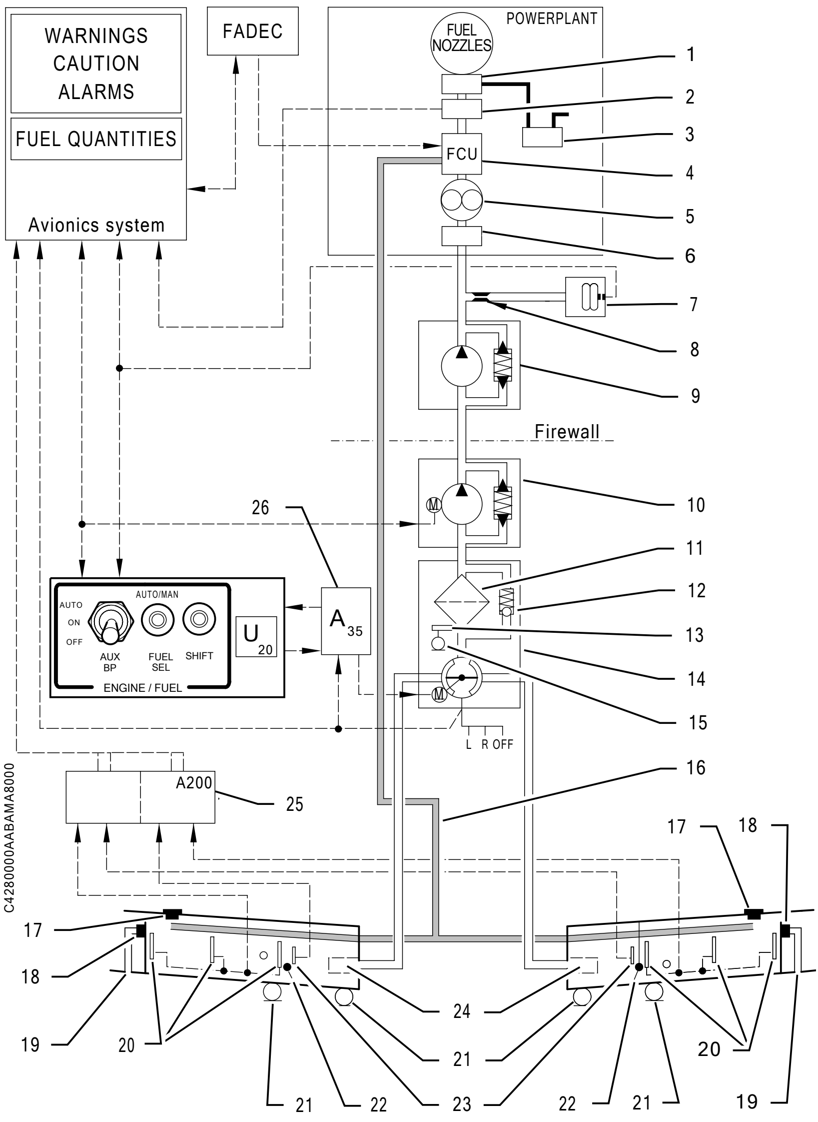
See Figure 7.8.1.

The fuel system is comprised of fuel tanks, a fuel unit, manual and automatic selectors, electric and mechanical boost pumps, an engine fuel system, a gauging installation, a monitoring installation and drains.

Key to Figure 7.8.1

1) Flow divider
2) Flowmeter
3) Collector tank
4) Fuel regulator
5) High pressure pump (HP)
6) Oil to fuel heater
7) Low pressure switch
8) Fuel jet
9) Main mechanical boost pump
10) Electric boost pump
11) Fuel filter
12) Filter clogging bypass valve
13) Filter clogging indicator
14) Fuel unit
15) Filter drain
16) Fuel return pipe
17) Filling port
18) Tank vent valve
19) NACA scoop
20) Fuel level gauges
21) Tank drain valve
22) Check-valve
23) Low level detector
24) Suction strainer
25) Fuel amplifier
26) Sequencer

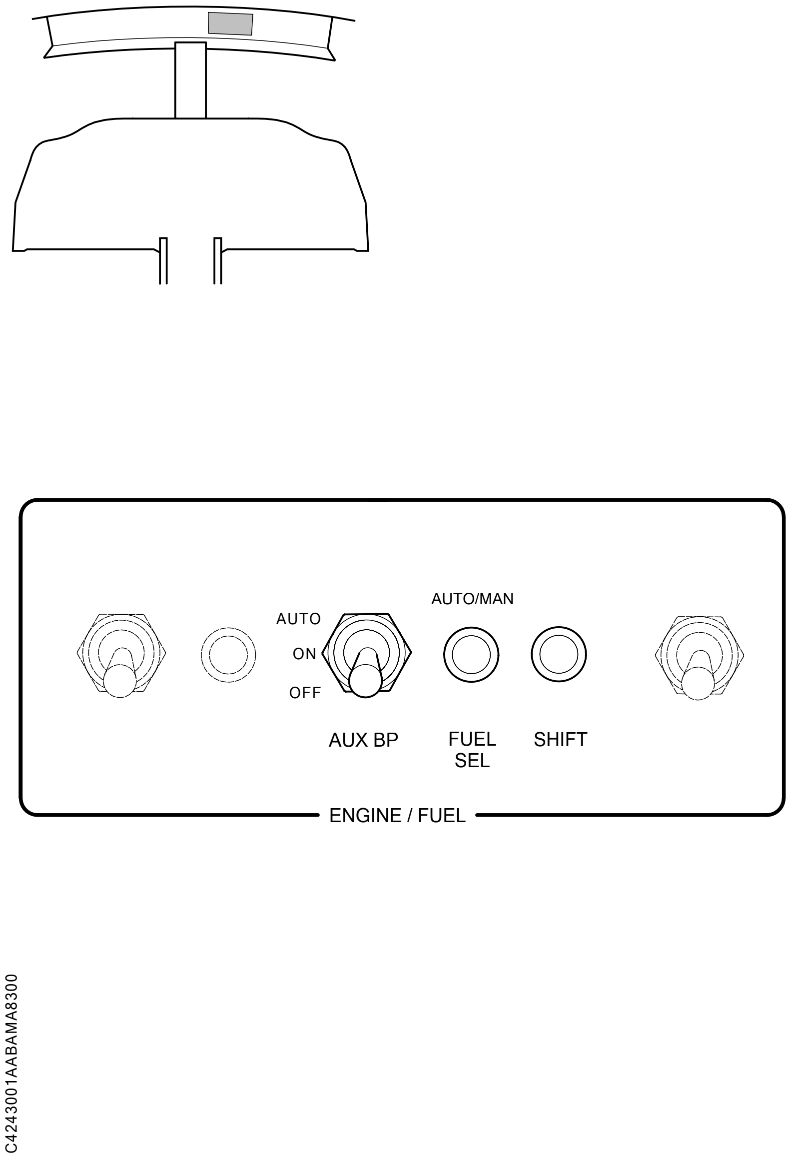
Figure 7.8.1 - Fuel System



Key to Figure 7.8.2

1) AUX BP switch
2) FUEL SEL pushbutton
3) SHIFT pushbutton

Figure 7.8.2 - Fuel Control Panel



Fuel Tanks

The fuel tanks are made with sealed casings located in each wing. Each fuel tank comprises a filling port located at the end of wing upper surface, two drain valves located at the lower surface (one is near the main landing gear on the trailing edge side, the other is near the wing root side at the leading edge), a vent valve located on the lower surface, a suction strainer and three level gauges.

Fuel Unit

The fuel unit combines the shut-off valve, tank selector and filter functions. It is connected to the manual selector through a mechanical control. The fuel filter is located in a bowl at the lower part of the unit. It is fitted with a bypass valve, a clogging indicator and a drain valve.

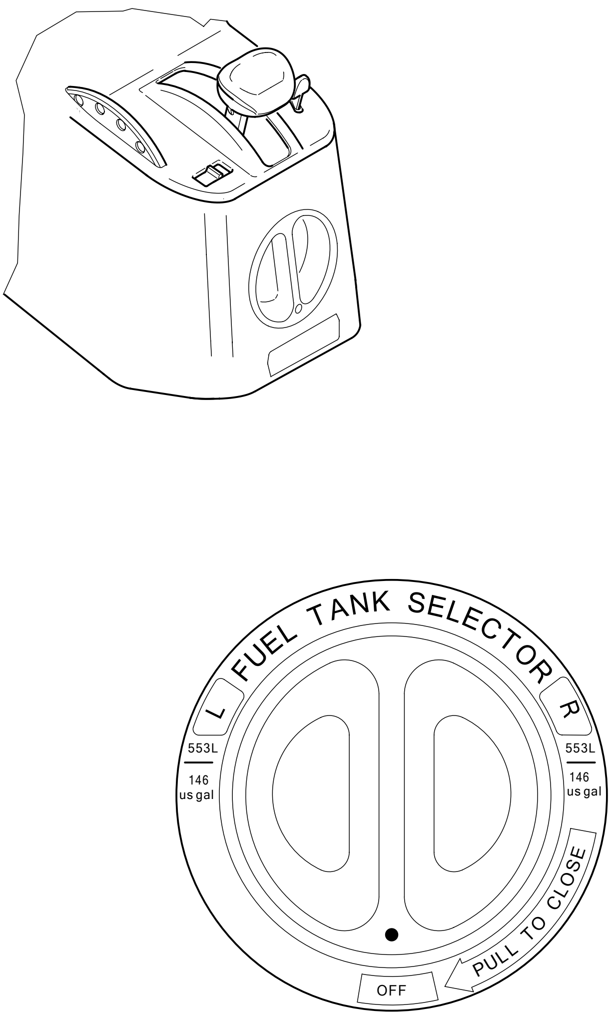
Tank Manual Selector

See Figure 7.8.3.

The FUEL TANK SELECTOR is located on the pedestal's rear face. It allows a manual selection of the tank to be used (R or L), and to place the selector in the OFF position. To change from the L position to the OFF position, turn the selector clockwise (L → R → OFF). Changing the selector from the R position to the OFF position requires a voluntary action from the pilot (pulling and turning). The requirement to pull and turn the selector to the OFF position prevents an involuntary positioning of the selector OFF.

When the unit is set to OFF, **FUEL OFF** is displayed in the CAS window.

Figure 7.8.3 - Manual Selector of Fuel Tanks



Automatic Tank Selector

See Figure 7.8.2 and Figure 7.8.3.

Automatic tank selection enables the engine to be fed from one tank or the other in predetermined sequences without the pilot's intervention. These sequences depend on the airplane’s configuration (on the ground, in-flight, and when CAS messages of a fuel low situation are displayed).

The automatic tank selection system comprises an electronic sequencer, an actuator attached on the fuel unit, the FUEL SEL pushbutton and the SHIFT pushbutton located on the ENGINE/FUEL panel.

The automatic selector is operated by pressing the FUEL SEL pushbutton to the AUTO position (status light in blue) and setting the manual selector to R or L.

The following table lists the status light’s colors corresponding to the system state:

System state	Status light
AUTO position	
MAN position	

Selector Operation

When the system is operated, **AUTO SEL** disappears; the sequencer chooses a tank (R or L) and positions the FUEL TANK SELECTOR to the selected tank via the actuator. The sequencer controls the time during which the selected tank will operate.

This time varies, depending on the following conditions:

- When the airplane is on the ground: the tank is changed every 1 minute and 15 seconds.
- When the airplane is in flight: the tank is changed every five minutes, as long as **FUEL LOW L** or **FUEL LOW R** does not appear. When the first CAS message of a fuel low situation is displayed, the sequencer immediately selects the other tank. The selected tank will operate until the second CAS message of a fuel low situation is displayed. When **FUEL LOW L-R** is displayed, the sequencer changes tanks every 1 minute and 15 seconds.

NOTE

The manual selector's positioning is driven by the fuel unit; it is positioned on the R or L mark corresponding to the tank selected by the sequencer. Therefore, the pilot is continuously aware of which tank is in operation.

Test for System Proper Operation

The SHIFT pushbutton enables the pilot to test the system's proper operation at any time.

When the system is operating, the fuel tank is changed when the SHIFT pushbutton is pressed once.

If the airplane is on ground or in flight, and CAS messages of a fuel low situation are not displayed, the newly-selected tank remains operating and a new sequence is initiated.

NOTE

This procedure enables the tank to be selected from which the pilot wants to take fuel, even when the automatic tank selector is in operation.

In all cases, proper automatic tank selector operation is indicated by the rotation of the manual selector each time the automatic selector switches tank or when pressing the SHIFT pushbutton.

Setting the FUEL SEL pushbutton to the MAN position (status light in green) or setting the FUEL TANK SELECTOR to OFF position results in system deactivation and the display of AUTO SEL. AUTO SEL is also displayed when order given by the sequencer has not been executed after 12 seconds.

Electric Boost Pump (AUX BP)

See Figure 7.8.2.

The electric boost pump is an auxiliary pump located between the fuel unit and the main mechanical boost pump. It is controlled through the AUX BP switch located on the ENGINE/FUEL panel. This switch allows the two pump operating modes to be stopped or selected:

- when set to ON, the electric boost pump operates permanently,
- when set to AUTO, the electric boost pump is automatically operated if there is a fuel pressure drop at the mechanical boost pump outlet.

Main Mechanical Boost Pump

The mechanical boost pump is attached to the accessory gearbox and supplies fuel necessary for engine operation.

Engine Fuel System

The engine fuel system consists of a mechanical engine driven fuel HP pump, an oil to fuel heater, an engine fuel filter paired with a differential pressure sensor, a fuel temperature sensor, a FCU, a fuel divider and fuel nozzles.

Refer to Paragraph Engine Accessories in Subsection 7.6. .

Fuel Gauging Installation

Fuel quantity is measured using capacitive-type sensors. Fuel quantity is displayed in US gallons.

Three fuel level gauges are installed in each tank. The fuel level gauge on the wing root side is equipped with a low level detector which leads to the display of CAS messages of a fuel low situation when usable fuel quantity remaining in the concerned fuel tank is under approximately 9 USG (34 liters).

Fuel System Monitoring

Fuel system monitoring is ensured by the following CAS messages:

Table 7.8.1 - Fuel System Monitoring CAS Messages

CAS message	Description
FUEL OFF	FUEL TANK SELECTOR is set to OFF
FUEL PRESS	Fuel pressure at mechanical boost pump outlet is under 10 psi (± 2 psi)
FUEL CLOGGING	Engine fuel filter is clogged and fuel is no longer filtered
FUEL CLOGGING	Engine fuel filter clogging is imminent
AUX BP ON	Electric fuel boost pump is running (manual or automatic mode)

Continue ►

► *Continuing*

Table 7.8.1 - Fuel System Monitoring CAS Messages

CAS message	Description
FUEL LOW L-R *	Fuel quantity is less than, or equal to, 9 USG (34 liters) of usable fuel in the specified tank
LOW LVL FAIL L-R *	Fuel low level sensor has failed
AUTO SEL	Fuel sequencer is inactive or a fault has occurred
FUEL IMBALANCE	Fuel tanks are imbalanced by more than 15 USG (57 liters) for more than 30 seconds
* Only the affected fuel tank (L, R or L-R) is displayed on the CAS message	

Fuel System Draining and Clogging Indication

See Figure 7.8.4.

The fuel system comprises five drain points:

- a drain on the filter bowl,
- two drain valves on each tank, located on wing lower surface:
  - one at the wing root, and
  - one outboard of the landing gear well.

These drains allow a draining of water or sediments that are contained in the fuel.

Fuel tank drain valves are provided with a slot which enables them to be opened with a screwdriver.

WARNING

Fuel system draining shall be performed prior to the first flight of the day and after each tank refueling, using a sampler to draw fuel at the two drain valves of each tank and at the filter vent valve.

Filter clogging is indicated by a red filter bypass flag on the fuel unit that is externally visible when an inspection door located on the left side under the front baggage compartment is open. A pushbutton adjacent to the inspection door controls the illumination of a light that provides improved visibility of the clogging indicator. This indicator shall be visually checked during preflight inspection.

NOTE

When the engine fuel filter gets clogged in flight, **FUEL CLOGGING** is diplayed, and the filter is bypassed in order not to interrupt fuel flow to the engine.
In this situation, the engine is supplied with non-filtered fuel.
Maintenance action is required before further flight.

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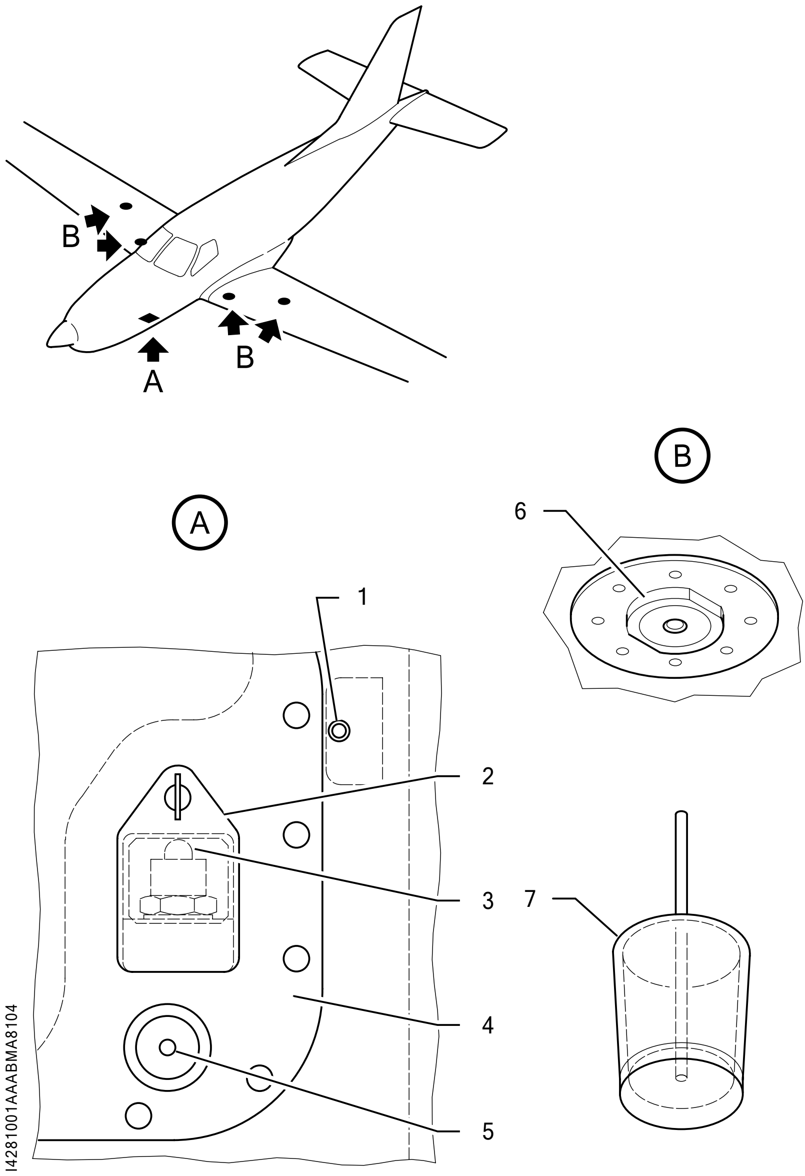
Key to Figure 7.8.4

1) Lighting pushbutton
2) Mirror door
3) Clogging indicator
4) Central access door
5) Filter drain
6) Tank drain
7) Drain bowl

Figure 7.8.4 - Fuel System Draining Points and Clogging Indicator



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7.9 - Electrical System

See Figure 7.9.1, Table 7.9.1 and Figure 7.9.2.

The airplane is fitted with a 28-volt direct-current electrical system.

Electrical supply is obtained from various power supplies:

- a starter generator,
- a standby generator,
- a battery,
- a ground power unit, via a plug, located on left side.

Connection relays, main bus bar, generator regulation and protection systems and control logic systems are grouped in the electrical power system box located in the front baggage compartment upper section.

Electrical system indicating is displayed on the MFD and monitoring is ensured by CAS messages.

On ground, when the crash lever is positioned in the UP position (SOURCE selector in the OFF position), the battery supplies the electrical power system through the BATT BUS. A Power Up Built In Test (P-BIT) of the EPS internal functions is performed to verify the operating status. In case of failure detection, the "EPS – Service required" message appears in the message window of the GTC.

Figure 7.9.1 - Electrical Diagram

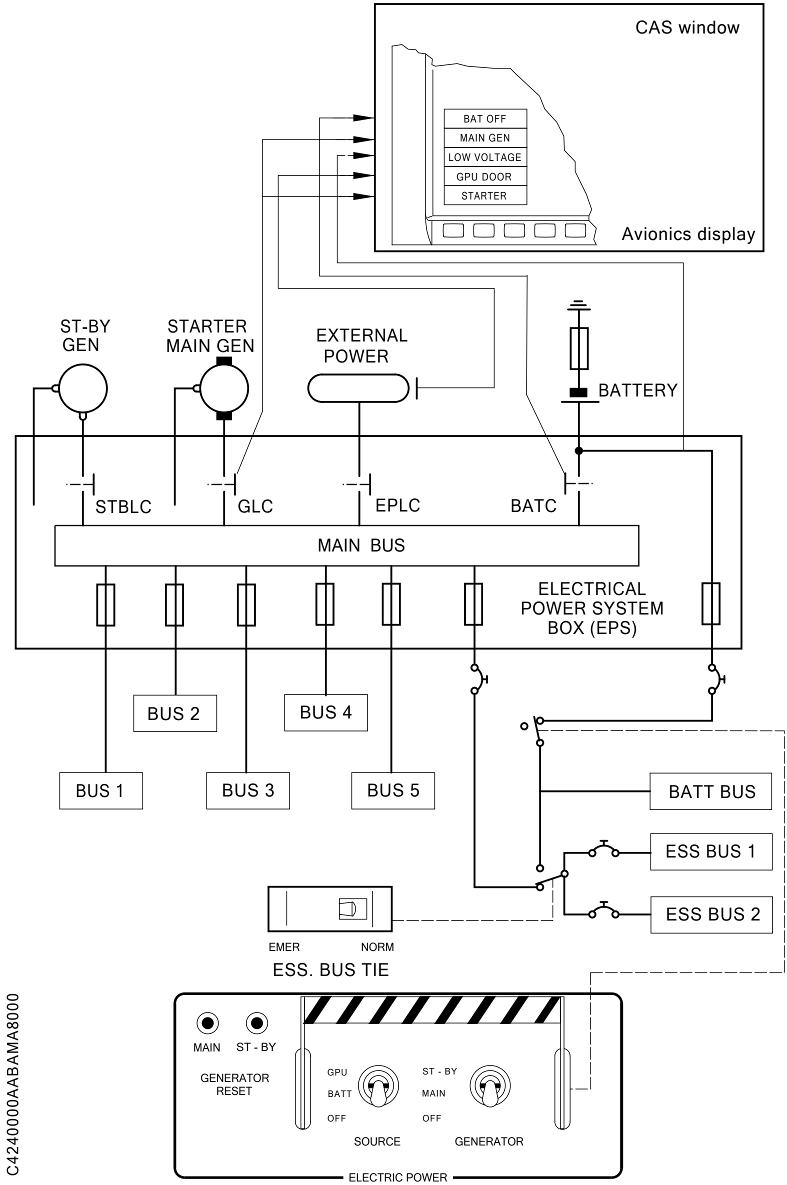


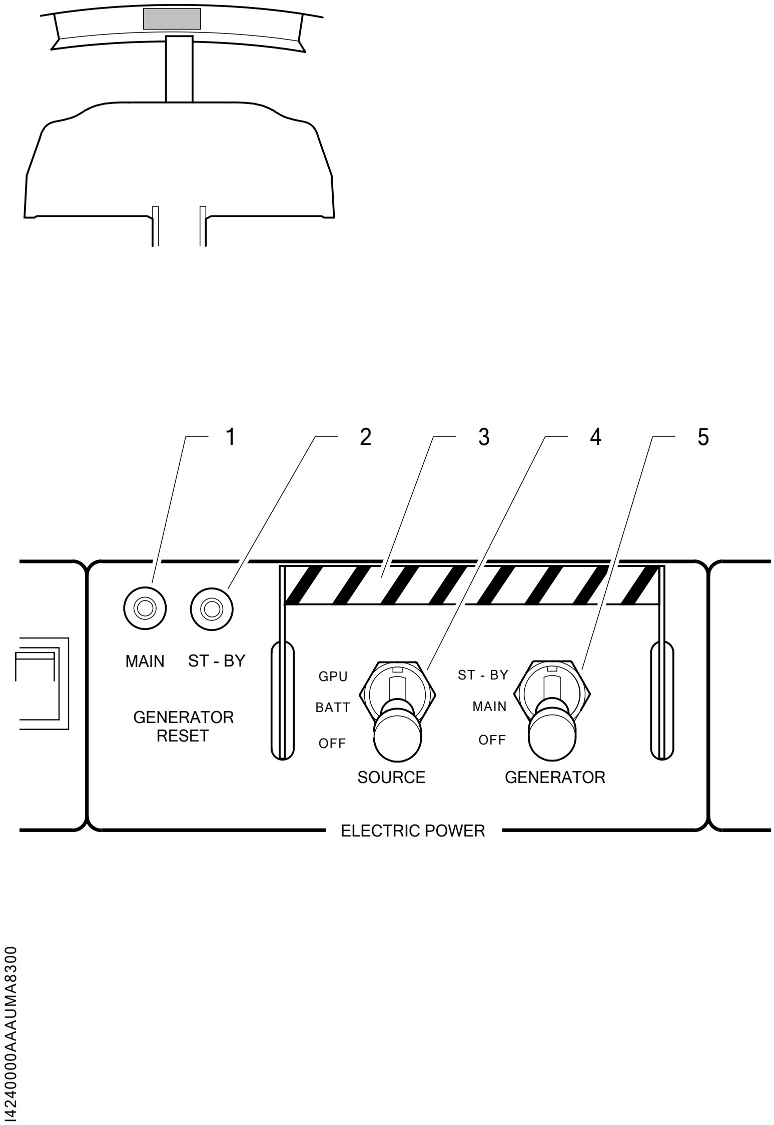
Table 7.9.1 - Bus Bars Supply Configurations

Switches				Buses are powered by				
Crash lever	SOURCE	GENERATOR	ESS BUS TIE	BATT BUS	ESS BUS 1	ESS BUS 2	BUS 1 TO 5	
UP	BATT	OFF	NORM	Battery	Battery	Battery	Battery	
UP	BATT	MAIN	NORM	Battery & MAIN	Battery & MAIN	Battery & MAIN	Battery & MAIN	(*)
UP	BATT	ST-BY	NORM	Battery & ST-BY	Battery & ST-BY	Battery & ST-BY	Battery & ST-BY	(*)
UP	OFF	MAIN	NORM	MAIN	MAIN	MAIN	MAIN	
UP	OFF	ST-BY	NORM	ST-BY	ST-BY	ST-BY	ST-BY	
UP	BATT	OFF	EMER	Battery	Battery	Battery	None	
(*) In that case, power is done by MAIN or ST-BY and battery is used as a floated battery.								

Key to Figure 7.9.2

1) MAIN GENERATOR RESET pushbutton
2) ST-BY GENERATOR RESET pushbutton
3) Crash lever
4) SOURCE selector
5) GENERATOR selector

Figure 7.9.2 - Electrical Control



Starter Generator

The starter generator is the main electrical power source. It only performs its generator function when starting sequence is completed.

Generator connection with main bus bar is controlled through the GENERATOR selector set to MAIN. It will be effective when connection conditions are met. Generator connection is indicated by **MAIN GEN** disappearance.

NOTE

Starter generator will not supply the airplane if the SOURCE selector is on GPU.
On ground, generator load should be maintained below 200 A.

Standby Generator

The standby generator supplies a 28-volt standby direct current which may be used in case of main generator failure.

Generator connection with main bus bar is controlled through the GENERATOR selector set to ST-BY. It will be effective when connection conditions are met.

NOTE

The standby generator will not supply the airplane if the SOURCE selector is on GPU.
In order to prevent possible errors during flight, access to ST-BY position requires a double action from the pilot (pull to unlock). On ground, avoid using the standby generator at full load.

Battery

The battery provides the power required for starting when no ground power unit is available and is a power supply source when engine driven generators are stopped.

The battery is always connected to the BATT BUS bar except when the crash lever is pulled down.

Battery connection to main bus bar is controlled through the SOURCE selector set to BATT.

BAT OFF is displayed in the CAS window when the battery is isolated from the main bus and when main bus is supplied through another source.

Ground Power Receptacle

The ground power receptacle allows connection to a ground power unit.

Ground power receptacle connection with main bus bar is controlled through the SOURCE selector when set to GPU. It will be effective when connection conditions are met.

When the SOURCE selector is set to GPU, the battery and the ground power unit are connected simultaneously on main bus bar.

Ground power receptacle door opening is indicated by **GPU DOOR** displayed in the CAS window.

NOTE

Before connecting a GPU to the airplane, ensure that the voltage of the GPU is regulated between 27.5 volts and 28.5 volts.
The amperage output needs to be consistent with the airplane placard in front of the compartment door: GPU shall provide a current limiting function, and current limit shall be set per placard.
Do not use batteries pack as GPU sources.

CAUTION

Use of a ground power source with voltage in excess of 28.5 volts or current exceeding current limit indicated on placard may damage the airplane electrical system.

Distribution

Airplane electrical systems are connected to bus bars and protected by pull-off type breakers located on the right-side upholstery panel – see Table 7.9.2 and Figure 7.9.3. In case of overload of a system, the breaker triggers and switches the system off.

CAUTION

If a breaker corresponding to a non-essential system trips, do not reset in flight.

If a breaker corresponding to an essential system trips:

- allow it to cool for about three minutes, then the breaker may be reengaged (pressed down)
- if the breaker trips again, do not reset.

BUS 1, BUS 2, BUS 3 and BUS 4 bus bars are directly connected to main bus bar and protected by fuses located in the electrical power system.

The ESS BUS 1 and ESS BUS 2 essential bus bars are connected to main bus bar through the ESS BUS TIE switch set to NORM. The ESS BUS TIE switch is attached to the breaker panel; NORM position is protected and locked by a cover. Common power supply to both essential bus bars is protected by a fuse, located in the EPS box, and a breaker, located in the front cargo compartment on Frame C2 right side, each bar being individually protected by a breaker.

The BATT BUS bar is directly connected to the battery; it is protected by a fuse, located in the EPS box, and a breaker, located in the front cargo compartment on Frame C2 left side.

NOTE

The electrical distribution of bus bars is described in Figure 7.9.4, Figure 7.9.5 and Figure 7.9.6.

Table 7.9.2 - Breaker Panel (Typical arrangement)

ESS BUS TIE	
BUS 1	
AP SERVOS	Autopilot servo protection
FLAPS	Flaps protection
AIL TRIM	Aileron trim protection
RUD TRIM	Pitch trim protection
BUS 2	
LDG GEAR	Landing gear general supply protection
ESS BUS 1	
ESS BUS 1	Essential bus 1 circuit protection
PFD 1	Primary Flight Display 1 protection
COM 1	VHF 1 protection
GPS/NAV 1	GPS NAV 1 protection
ADC 1	Air Data Computer 1 protection
ENGINE AIRFRAME 1	Powerplant cont. protec.: Oil temp. & pres., torque, propeller

Continue ►

► *Continuing*

Table 7.9.2 - Breaker Panel (Typical arrangement)

ENGINE AIRFRAME 2	Powerplant cont. protection: Ng, flowmeter & ITT
FUEL GAGE 1	Left-side fuel gauge protection
FUEL GAGE 2	Right-side fuel gauge protection
FADEC CH. A	FADEC channel A protection
ESS BUS 2	
ESS BUS 2	Essential bus 2 circuit protection
PASS MASKS	Passengers' oxygen masks protection
STBY INSTR	Standby Attitude Module (MD302) protection
AUDIO	Audio control panel protection
TOUCH CTRL 1	Touchscreen controller 1 protection
XPDR 1	Transponder 1 protection
AHRS 1	Attitude and Heading Reference System 1 protection
LDG SIG	Landing gear indicating system protection
CPCS PWR1	Cabin Pressurization Control System power supply 1 protection
CAB BLEED	Cabin bleed air system protection
IGNITION	Powerplant ignition protection
BUS 1	
AP CTRL	Flight controller protection
PFD 2	Primary Flight Display 2 protection
COM 2	VHF 2 & radio protection
GPS/NAV 2	GPS NAV 2 protection
ADC 2	Air Data Computer 2 protection
XPDR 2	Transponder 2, if installed protection
VDL	Controller-Pilot Data Link Communications system, if installed protection
AIRFRAME DE ICE	Empennage and wing leading edges deicing
INERT DE ICE	Inertial separator protection

Continue ►

► *Continuing*

Table 7.9.2 - Breaker Panel (Typical arrangement)

R WS DE ICE	Right-side windshield deicing protection
PITOT L	Pitot L heating protection
TOUCH CTRL 2	Touchscreen controller 2 protection
STORM	Stormscope protection, if installed
AHRS 2	Attitude and Heading Reference System 2 protection
STROBE LIGHT	Strobe lights protection
SHAKER	Stick shaker protection
HOME SAFE	HomeSafe emergency function protection
BUS 2	
ICE DETEC	Ice detection system protection
PROP DE ICE	Propeller deicing protection
ICE LIGHT	Left wing leading edge lighting and lighting test protection
FLAPS SIG	Trim and flaps regulator protection
AIR COND	Cabin ventilation and vapor cycle system protection
CPCS PWR2	Cabin Pressurization Control System power supply 2 protection
A/C COMP	Air conditioning compressor clutch protection
NAV/RECOG LIGHT	Navigation and recognition lights protection
CABIN DOORS	Cabin doors opening protection
FADEC CH. B	FADEC channel B protection
MFD	Multifunction display protection
CABIN	Passengers' reading lamps protection
PANEL LIGHT	Instruments lighting protection
TAS	TAS, if installed protection
WXR	Weather radar protection
DATA LINK	Data Link, if installed protection
LDG CONT	Landing gear control protection

Continue ►

► *Continuing*

Table 7.9.2 - Breaker Panel (Typical arrangement)

SATCOM	SATCOM protection, if installed
SATCOM HEATER	SATCOM heater protection, if installed
BUS 3	
OXYGEN PRESS	Oxygen/Pressure indication protection
L WS DE ICE	Left-side windshield deicing protection
PITOT R & STALL	Pitot R and stall warning heating protection
AOA	Angle of Attack protection
RADIO ALTI	RADIO ALTI, if installed protection
DME	DME protection, if installed
FUEL SEL	Tank selector timer protection
AUX BP	Electrical fuel pump protection
ADF	ADF protection, if installed
TAXI LIGHT	Taxi light protection
LH LDG LIGHT	Left-side landing light protection
RH LDG LIGHT	Right-side landing light protection
PULSE SYST	Pulse lite system protection, if installed
BATT BUS	
EMER LIGHT	Instrument panel emergency lighting protection
GND CLR	Ground clearance protection
ACCESS	Cabin access lighting protection
EPS	Electrical power system protection

Figure 7.9.3 - Breaker Panel (Typical arrangement)

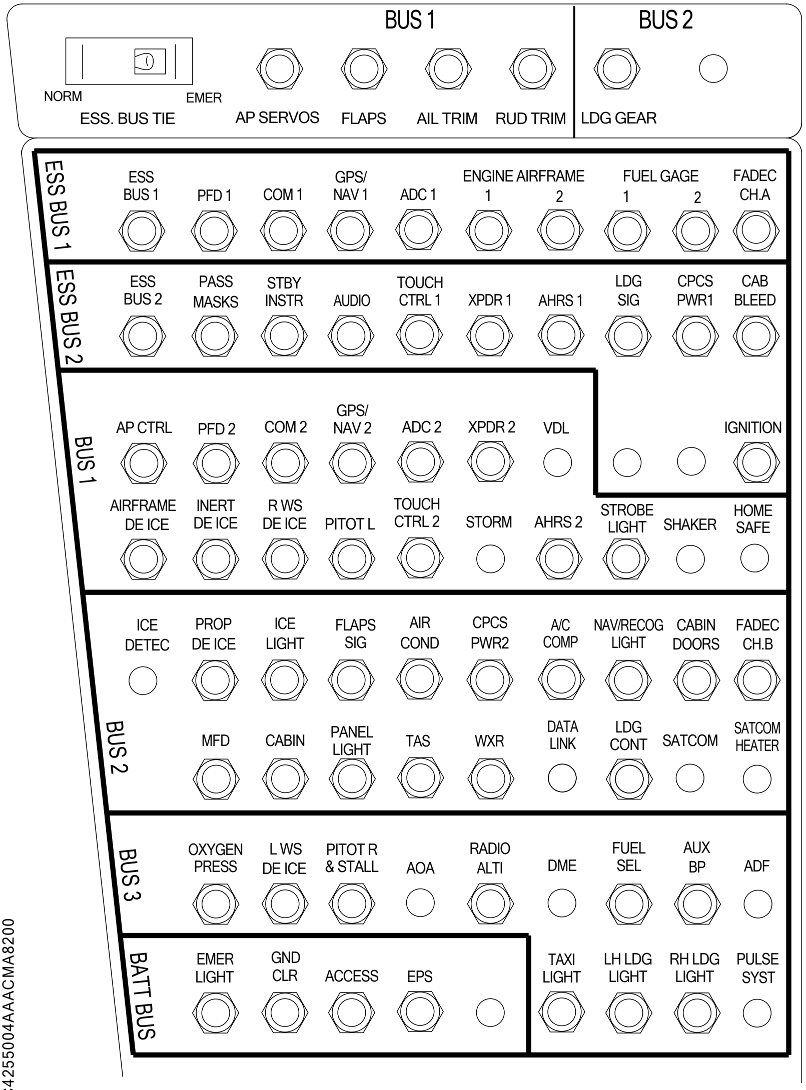


Figure 7.9.4 - Electrical Distribution of Bus Bars (1/3)

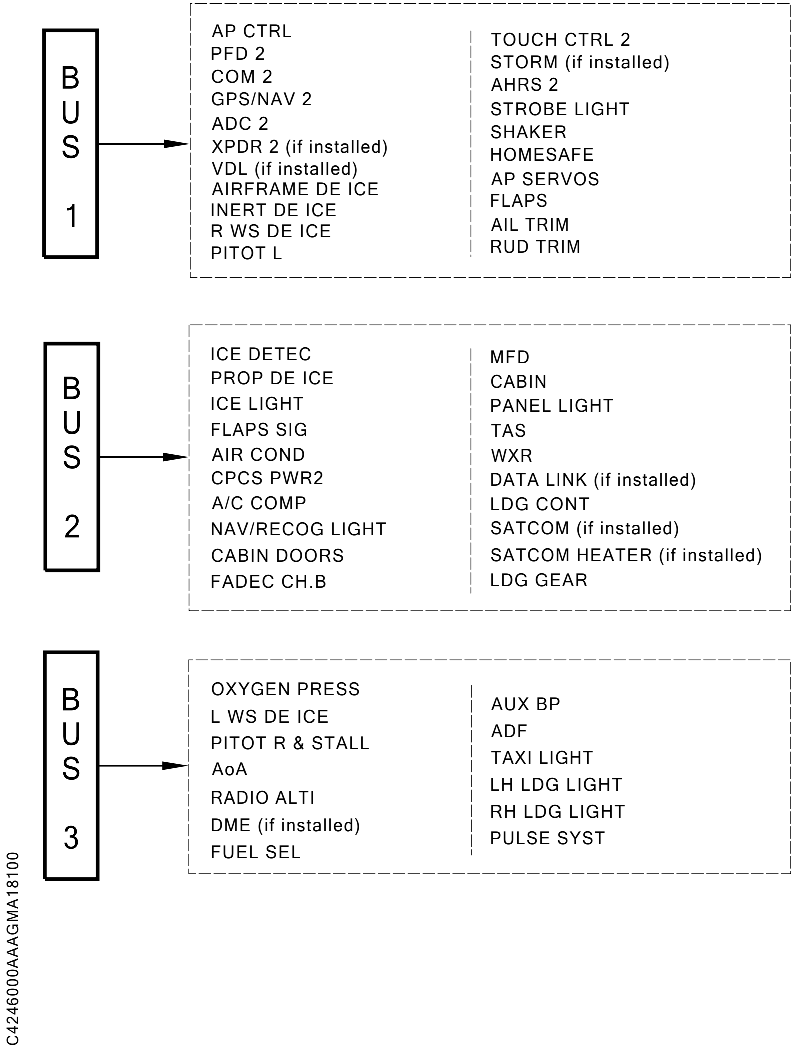
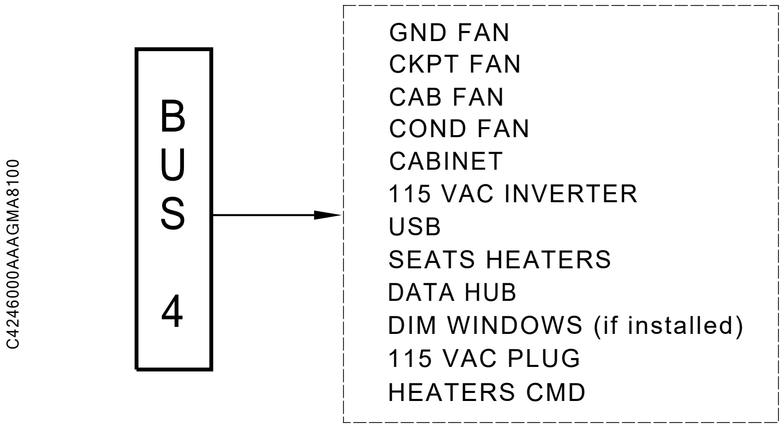


Figure 7.9.5 - Electrical Distribution of Bus Bars (2/3)



NOTE

Breakers located on Frame C13bis and Frame C15.

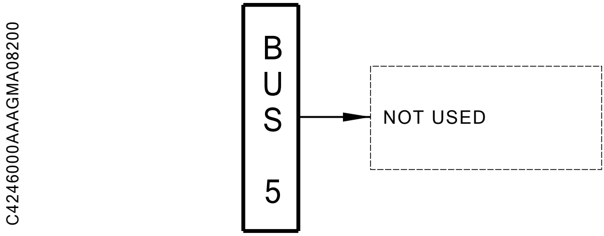
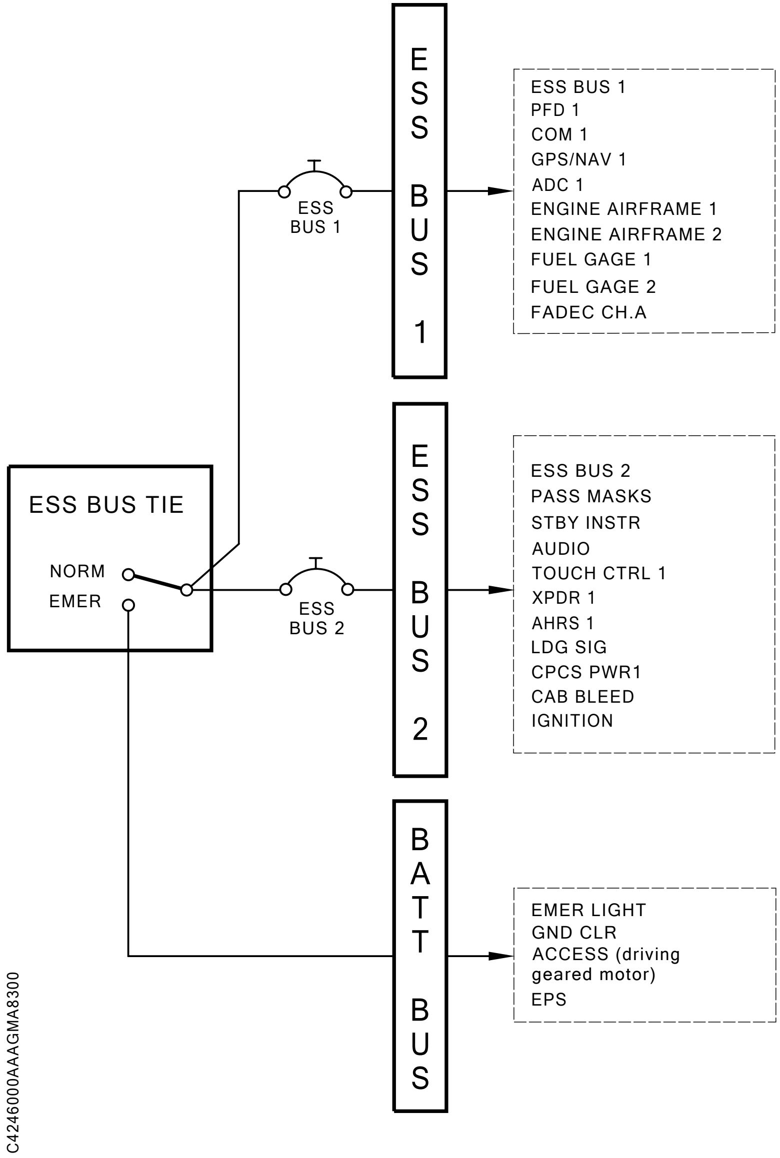


Figure 7.9.6 - Electrical Distribution of Bus Bars (3/3)



Emergency Use

With both generators deactivated in flight, it is still possible to use battery power to supply all airplane systems maintaining the SOURCE selector on BATT position.

In order to save battery power, it is possible to shed the charges that are not essential for flight safety, for that set the ESS BUS TIE switch to EMER.

In this configuration, only ESS BUS 1, ESS BUS 2 and BATT BUS bars are supplied.

NOTE

Supplying BUS 1, BUS 2, BUS 3 and BUS 4 bars is always possible, resetting temporarily the ESS BUS TIE switch to NORM position.

Indicating

Electrical system indicating consists of voltage and ampere indicating – refer to the Garmin Pilot's Guide for further details.

The following CAS messages may be displayed in the CAS window:

Table 7.9.3 - Electrical System Monitoring CAS Messages

CAS message	Description
BAT OFF	Battery is not connected to main bus bar
MAIN GEN	Starter generator is not connected to main bus bar
LOW VOLTAGE	Battery voltage is below the minimum value
GPU DOOR	Ground power receptacle access door is not closed

Protection - Safety

See Table 7.9.1 and Figure 7.9.2.

The electrical power system provides systems protection in case of:

- overvoltage,
- short-circuits.

In case of disconnection of starter generator or standby generator following a failure, MAIN or ST-BY reset can be done by pressing the corresponding GENERATOR RESET MAIN or GENERATOR RESET ST-BY pushbutton.

A battery reset is done by setting the SOURCE selector to OFF and back to BATT.

In case of disconnection of ground power unit following a failure, it is possible to re-activate the system by turning the SOURCE selector to OFF and setting it again to GPU position to reset the protection.

A crash lever located on the upper panel center part allows isolating simultaneously the BATT BUS bar and setting to OFF the SOURCE and GENERATOR selectors when lowered. In this case all bus bars are isolated from generators.

Exterior Lighting

See Figure 7.9.7.

The airplane is equipped with three strobe and navigation lights, two landing lights, two taxi lights, two recognition lights and a wing leading edge icing inspection light.

Landing Lights

The landing lights are embedded in the winglets' leading edge. These lights are controlled by setting a switch located on upper panel to LDG.

The Pulse lite system, if installed, allows the pilot to have the landing lights flash continuously, making the airplane more visible to the control tower and to nearby aircraft.

Taxi Lights

The taxi lights are embedded in the winglets' leading edge. These lights are controlled by setting a switch located on upper panel to TAXI.

Navigation Lights and Strobe Lights

Two strobe and navigation lights are installed in the winglets and one on the tail cone.

They are controlled by the NAV and STROBE switches located on upper panel.

NOTE

At night, do not use anti-collision lights in fog, clouds, or mist – as reflection of the flashing lights may lead to dizziness and disorientation.

Recognition Lights

Recongnition lights are embedded in the winglets.

They are automatically switched on when the airplane is on ground.

Leading Edge Icing Inspection Light

The leading edge icing inspection light is installed on the left side of the fuselage and illuminates the wing leading edge. This light is controlled by the ICE LIGHT switch installed on the DE ICE SYSTEM panel.

Forward Compartment Light

The dome light illumination of the forward compartment is controlled by the switch located in the upper section of the door frame.

Fuel Unit Compartment Light

The lighting of the fuel unit compartment allows improving the visibility of the clogging indicator by pressing the pushbutton located besides the inspection door.

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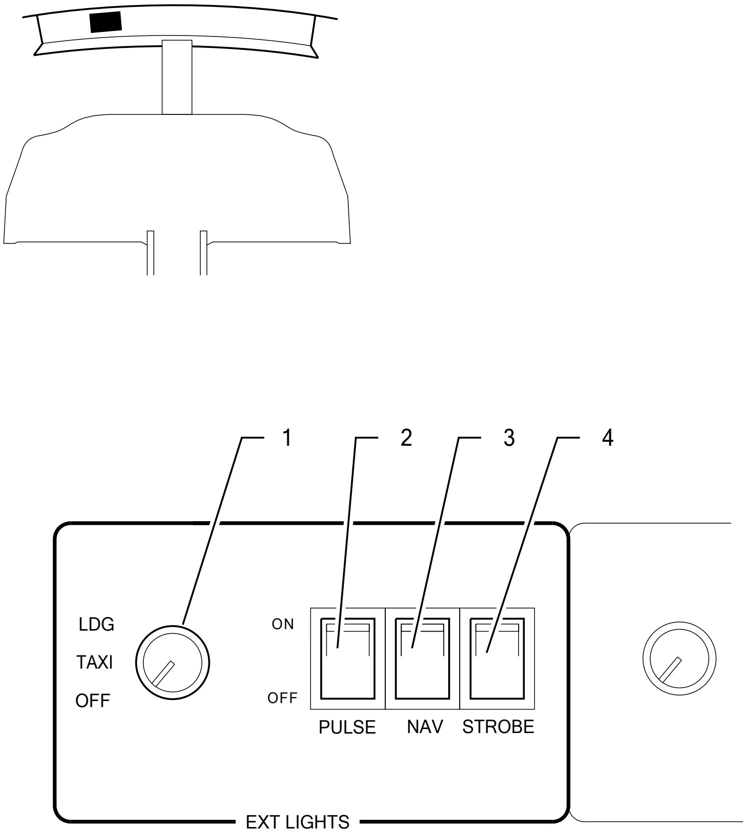
Key to Figure 7.9.7

1) Taxi and landing light switch
2) Pulselite system switch
3) Navigation lights switch
4) Strobe lights switch

Figure 7.9.7 - Exterior Lighting Controls



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Interior Lighting

See Figure 7.9.8.

Interior lighting consists of access, cabin, instrument panel, instruments, baggage compartment and emergency lighting.

Access Lighting

Access lighting consists of moon-lights located on the ceiling upholstering, two for the cabin and cockpit area and two for the baggage compartment. The access lighting is controlled by the ACCESS switch on INT LIGHTS panel or through the cabin touchscreen control panel located above the passenger's table.

NOTE

The cabin touchscreen control panel also allows passengers to set the cabin temperature and fan speed.

If the crash lever is down, access lighting is automatically cut out after three minutes.

If the crash lever is up, there is no access lighting automatic cut out.

Cabin Lighting

Cabin lighting consists of two individual floodlights for front seats and six individual floodlights for rear passenger seats. Each floodlight is touch-controlled and dimmable by directly touching the light. The floodlights can also be controlled through the cabin touchscreen control panel located above the passenger's table.

NOTE

The cabin touchscreen control panel also allows passengers to set the cabin temperature and fan speed.

The pilot can switch off the cabin lights by setting the CABIN switch to OFF.

Instrument Panel Lighting

Instrument panel lighting is controlled by the PANEL rheostat located on the INT LIGHTS panel. This lighting consists of backlighted panels and a led lighting for the pedestal.

Breaker Panel Lighting

Breaker panel lighting is controlled by a switch located on the instrument panel near the pilot’s control wheel.

Emergency Lighting

Emergency lighting consists of two swiveling floodlights located on both sides of the cockpit overhead panel above front seats. It illuminates the instrument panel assembly in case of visor lighting tubes and/or instrument integrated lighting failure.

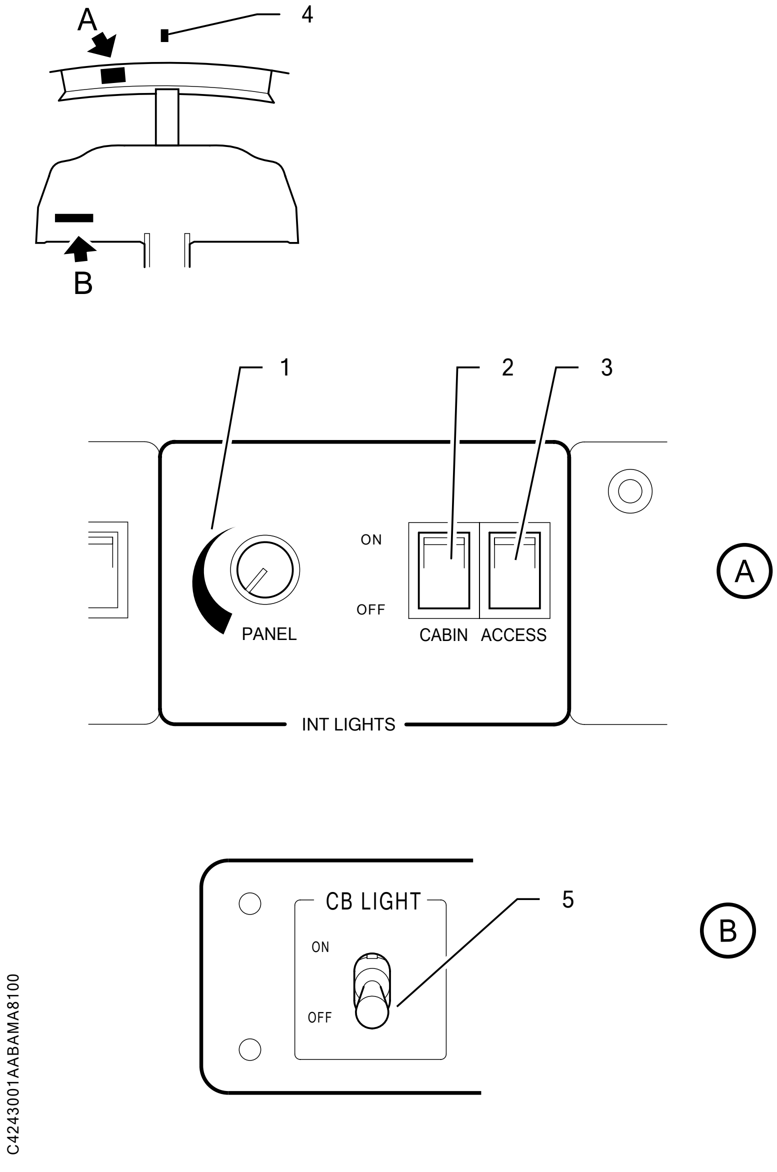
A rheostat located on the cockpit overhead panel controls emergency lighting operation and intensity. Forward rotation of control knob allows changing from OFF position to minimum lighting then increasing lighting to maximum brightness.

>> preMod: MOD70-0800-00

Key to Figure 7.9.8

1) Instrument panel lighting switch (rheostat)
2) Cabin lighting switch (rear seats reading light)
3) Access lighting pushbutton
4) Emergency lighting switch
5) Breaker panel lighting switch

Figure 7.9.8 - Internal Lighting Controls



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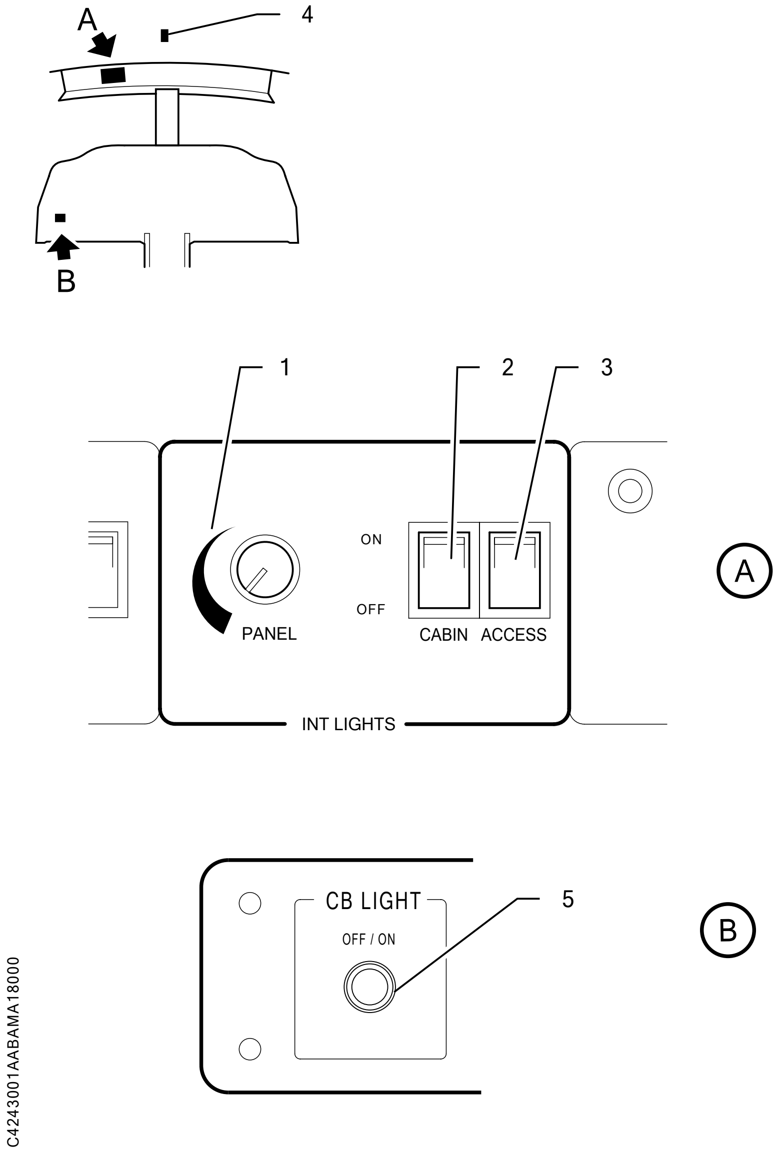
>> postMod: MOD70-0800-00

Key to Figure 7.9.9

1) Instrument panel lighting switch (rheostat)
2) Cabin lighting switch (rear seats reading light)
3) Access lighting pushbutton
4) Emergency lighting switch
5) Breaker panel lighting pushbutton

Figure 7.9.9 - Internal Lighting Controls



>> *All*

115 V Plug

The 115 V plug permits to connect external equipment (max power: 250 W).

The plug is located on the right aft side of the cabin compartment, in the storage pocket.

BatteryMINDer Charger

While the airplane is on ground, the BatteryMINDer charger is used to maintain a constant charge of the battery from main electrical network. It is an external equipment.

The BatteryMINDer charger is connected to a plug located next to the GPU plug.

The Quick-Disconnect connector shall be connected to the battery to allow the BatteryMINDer charger to keep the charge of the battery.

For servicing, refer to Paragraph BatteryMINDer Charger in Subsection 8.7. .

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7.10 - Cabin Air Temperature and Pressurization

NOTE

A list of abbreviations used in this chapter is given in Figure 7.10.1.

The airplane is equipped with an Environmental Control System (ECS), which ensures cabin air temperature and pressurization control – see Figure 7.10.1.

- Cabin Air Temperature corresponds to the cockpit / cabin air flow and temperature management.
- Pressurization corresponds to the cabin altitude / rate of change management.

The ECS is composed of three sub-systems:

- Engine Bleed Air System (EBAS),
- Cabin Pressurization Control System (CPCS),
- Dual-zone Temperature Control System (TCS).

The ECS controls are located on:

- the PRESSURIZATION and the ECS panels on the right side of the left control wheel,
- a touchscreen control panel located above the passenger's table.

The pilot monitors the system through information and CAS messages displayed in the CAS window. These indications are independent of the ECS controls and internal sensors.

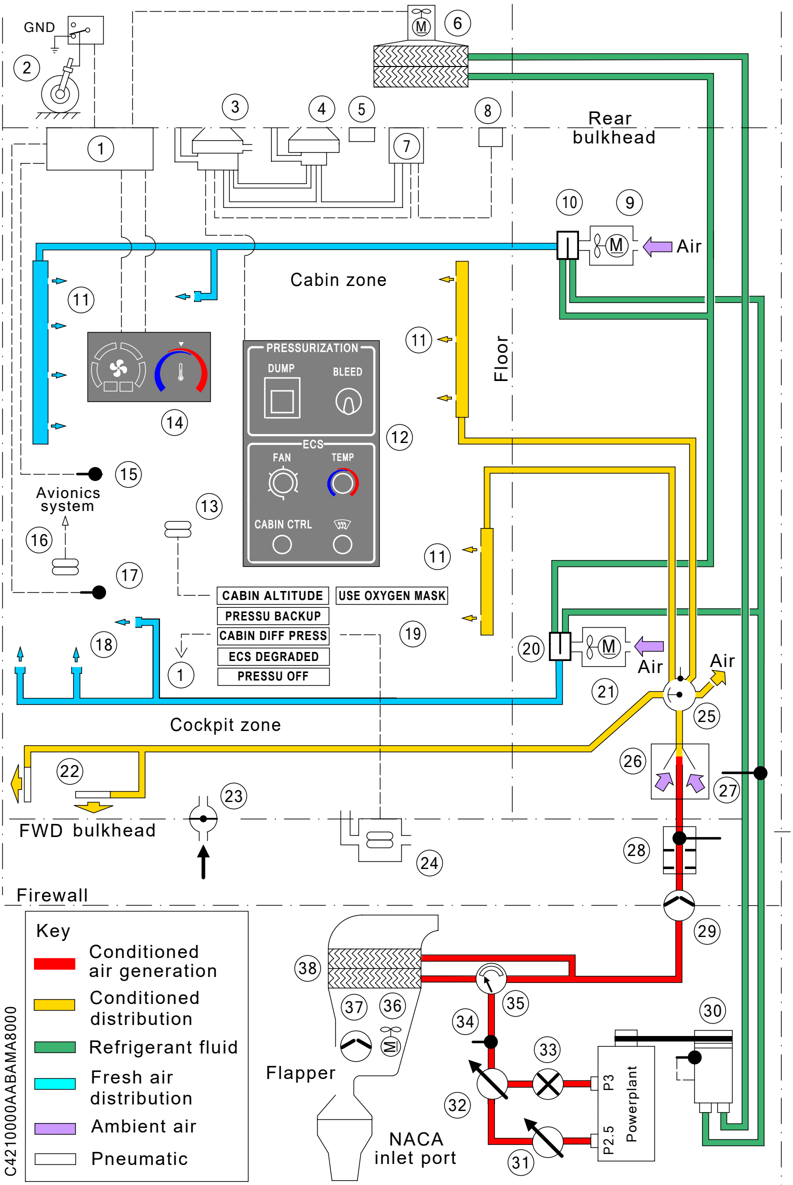
Key to Figure 7.10.1

1) ECS controller
2) Ground safety microswitch
3) OutFlow Valve 1 (OFV)
4) OutFlow Valve 2 (OFV)
5) Negative Pressure Relief Valve (NPRV)
6) Condenser
7) Cabin air controller
8) AUTO EXER maintenance switch
9) Cabin fan
10) Cabin evaporator
11) Distribution manifolds
12) ECS and PRESSURIZATION control panel
13) Cabine altitude alarm switch
14) Cabin touchscreen control panel
15) Cabin Zone Temperature Sensor (ZTS)
16) Cabin pressure sensor
17) Cockpit Zone Temperature Sensor (ZTS)
18) Air outlets
19) MFD unit
20) Cockpit evaporator
21) Cockpit fan
22) Demisting outlets
23) EMERGENCY RAM AIR
24) Differential pressure switch
25) Hot Air Diverter (HAD) with Cabin Duct Temperature Sensor (CDTS)
26) Recirculator ejector
27) Suction pressure sensor
28) Bleed controller with muffler and flow sensor
29) Bleed check valve
30) Compressor
31) Flow Control Shut-Off Valve (FCSOV)
32) Bleed Ejector Valve (BEV)
33) Shut-Off Valve (SOV)

Key to Figure 7.10.1

34) Bleed air high temperature sensor
35) Temperature Modulating Valve (TMV)
36) Ground Fan (GF)
37) Ram air check valve
38) Heat exchanger

Figure 7.10.1 - ECS Architecture



Engine Bleed Air System

The engine bleed air system is designed to ensure the following functions:

- to regulate the bleed air from the engine,
- to ensure a controlled airflow in the cabin,
- to adjust the bleed air temperature for cabin heating.

To Regulate the Bleed Air from the Engine

The engine bleed air system operates from both the P2.5 (compressor inter-stage) or P3 (compressor discharge) engine bleed ports.

The system normaly operates on the P2.5 port, through the Flow Control Shut-Off Valve (FCSOV), as long as the bleed flow rate demand is met by this port.

If this demand is not met, the system opens the Shut-Off Valve (SOV) on the P3 port, and the Bleed Ejector Valve (BEV) adjusts the bleed flow from the P3 port and mixes it with the bleed flow from the P2.5 port in order to meet the demand.

The BEV, the FCSOV, and the SOV are commanded by the Bleed Flow Controller.

Regarding the bleed status, two messages can be displayed on the Single Engine Indicator – see Figure 7.10.2:

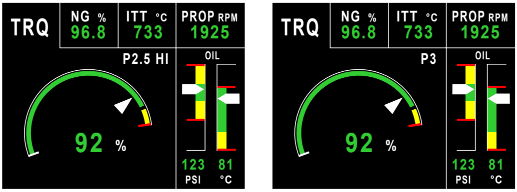
- When the bleed air flow on the P2.5 port exceeds 7 pounds per minutes, **P2.5 HI** is displayed.
- When the P3 port is open, **P3** is displayed.

NOTE

When either **P2.5 HI** or **P3** is displayed, the FADEC may command a decrease of torque to maintain ITT within engine limitations.

Figure 7.10.2 - Bleed Status Display

C4342800AAAGMA8000



To Ensure a Controlled Airflow in the Cabin

The bleed air flow is controlled by the Bleed Ejector Valve (BEV), the FCSOV and the SOV driven by the Bleed Flow Controller.

To Adjust the Temperature of the Bleed Air

The bleed air outlet temperature control is ensured by the Temperature Modulating Valve (TMV) in association with the Heat Exchanger, making use of the Ground Cooling Fan if the aircraft is on ground.

Based on pilot's or passengers' TEMP selector position, the ECS Controller computes the appropriate cabin air inlet temperature target and compares it to the actual measured inlet temperature in order to set the TMV position. The TMV diverts the required amount of bleed air through the Heat Exchanger in order to mix it with cabin air, and then provides air at the Cabin Duct Temperature Sensor (CDTS) target.

System Operation

See Figure 7.10.4.

The BLEED switch allows selection of the engine bleed air system, provided that the engine is running.

The Ground Cooling Fan (GCF) operates until takeoff, when the BLEED switch is set to AUTO and MAIN GEN is OFF.

The BLEED switch is fitted with a blocking device between the AUTO and OFF/RST positions. This prevents the operator from inadvertently setting the BLEED switch to the OFF/RST position.

To reset the system, set the BLEED switch to OFF/RST, then back to AUTO.

System Protection

Power for the engine bleed air system is supplied by the ESS BUS 2 bar and is protected by the CAB BLEED breaker.

Cabin Pressurization Control System

In flight, the Cabin Air Controller controls the modulation of the Outflow Valve (OFV) in order to reach the computed cabin altitude.

System Operation

See Figure 7.10.4.

BLEED switch actuation in the AUTO position is required for proper operation of the CPCS which regulates the cabin altitude.

The pressurization system will not operate normally if the BLEED switch is set to OFF/RST.

Cabin Altitude Management

During all phases of flight, the cabin altitude is automatically computed by the Cabin Air Controller using flight parameters (such as airplane altitude, altitude rate of change) provided by the avionics.

During climb, the cabin altitude will start increasing shortly after takeoff.

During descent, the Cabin Air Controller uses the Landing Field Elevation (LFE) to manage the optimal cabin altitude rate of change so that the airplane lands with a cabin altitude equal to LFE. To ensure a perfect accordance between the airplane altitude and the cabin altitude at landing, the Cabin Air Controller will manage the cabin altitude to reach the Landing Field Elevation from 1,500 ft AGL to landing.

The pilot selects LFE on the touchscreen controller:

- automatically, by setting a destination airport in the flight plan,
- manually, by pressing ”MFD Home,” ”Aircraft Systems,” ”Pressu,” then selecting the ”Manual” LFE mode and setting the LFE value.

System Monitoring

The pilot monitors the pressurization system through information displayed on the MFD:

- landing field altitude in ft,
- cabin altitude in ft,
- cabin climb speed in ft/min,
- cabin differential pressure in psi.

These indications are independent of the ECS controls and internal sensors.

Figure 7.10.3 - Cabin Altitude Monitoring

I4213000AAAVMA8000

CAS messages are displayed in the CAS window:

Table 7.10.1 - Pressurization System Monitoring CAS Messages

CAS message	Description
PRESSU OFF	The BLEED switch is in the OFF/RST position, or the EBAS is closed due to a system malfunction.
CABIN ALTITUDE	The cabin altitude is over 10,000 ft.
CABIN DIFF PRESS	The cabin differential pressure is over 6.4 psi (441 mb). The DUMP switch could be used in case of necessity to depressurize the cabin.
PRESSU BACKUP	The Cabin Air Controller is unable to compute optimal cabin altitude due to an electrical failure or a loss of communication with the avionics. In this condition, the CPCS will control the cabin altitude to a default value of 9,800 ft.
ECS DEGRADED	The cabin pressurization is degraded without total loss of cabin pressurization, or the heating system is degraded.

Protection - Safety

As soon as the airplane is on the ground, the cabin is automatically depressurized though the activation of the landing gear switches (airplane on ground), or – if necessary – by actuating the DUMP switch located on the PRESSURIZATION panel. In normal operation, this switch is protected and locked by a cover.

Overpressure safety is managed by both the OFV, and negative relief safety is managed by the Negative Pressure Relief Valve (NPRV). The safety functions are ensured by independent pneumatic modules fitted on both valves, which override the ECS controls when necessary.

The DUMP switch allows the pilot to open the OFV in order to depressurize the cabin.

Each OFV is fitted with a cabin altitude limitation device which overrides the DUMP function and forces the closure of the OFV if the cabin altitude reaches 14,300 ft.

The CPCS is powered by both the ESS BUS 2 bar (protected by the CPCS PWR1 breaker) and the BUS 2 bar (protected by the CPCS PWR2 breaker).

Dual-Zone Temperature Control System (TCS)

The TCS controls both the cockpit and cabin heating and cooling functions.

The TCS consists of two independent air management subsystems:

- the Cabin Heating System (CHS)
- the Vapor Cycle System (VCS)

Cabin Heating System

The TCS regulates hot air coming from the bleed air system (also used for pressurization) and mixes it with the ambient cabin air at the Recirculation Ejector to lower the delivered air temperature.

The resultant air flow enters the Hot Air Diverter (HAD) and is distributed in the cockpit / cabin zones depending on the demand.

The air is distributed:

- into the cockpit zone through:
  - ports located on pedestal sides,
  - ports under each seat or
  - the demisting outlets.
- into the cabin zone through:
  - ports located under each intermediate seat,

. ports located on the lower section of the left-side and right-side cabin upholstery.

- Under the floor, to be recirculated through the cooling circuit evaporators, if cool air is needed.

Vapor Cycle System

The VCS is selected on only when the ECS controller receives a cooling command. It is composed of two independent circuits:

- one for the cockpit zone,
- one for the cabin zone.

For each circuit, the intake of air is by means of a variable speed electrical fan, with the air blown through an evaporator and ducted to the different zones:

- into the cockpit by passing through:
  . the upper panel equipped with swiveling and adjustable air outlets,
  . air outlets located on the armrests of pilot and front passenger stations and
  . ports located under the instrument panel.
- into the cabin by passing through:
  . the overhead duct equipped with swiveling and adjustable air outlets,
  . ports located on the floor between the cabinets and the intermediate passenger seats.

System Operation

See Figure 7.10.4.

<u>Cockpit ECS Control Panel:</u>

If the FAN selector is set to OFF:

- Cockpit / cabin evaporator fans are OFF,
- VCS is inhibited,
- The cabin touchscreen control panel is inhibited and displays "PILOT IN CONTROL".

The pilot can set the desired temperature and fan speed. Desired temperature can be selected through the TEMP selector. Fan speed can either be set to AUTO or to the desired position on the FAN selector. When set to AUTO, the ECS controller drives the fan speed in order to reach the selected temperature in the most efficient way.

NOTE

The AUTO mode is recommended in order to obtain the best temperaure regulation in both cockpit and cabin areas.

By pressing the CABIN CTRL pushbutton on the ECS panel, the pilot can override the cabin settings and apply the cockpit settings to the cabin area. Then, the cabin touchscreen control panel displays "PILOT IN CONTROL". To give the control back to passengers, the pilot can press again the CABIN CTRL pushbutton. The cabin touchscreen controller then returns to the previously selected settings, and passengers can modify them as required again.

NOTE

The cabin touchscreen control panel also allows passengers to control cabin or baggage area ambient lighting.

In case of windshield or side windows misting, the pilot can press the DEFOG pushbutton. The ECS controller will command the HAD to divert hot air towards the windshield and side windows for 10 minutes.

Cabin Touchscreen Control Panel:

In the cabin zone, passengers can set the cabin temperature and fan speed on the touchscreen control panel.

Emergency Air System:

An emergency ventilation valve allows outside air to enter the cabin when the EMERGENCY RAM AIR control knob is pulled out. The EMERGENCY RAM AIR control knob is located under the right side of the instrument panel, near the right control wheel.

- In the NORMAL position, the valve is closed and the control is locked.
- To open the emergency ventilation valve, press the locking button on the knob and pull out.

NOTE

Reduce the cabin differential pressure to be able to pull out the EMERGENCY RAM AIR control knob. If necessary, depressurize the cabin.

System Protection

Power for the ECS is supplied by the BUS 2 bar and is protected by the AIR COND breaker.

Four fans are supplied by the BUS 4 bar and respectively protected by the following breakers: COND FAN, CAB FAN, CKPT FAN and GND FAN.

The system includes an automatic load shedding feature which:

- when MAIN GEN is ON:
  - turns off the Ground Fan (GF),
  - turns off the Condenser Fan (COND FAN),
  - opens the compressor clutch.
- during engine start:
  - turns off the Vapor Cycle System (VCS).

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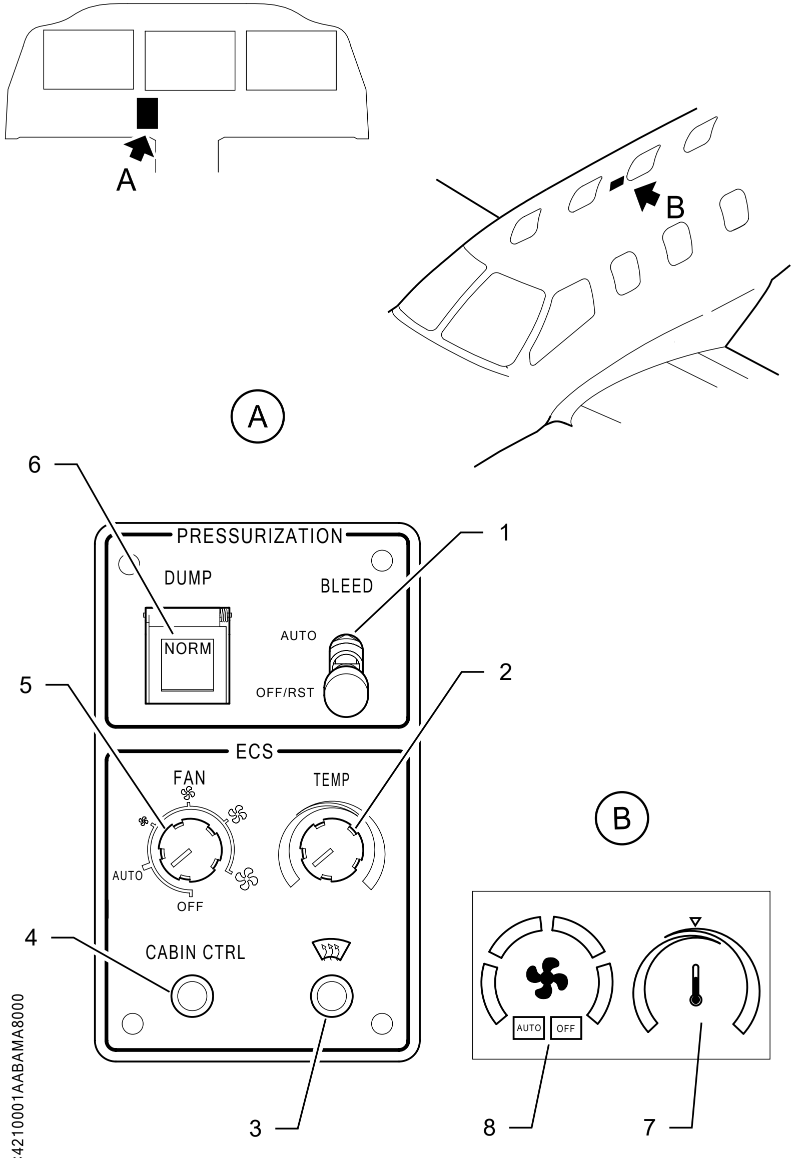
Key to Figure 7.10.4

1) BLEED switch
2) Cockpit TEMP selector
3) DEFOG pushbutton
4) CABIN CTRL pushbutton
5) Cockpit FAN selector
6) DUMP switch
7) Cabin temperature control
8) Cabin fan control

Figure 7.10.4 - ECS Controls



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7.11 - Emergency Oxygen System

See Figure 7.11.1.

The gaseous oxygen system is to be used by the crew and the passengers when the cabin altitude is greater than 10,000 ft following a loss of pressurization, or if there is smoke or fumes in the cabin.

USE OXYGEN MASK is displayed in the CAS window and the *"Use oxygen mask / Use oxygen mask"* voice alert sounds when the cabin altitude is greater than 10,000 ft.

The oxygen reserve is contained in an oxygen cylinder made of composite material and located outside of the pressurized cabin, in a compartment in the right wing's fairing. Its capacity is 50.3 cu.ft (1,425 liters) STPD and the use limit pressures are:

- maximum pressure 1,850 PSIG (127 bars) at 70 °F (21 °C). The maximum pressure for different outside temperatures is provided in Figure 8.7.2, as well as on a placard on the inside of the cylinder service door,
- minimum pressure 217 PSIG (15 bars).

CAUTION

If the oxygen cylinder pressure falls below the minimum, the cylinder must be purged before refilling.
If this occurs, inform the maintenance department.

The oxygen cylinder head is equipped with:

- a hand-controlled isolation valve to permit cylinder installation and removal,
- a microswitch that triggers **O2 CYL CLOSED**. This message is ON when the isolation valve is closed,
- a graduated pressure gauge,
- a charging valve; refer to the replenishment procedure in Paragraph Oxygen in Subsection 8.7. ,
- an overpressure system consisting of a safety disc. This disc is designed to rupture between 2,500 and 2,775 PSIG (172 and 191 bars) discharging the cylinder contents overboard,
- a pressure-reduction valve that regulates oxygen pressure to the oxygen masks at between 64 and 85 PSIG (4.4 and 5.9 bars),
- a low-pressure safety valve calibrated to 116 PSIG (8 bars).

A control panel located in the cockpit's overhead panel includes:

- a two-position valve ON/OFF (OXYGEN switch) to permit the supply of the masks for those occupying the front seats,
- a two-position valve DEPLOY/STBY (PASSENGER OXYGEN switch) with guard to permit the supply of the four passenger masks when the OXYGEN switch is set to ON.

Oxygen pressure is displayed on the MFD.

An altimetric valve provides an automatic actuation function for passenger masks at a cabin altitude between 13,000 and 14,000 ft when the OXYGEN switch is set to ON.

Two pressure-demand type masks that allow quick donning with a single hand to cover the nose and the mouth are at disposal of the pilot and the front passenger, along with two pairs of smoke goggles. These masks are installed in cups on the cabin walls aft of the front seats. For the ease of donning and for ergonomic reasons, the pilot's mask is located in the right-side cup, and the front passenger mask is located in the left-side cup. The masks are permanently connected to the oxygen system.

The smoke goggles are stowed in the cabinet drawer behind the right front seat.

Each cockpit mask is equipped with:

1. a microphone, controlled by the MICRO/MASK switch under a cover located on the instrument panel near the left control wheel.
2. a Smart Mike system, which reduces the breathing noise in the headsets. The noise reduction function operates when the switch located on the O_2 connecting line is set to ON – see Figure 7.11.3.
3. a vent valve integrated in the facepiece of the mask to provide airflow to the goggles – see Figure 7.11.2.

NOTE

Manual opening of the vent valve is necessary when goggles are in place.

4. a regulator – see Figure 7.11.2 – equipped with:
   - a two-position N-100% control tab that selects between a mix of cabin air and oxygen (NORMAL mode) and 100% oxygen (100% mode),
   - an EMERGENCY rotating knob with a PRESS TO TEST function.

NOTE

When smoke or fumes are present, the mask can be set to provide positive pressure to prevent smoke or fumes from infiltrating the mask and to provide airflow to clear the goggles. Push the N-100% control tab in toward the mask to the 100% position and turn the EMERGENCY control knob to the EMERGENCY position. After donning the goggles, open the goggle vent on the bridge of the mask by pulling the slide fully downward.

CAUTION

Use of 100% oxygen and/or the EMERGENCY pressurized breathing function will significantly decrease the duration of available oxygen.

A flow indicator (blinker) into the oxygen tubing signals the proper flow.

Depending on the specific airplane configuration, refer to the mask manufacturer's documentation available on the MyTBM.aero website for more information.

Four permanently-connected passenger constant-flow type masks that cover the nose and mouth are installed in two containers on the cabin ceiling. The opening of these containers and the deployment of the masks are controlled:

- by the pilot, when the OXYGEN switch is set to ON and the PASSENGER OXYGEN switch is set to DEPLOY,
- or automatically at a cabin altitude between 13,000 ft and 14,000 ft with the OXYGEN switch set to ON.

Oxygen flow to the passenger masks is obtained when the passenger pulls on the lanyard to release the connected pin. The green bag on the oxygen mask inflates when oxygen flow is obtained.

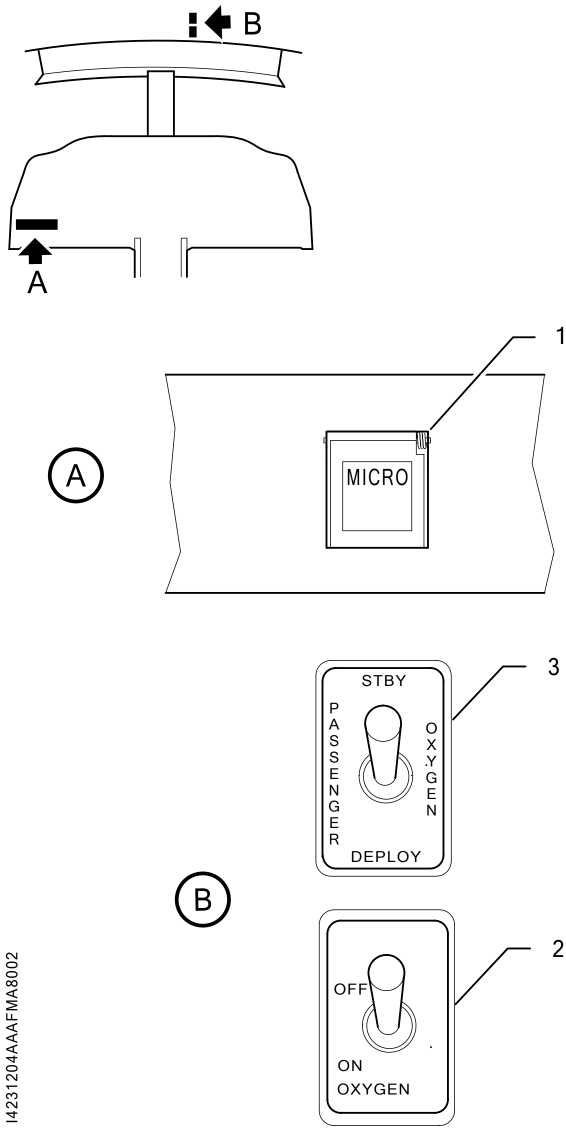
WARNING

Smoking is strictly prohibited when the oxygen system is in use. Before using oxygen, remove any trace of oil, grease, soap and other fatty substances (including lipstick, make-up, etc.) on the user's face.

Key to Figure 7.11.1

1) MICRO/MASK switch
2) OXYGEN switch
3) PASSENGER OXYGEN switch

Figure 7.11.1 - Emergency Oxygen System



Key to Figure 7.11.2

1) Harness inflation side vanes
2) N (Normal) - 100% regulator control tab
3) EMERGENCY control knob
4) PRESS TO TEST function
5) Vent valve

Figure 7.11.2 - Crew Oxygen Masks - Regulator Controls

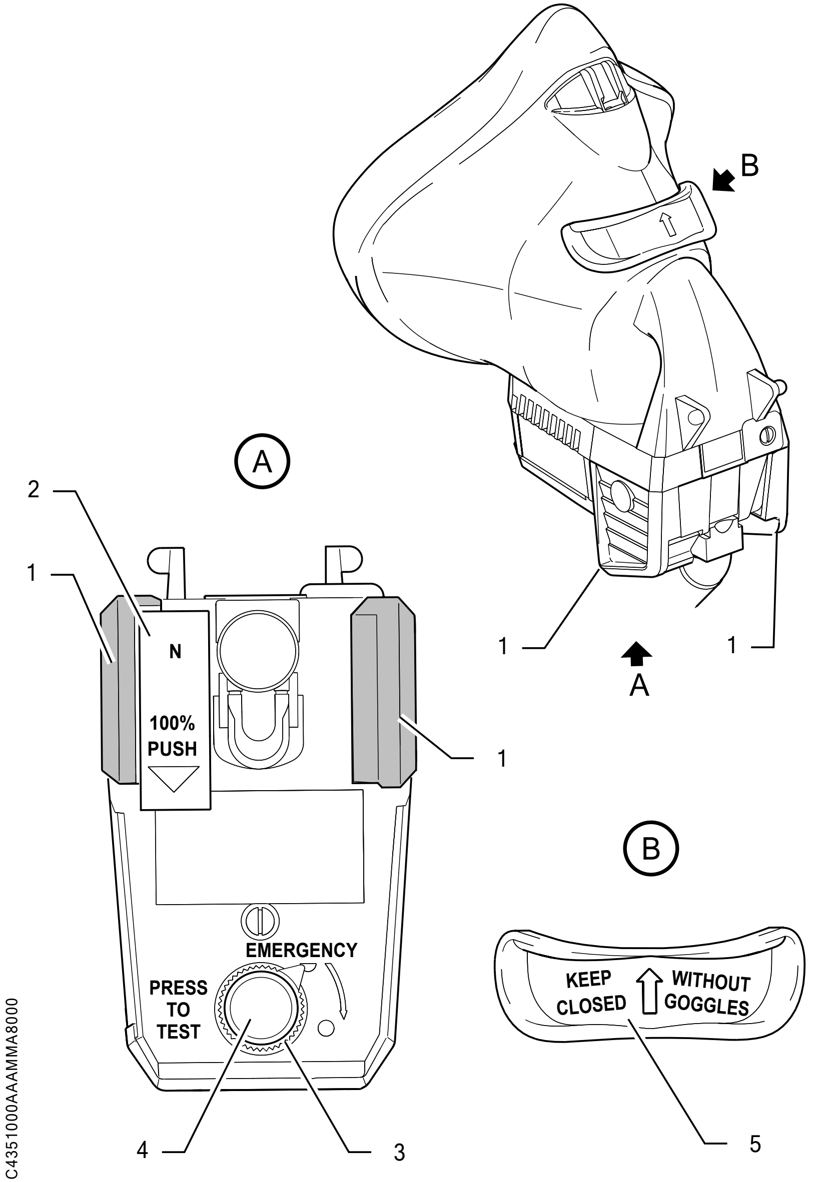
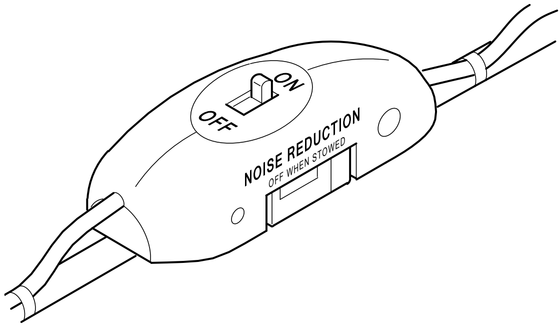


Figure 7.11.3 - Crew Oxygen Masks - Noise Reduction Switch



Flight Above 15,000 ft with Possible Emergency Descent

Minimum oxygen pressure (PSIG) for following conditions:

- Crew oxygen masks in NORMAL mode,
- Four minutes of utilization by each pilot and passenger from 31,000 ft to 15,000 ft,
- Plus 30 minutes of utilization by each pilot and passenger at 15,000 ft,
- Plus 86 minutes of utilization by each pilot at 10,000 ft.

Table 7.11.1 - Minimum Oxygen Pressure (PSIG) [Flight Above 15,000 ft with Possible Emergency Descent]

Number of occupants		Outside temperature						
Cockpit	Cabin	110 °F (43 °C)	90 °F (32 °C)	**70 °F (21°C)**	50 °F (10°C)	30 °F (-1°C)	10 °F (-12°C)	-10 °F (-23°C)
1	0	631	614	**597**	580	563	546	529
1	1	759	736	**713**	691	668	646	623
1	2	885	856	**828**	799	771	743	715
1	3	1010	976	**941**	907	873	839	806
1	4	1,137	1,096	**1,056**	1,015	975	935	897

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Table 7.11.1 - Minimum Oxygen Pressure (PSIG) [Flight Above 15,000 ft with Possible Emergency Descent]

Number of occupants		Outside temperature						
Cockpit	Cabin	110 °F (43 °C)	90 °F (32 °C)	**70 °F (21°C)**	50 °F (10°C)	30 °F (-1°C)	10 °F (-12°C)	-10 °F (-23°C)
2	0	1,037	1,001	**965**	930	894	859	825
2	1	1,164	1,122	**1,080**	1,038	997	956	916
2	2	1,289	1,241	**1,192**	1,144	1,097	1,050	1,004
2	3	1,416	1,361	**1,306**	1,252	1,198	1,145	1,093
2	4	1,541	1,480	**1,418**	1,357	1,297	1,238	1,180

NOTE

Increase the pressure in the table by 8% if the airplane has been parked in sunlight for an extended period of time.

When Required to Remain Above 15,000 ft Due to Minimum Enroute Altitude

Minimum oxygen pressure (PSIG) for following conditions:

- Crew oxygen masks in NORMAL mode,
- Flight above 15,000 ft. All equipment in use,
- One hour of utilization by each pilot and passenger,
- Plus one hour of utilization by each pilot under 15,000 ft.

Table 7.11.2 - Minimum Oxygen Pressure (PSIG) [When Required to Remain Above 15,000 ft Due to Minimum Enroute Altitude]

Number of occupants		Outside temperature						
Cockpit	Cabin	110 °F (43 °C)	90 °F (32 °C)	**70 °F (21°C)**	50 °F (10°C)	30 °F (-1°C)	10 °F (-12°C)	-10 °F (-23°C)
1	0	618	602	**585**	569	552	536	520
1	1	842	816	**789**	763	736	710	685
1	2	1,067	1,029	**992**	955	918	882	846
1	3	1,513	1,240	**1,192**	1,144	1,097	1,050	1,004
1	4	1,513	1,452	**1,392**	1,333	1,275	1,217	1,161
2	0	992	958	**925**	891	858	825	793
2	1	1,215	1,170	**1,125**	1,081	1,037	994	952
2	2	1,439	1,382	**1,326**	1,270	1,215	1,161	1,108
2	3	1,662	1,593	**1,525**	1,457	1,391	1,326	1,262
2	4	1,888	1,807	**1,725**	1,645	1,567	1,490	1,415

NOTE

Increase the pressure in the table by 8% if the airplane has been parked in sunlight for an extended period of time.

Flight Between 15,000 ft and 10,000 ft

Minimum oxygen pressure (PSIG) for following conditions:

- Crew oxygen masks in NORMAL mode,
- Flight under 15,000 ft,
- 90 minutes of utilization by each pilot and **one** passenger,
- Plus 30 minutes of utilization by each pilot at 10,000 ft.

Table 7.11.3 - Minimum Oxygen Pressure (PSIG) [Flight Between 15,000 ft and 10,000 ft]

Number of occupants		Outside temperature						
Cockpit	Cabin	110 °F (43 °C)	90 °F (32 °C)	**70 °F (21°C)**	50 °F (10°C)	30 °F (-1°C)	10 °F (-12°C)	-10 °F (-23°C)
1	0	618	602	**585**	569	552	536	520
1	1	961	929	**896**	864	833	801	770
1	2	961	929	**896**	864	833	801	770
1	3	961	929	**896**	864	833	801	770
1	4	961	929	**896**	864	833	801	770
2	0	992	958	**925**	891	858	825	793
2	1	1,333	1,282	**1,231**	1,181	1,131	1,083	1,035
2	2	1,333	1,282	**1,231**	1,181	1,131	1,083	1,035
2	3	1,333	1,282	**1,231**	1,181	1,131	1,083	1,035
2	4	1,333	1,282	**1,231**	1,181	1,131	1,083	1,035

NOTE

Increase the pressure in the table by 8% if the airplane has been parked in sunlight for an extended period of time.

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7.12 - Air Data System and Instruments

See Figure 7.12.1.

The airplane's air data system consists of:

- Primary systems:
  . two separate static pressure systems,
  . two separate dynamic pressure systems.
- An alternate static pressure system.

Static Pressure Systems

Primary Systems

Two dual static ports (one on each side of the fuselage tail section) supply a dual system routed to the cockpit.

Static system 1 supplies:

- ADC 1,
- the standby instrument, through the Normal / Alternate static source switching valve, when the ALTERNATE STATIC SOURCE selector is in the Normal position (pushed). The ALTERNATE STATIC SOURCE selector is located on the instrument panel under the right-side control wheel.

Static system 2 supplies ADC 2.

Each line has a drain plug located under the instrument panel on the right side.

Alternate Static Source

The alternate static port, located inside the rear fuselage, supplies a line routed to the Normal / Alternate static source switching valve.

If a false airspeed indication or primary static system failure is suspected, the pilot can pull the ALTERNATE STATIC SOURCE selector fully out to select the alternate static source. In this case, static pressure from the alternate line is only provided to the standby instrument. Static pressure from the alternate line is not provided to either ADC.

CAUTION

Do not rely on PFD indications when the alternate static source is selected. Only refer to the standby instrument for airspeed and altitude.

The alternate line has a drain plug located under the instrument panel on the right side.

Dynamic Pressure Systems

Dynamic pressure is provided by two heated pitot probes, one installed under each wing.

The left probe supplies ADC 1 and the standby instrument.

The right probe supplies ADC 2.

Each line has a drain plug located in the root of the wing.

Pitot Heating

Pitot heating is controlled by the PITOT L/R & STALL HTR switch located on the DE-ICE SYSTEM panel. For further details, refer to Subsection Ice Protection Equipment.

CAUTION

To avoid probe overheating while on the ground, do not turn on the pitot heat for long periods.

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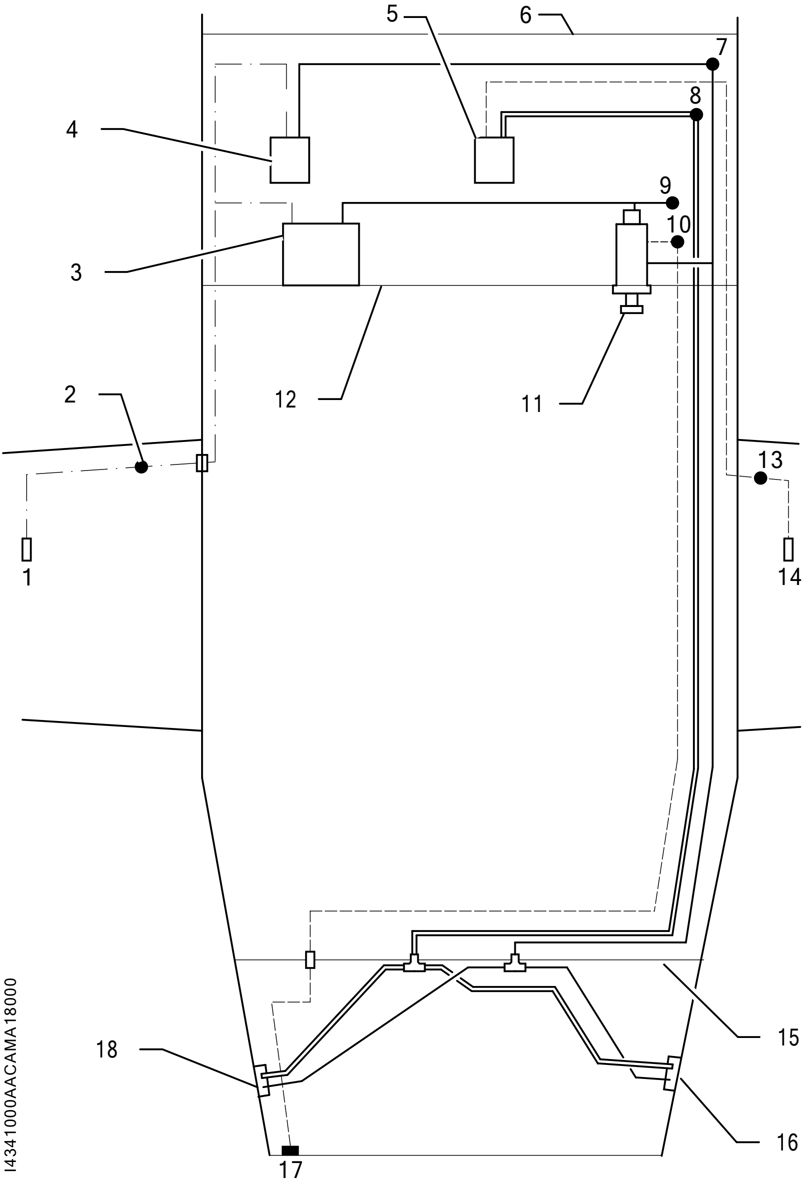
Key to Figure 7.12.1

1) Pitot L
2) Dynamic system drain
3) Standby instrument
4) ADC 1
5) ADC 2
6) Forward pressure bulkhead
7) Static system drain
8) Static system drain
9) Static system drain
10) Alternate static system drain
11) Static source switching valve (Normal / Alternate)
12) Instrument panel
13) Dynamic system drain
14) Pitot R
15) Rear pressure bulkhead
16) Static port
17) Alternate static port
18) Static port

Figure 7.12.1 - Air Data System



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7.13 - Vacuum System and Instruments

See Figure 7.13.1.

The airplane is fitted with a vacuum system that provides the suction necessary to operate the leading edge deicing.

The vacuum system includes:

- a regulating and relief valve,
- an air ejector,
- an air check valve,
- a suction relief valve,
- a pressure switch.

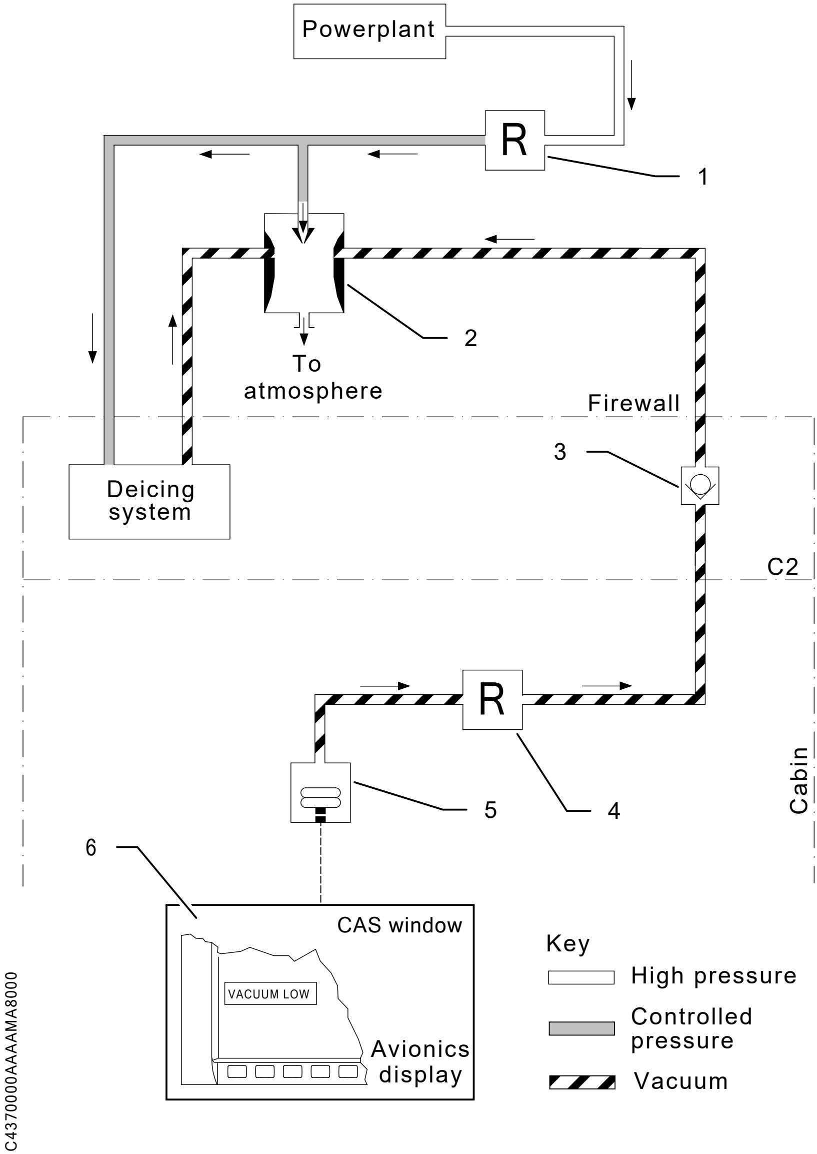
Compressed air necessary for the ejector to create decompressed air is taken from the powerplant. The airflow is regulated before entering the ejector, which creates the necessary vacuum by venturi effect.

The suction relief valve, fixed in the cabin to Frame C2, maintains the vacuum for monitoring of the system. In case of pressure drop, a pressure switch installed in the system indicates the failure, and **VACUUM LOW** is displayed in the CAS window.

Key to Figure 7.13.1

1) Regulating and relief valve
2) Air ejector
3) Air check valve
4) Suction relief valve
5) Pressure switch
6) Failure CAS message

Figure 7.13.1 - Vacuum System



Standby Attitude Module (MD302)

The Mid-Continent Instruments and Avionics MD302 Standby Attitude Module consists of two LCD screens:

- one for the display of airplane attitude (pitch, roll and magnetic heading),
- one for the display of airplane altitude and airspeed.

The MD302 is powered from the ESS BUS 2 bar (protected by the STBY INSTR breaker) or by the module's internal replaceable battery, ensuring that the airplane can continue safe flight and landing in the event of a loss of the primary attitude and air data displays.

Dynamic and static pressure is provided to the MD302 solid state electronic sensors using the airplane's pitot probe and static sources.

The magnetic heading data is provided by the MD32 magnetometer installed on the left wing.

The standby attitude module is located on the instrument panel's top left-hand corner.

7.14 - Ice Protection Equipment

The ice protection equipment is as follows:

- Ice Detection System
- Pneumatic deice system for inboard, central and outboard wing and for stabilizers: AIRFRAME DE ICE
- Propeller electrical deice system: PROP DE ICE
- Windshield electrical deice system: WINDSHIELD
- Electrical heating system for both pitots and for the stall warning sensor: PITOT L/R & STALL HTR
- Turbine air inlet deice systems: INERT SEP

The deicing check and control panel is located on the lower left side of the instrument panel.

Ice Detection System

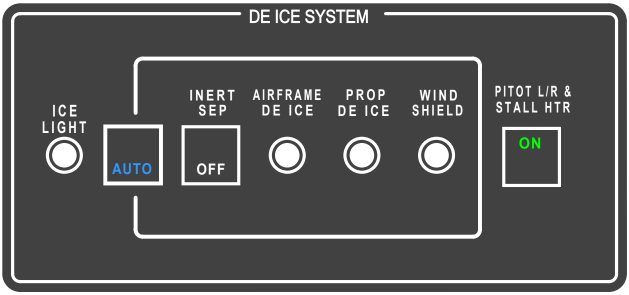
CAUTION

Ice Detection System is only an advisory system. The pilot has the primary responsibility for detecting icing conditions through visual cues and activating ice protection systems.

The system is composed of one ice detector providing an ice signal to the system when and as long as ice is detected on the sensing element.

The default mode of the system is AUTO with all the protection systems deactivated – see Figure 7.14.1

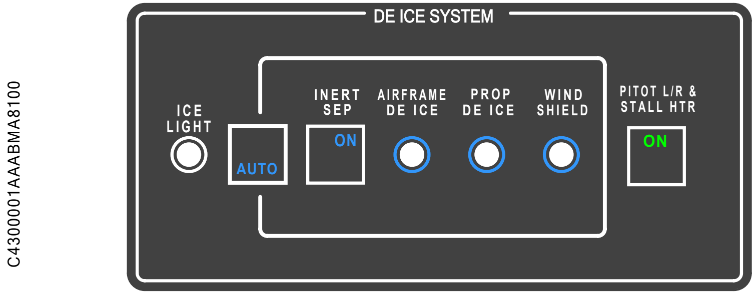
Figure 7.14.1 - DE ICE SYSTEM Panel – AUTO Mode with No Ice Detected



C4300001AAABMA8000

In AUTO mode, when ice is detected, all the ice protection systems are automatically activated – see Figure 7.14.2, and **ICE DETECTED** is displayed in the CAS window.

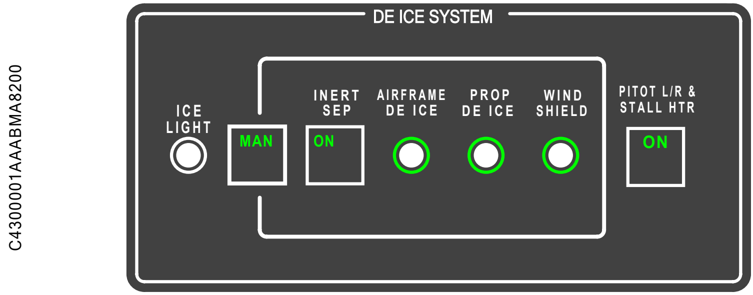
Figure 7.14.2 - DE ICE SYSTEM Panel – AUTO Mode with Ice Detected



Pilot action is required to revert the system in MAN mode by pressing the DE ICE SYSTEM mode switch. When MAN mode is selected, all deicing systems turn on – see Figure 7.14.3.

In MAN mode, all the ice protection systems can be activated/deactivated individually.

Figure 7.14.3 - DE ICE SYSTEM Panel – MAN Mode Activated



When icing conditions are no longer detected by the ice detector for 60 seconds after the last detection, **NO ICE DETECTED** is displayed in the CAS window and the system may be reverted in AUTO mode by pressing the DE ICE SYSTEM mode switch. Then all the ice protection systems turn off.

ICE DETECTION FAIL is displayed in the CAS window in the following cases:

- failure of the ice detector. The system shall be reverted in MAN mode by the pilot,
- failure of the DE ICE SYSTEM panel printed circuit. The system is automatically reverted in MAN mode.

Wing and Empennage Deicing

A pneumatic deice system assures protection of wing leading edges, horizontal stabilizer, elevator horns and vertical stabilizer. The system automatically cycles when AIRFRAME DE ICE system is activated either manually or automatically. The 67-second cycle breaks down in two inflation cycles:

- a first cycle induces inflation of leading edges deicer boots in wing central and outboard sections,
- the second cycle induces inflation of leading edges deicer boots in horizontal stabilizer, elevator horns, vertical stabilizer and wing inboard section.

The table hereafter gives the CAS messages and the status light colors corresponding to the state of the system.

System state	Status light	CAS
OFF		
ON (AUTO mode)		
ON (MAN mode)		
FAIL		AFRM DEICE FAIL

Wing leading edge icing inspection light – see Paragraph Exterior Lighting in Subsection 7.9..

Propeller Deicing

Propeller deicing is accomplished through electrical heating of blade roots. This system operates cyclically and alternately on the inboard and outboard zones of all blades when PROP DE ICE system is activated either manually or automatically. Each cycle is 180 seconds long. The cycles continue as long as the system is activated.

The table hereafter gives the CAS messages and the status light colors corresponding to the state of the system.

System state	Status light	CAS
OFF		
ON (AUTO mode)		
ON (MAN mode)		
FAIL		PROP DEICE FAIL

PROP DEICE ON is displayed in the CAS window if the engine is shutdown with PROP DE ICE switch still ON.

CAUTION

When the engine is shutdown, do not set the PROP DE ICE switch to ON for more than 10 seconds, damage to the propeller blades could result.

Windshield Deicing

The windshields are electrically deiced by integrated heating resistors. The system includes two controllers and two heat probes embedded in each windshield. They are operated by the WINDSHIELD switch.

When WINDSHIELD deice system is activated either manually or automatically, the controllers supply the heating resistors, the windshield temperature is controlled via heat probes. When the temperature reaches 45 °C (113 °F), the controllers cut the electrical supply to the heating resistors and resume supply when the temperature falls below 30 °C (86 °F). The cycle continues as long as the system is activated.

In the event of failure of probe 1, the controller receives the temperature data from probe 2. The electrical supply to the heating resistors is cut when the windshield temperature reaches 56 °C (133 °F). In that case, the windshield is no longer heated, the pilot can reset the system by setting the WINDSHIELD switch to OFF, then to ON.

The table hereafter gives the status light colors corresponding to the state of the system.

System state	Status light
OFF	
ON (AUTO mode)	
ON (MAN mode)	

Heating of Pitots and Stall Warning Sensor

The two pitots, which supply ADCs and the standby instrument, and the stall warning sensor are electrically heated. This deice equipment must be used even during flight into non-icing conditions.

The system is operated by the PITOT L/R & STALL HTR switch.

The system condition messages **PITOT NO HT L** or **PITOT NO HT R**, **PITOT HT ON L** or **PITOT HT ON R**, **STALL HEAT ON** or **STALL NO HEAT** are displayed in the CAS window. Refer to the Garmin Pilot's Guide for further details.

NOTE

Correct operation of the audible stall warning may be altered by severe or prolonged icing.

Turbine Air Inlet Protection

Operation and description are detailed in Paragraph Engine Air Inlet in Subsection 7.6. .

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7.15 - Miscellaneous Equipment

Stall Warning System

The airplane is equipped with an electrically deiced stall sensor in the leading edge of the right wing. This sensor fitted with a vane is electrically connected to an audible warning. The vane senses the change in airflow over the wing and operates the warning unit, which produces an aural warning alert. This warning alert begins no later than 5 knots above the stall in all configurations.

Simultaneously, the control wheel vibrates through the stick shaker.

The stall warning system should be checked during the preflight inspection by momentarily turning on the SOURCE selector and by manipulating the vane in the wing.

The stall warning system should also be checked during the preflight inspection by momentarily turning on the SOURCE selector and by depressing the TEST pushbutton on cockpit upper panel.

The system is operational if a *"stall / stall"* aural warning alert is heard on the alarms speaker.

NOTE

Correct operation of the audible stall warning may be altered by severe or prolonged icing.

Static Dischargers

As an aid in flight, static dischargers are installed to improve radio communications during flight by reducing interference from dust or various forms of precipitations (rain, snow or ice crystals).

Under these conditions, the build-up and discharge of static electricity from the trailing edges of the wings (flaps and ailerons), rudder, stabilator, propeller tips and radio antennas can result in loss of usable radio signals on all communications and navigation radio equipment. Usually, the ADF is first and VHF communication equipment is the last to be affected.

Installation of static dischargers reduces interference from precipitation static, but it is possible to encounter severe precipitation static conditions which might cause the loss of radio signals, even with static dischargers installed. Whenever possible, avoid known severe precipitation areas to prevent loss of dependable radio signals. If avoidance is impractical, minimize airspeed and anticipate temporary loss of radio signals while in these areas.

Cabin Fire Extinguisher

The fire extinguisher is located on the right-side cockpit upholstery panel.

A pressure gauge allows checking the fire extinguisher condition. Follow the recommendations indicated on the extinguisher.

Autopilot

The autopilot control panel is located above the MFD.

Refer to Paragraph GFC 700 Autopilot Limits in Subsection 2.6. and to the Garmin Pilot's Guide for further details.

GPS

GPS navigation is performed through the Garmin system.

Refer to Paragraph GNSS (GPS/SBAS) Navigation System Limitations in Subsection 2.6. and to the Garmin Pilot's Guide for further details.

Weather Radar

The weather information can be displayed on PFD 1, PFD 2 and MFD.

Refer to Paragraph Weather Radar in Subsection 2.6. and to the Garmin Pilot's Guide for further details.

The controls for the weather radar are located on the touchscreen controllers.

The weather radar is protected by the WXR breaker.

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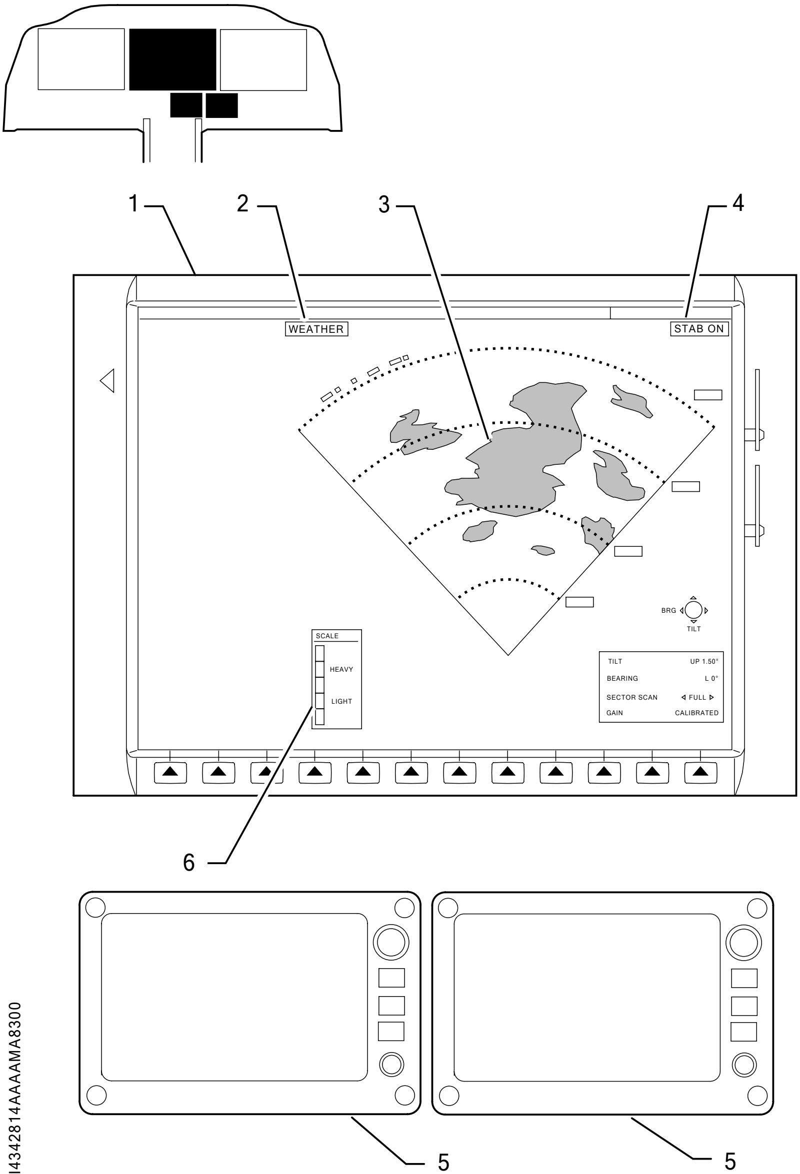
Key to Figure 7.15.1

1) MFD
2) Radar mode
3) Area of weather display
4) Antenna stabilization status
5) Touchscreen controllers
6) Scale for weather display

Figure 7.15.1 - Weather Radar Display and Controls



Emergency Locator Transmitter

The airplane is equipped with an ELT ARTEX 1000 emergency locator transmitter which enables to locate it in case of distress. It is located in fuselage rear section with a service door on the right side of the fuselage.

The emergency locator transmitter assembly is constituted of a transmitter supplied by a battery, of an antenna attached on upper fuselage and of a remote control located on the upper panel.

NOTE

For test sequences, refer to the manufacturer manual.

Operation of the emergency locator transmitter is obtained as follows:

- from the instrument panel by setting the ELT remote control switch to ON (locator transmitter ARM/OFF switch set to ARM/OFF),
- from the locator transmitter by setting its ARM/OFF control switch to ON,
- automatically in case of shock, when the remote control switch is set to ARM/OFF and the locator transmitter switch is set to ARM/OFF.

A red indicator light located on the ELT remote control switch in the cockpit indicates to the pilot that the emergency locator transmitter is transmitting.

A red indicator light located above the locator transmitter switch and a buzzer located in the fuselage rear section indicate that the emergency locator transmitter is transmitting.

CAUTION

Reset the ELT after an inadvertent activation.

NOTE

The ELT cannot be reset if either the remote control switch or ELT switch is ON.

Reset procedure:

1. Set the remote control switch or ELT switch to ON.
    A. The ELT keeps on transmitting emergency signal.
    B. On the remote control box, red indicator light flashes.
    C. On the ELT, red indicator light flashes.
    D. Near the ELT, the buzzer sounds.

2. Wait approximately for one second.
3. Set the remote control switch to ARM/OFF or the ELT switch to ARM/OFF.
   A. The ELT does not transmit emergency signal any longer.
   B. On the remote control box, red indicator light illuminates for about one second, then goes off.

      or
   C. On the ELT, red indicator light goes off.
   D. Near the ELT, the buzzer does no more sound.

The ELT is then reset.

End of procedure.

Lightweight Data Recorder (LDR 1000)

The airplane is equipped with a lightweight data recorder which is a crash-survivable system, recording both cockpit voices and flight data. These data are intended to be used after an accident or an incident.

The lightweight data recorder system includes a cockpit microphone located on instrument panel, between the standby instrument and the autopilot control panel.

The lightweight data recorder simultaneously records audio from the GMA audio control panel, audio from the cockpit microphone, data from the ECS controller, data from the FADEC Channel A, and data from the GIA integrated avionics unit 1 (Garmin flight deck system).

The lightweight data recorder is powered from the BATT BUS and controlled by a printed circuit as follows:

- If the crash lever is set upward, the lightweight data recorder starts recording.
- If the crash lever is set downward, the lightweight data recorder goes on recording for 10 minutes (audio only) and then automatically stops recording.

ADS-B OUT Function

The ADS-B OUT function enables the airplane to broadcast data, such as position information, to ground stations and to other airplanes equipped with ADS-B IN system.

The loss of an interfaced input to the selected extended squitter transponder may cause the transponder to stop transmitting ADS-B OUT data. Depending on the nature of the fault or failure, the transponder may no longer be transmitting all of the required data in the ADS-B OUT messages.

ADS-B OUT data can be transmitted via transponder 1 or transponder 2, if installed.

If transponder 1 [2] detects any internal fault or failure with the ADS-B OUT functionality, the following CAS message **XPDR1 ADS-B FAIL** [**XPDR2 ADS-B FAIL**] will be displayed in the CAS window.

After being informed of ADS-B OUT failure either by the CAS message **XPDR1 ADS-B FAIL** [**XPDR2 ADS-B FAIL**] or by Air Traffic Control, it is possible to restore ADS-B OUT function by selecting transponder 2 [1].

Flight Deck Information System (GDL 60)

The airplane is equipped with a flight deck information system allowing portable electronic devices to stream data to and from the Garmin system through wireless connection.

This wireless connection is used to transfer information such as Flight Plans.

For the system description and its utilization, refer to the Garmin Pilot's Guide.

Data Collection and Transmission Unit (DCTU)

The Data Collection and Transmission Unit (DCTU) collects data from the FADEC and from the GIA to record it in resident non-volatile memory.

When the airplane is on the ground with a low engine power set, DCTU connection with a local cellular network is established. Once the engine is shutdown, recorded data are automatically transmitted to a ground station via the established connection. These data are intended to be used for maintenance and trend monitoring.

The DCTU also includes:

- a WiFi local hot spot with full security in order to communicate with a local smart device,
- a wired connection via a USB port.

The DCTU is also used for engine maintenance tasks (e.g. FADEC software uploads, engine trim, etc.).

The DCTU starts recording data as soon as the engine is running, and stops recording data when the engine is shutdown.

The DCTU is installed in the front cargo compartment and is connected to the FADEC. It does not require a pilot input to operate.

The DCTU is electrically supplied by:

- the FADEC when the engine is running,
- the BATT BUS bar, protected by the REC circuit breaker, when the engine is shutdown.

After engine shutdown, the DCTU is electrically supplied by the BATT BUS bar as long as flight data is transferred.

NOTE

If data transfer lasts more than 60 minutes, the DCTU is automatically disconnected from the BATT BUS bar to preserve airplane battery.

Garmin Integrated Flight Deck (GIFD) Approaches

The purpose of this section is to provide an overview of the GIFD capabilities and operation related to GIFD approaches.

Detailed descriptions, as well as operating instructions for these approaches, are provided in the Garmin Pilot's Guide.

RNP Approaches Operation

The GIFD is capable of performing approaches with GNSS guidance – also designated as RNP approaches.

RNAV (GPS) or RNAV (GNSS) – **LNAV**, **LNAV+V**

LNAV approaches provide lateral GPS-based guidance to legs defined by the navigation database.

Vertical deviations may be available if the necessary information to construct a vertical path is contained in the database.

Any vertical path information for LNAV approaches is strictly advisory.

There is no guarantee that stepdown fix altitudes will be honored and the crew must level off at the MDA if the runway is not visible.

LNAV approaches may be executed with or without SBAS, and advisory vertical guidance is dependent on sufficient GPS vertical error estimates rather than SBAS vertical integrity.

LNAV+V approaches do not downgrade in general because they do not require SBAS, although high GPS vertical error estimate anomalies could result in loss of advisory vertical guidance.

If GPS is lost, the LNAV approach will be aborted.

RNAV (GPS) or RNAV (GNSS) – **L/VNAV**

LNAV/VNAV approaches add published vertical guidance in addition to LNAV guidance. They are different from LNAV+V in that the vertical deviations are not advisory, but serve instead as published guidance.

The minimums of an LNAV/VNAV approach represent a DA rather than a MDA.

Execution of an LNAV/VNAV approach does not require SBAS integrity as long as a system is configured to support barometric VNAV for approach.

If SBAS integrity is available, it will be used to provide vertical guidance.

During execution of a GPS approach with LNAV/VNAV service levels while the airplane is between the FAF and MAP, excessive deviation indicators appear as white vertical lines to indicate an area where the vertical deviation exceeds ±75 feet.

If the glide-path indicator is within an area of excessive deviation, the glide-path indicator becomes yellow and the vertical lines also become yellow.

RNAV (GPS) or RNAV (GNSS) – **LPV**

LPV approaches provide both localizer precision lateral guidance and a vertical path definition.

SBAS integrity is required to execute the approach.

Baro-VNAV Approaches

The GIFD provides the ability to perform barometric based VNAV operations while conducting certain GPS approaches using an automatically-generated temperature-compensated glidepath.

Baro-VNAV approach functionality is separate and distinct from enroute and terminal descent VNAV functions.

Temperature Compensation

If SBAS is unavailable or disabled, the GIFD will provide automatic temperature compensated glidepath vertical guidance on approaches that have LNAV/VNAV minima published, or on some approaches that are not authorized for SBAS.

No pilot action is required to receive the temperature compensated glidepath when SBAS is not available or allowed.

Final Approach Segment (FAS)

Altimeter systems follow the ISA temperature modelling.

When actual atmospheric conditions deviate from the ISA model, errors in altitude will occur.

For example, performing a Baro-VNAV approach during a hot day would result in guidance relative to a glide path angle steeper than the published glide path angle. On the contrary, during a cold day, a Baro-VNAV approach would be based on guidance relative to a glide path smoother than the published glide path angle.

The approach plates indicate a temperature range for which the approach has been designed.

Within this temperature range, the LNAV/VNAV can be used with uncompensated Baro-VNAV systems.

Outside of this temperature range, LNAV/VNAV minimums shall not be used with uncompensated Baro-VNAV systems.

The Garmin approach Baro-VNAV system is automatically temperature-compensated to produce a glidepath position in space such that Baro-VNAV approaches are always flown at the published glide path angle when the actual temperature deviates from the ISA model. This produces results similar to ILS glideslopes and LPV glide-paths that remain in the same position in space without respect to temperature.

To produce the correct geometric glide path angle on the final approach segment, temperature compensation is applied to the barometric altitude and used to determine the displayed vertical deviation.

However, the altimeter continues to display uncompensated barometric altitude.

The temperature compensation required depends on the temperature profile over the altitude range between the point at which the barometric setting is measured (presumed to be the approach airport) and the present altitude of the airplane.

This temperature profile is estimated by using the air data system static air temperature (SAT) and applying the standard temperature lapse rate to determine the temperature over the rest of the range.

When using barometric altitude for vertical guidance along the final approach segment, temperature compensation is applied whether the temperature is above or below standard temperature. The actual compensated altitude is not displayed to the pilot during an approach.

Compensating Waypoint Altitudes

Depending on the terrain, temperature compensation may be required for waypoints in the approach prior to the final approach segment due to terrain and/or obstacle clearance requirements.

Temperature Compensation of Approach Minimums

To enable temperature compensation of the minimum altitude, select the TEMP COMP, option for the minimum altitude reference type (in addition to OFF, BARO, and RAD ALT). The temperature at the destination airport is used for this purpose.

The temperature at the destination airport is invalidated when a different approach is loaded into the active flight plan or when the system powers up. This disables temperature compensation of both the published approach waypoint altitudes on the active flight plan page and the minimum altitude.

The minimum altitude selection type changes to BARO if it was previously set to TEMP COMP.

Temperature compensation of the minimum altitude is not dependent on use of barometric altitude for vertical guidance on the FAS, and is therefore available for any type of approach; in fact, only the destination airport and temperature are required.

Compensating the approach minimums bug simply determines where the minimums reference is displayed on the altimeter.

No adjustment to the barometric altitude is made as a result of temperature compensating the minimums reference.

Approach Level Downgrade

Some automatic approach service downgrade may be performed automatically upon loss of SBAS or when GPS approach alarm limits are exceeded, depending on the approach service level that has been loaded in the flight plan and activated.

This automatic downgrade is annunciated to the pilot through the display of **APR DWNGRADE** in the CAS window and a change in the annunciated service level in the HSI.

As **APR DWNGRADE** may not be triggered under certain circumstances, the HSI annunciation shall be considered as the primary means to annunciate any approach downgrade.

Under certain circumstances when the GNSS integrity requirement is not met, the approach may be aborted. This is annunciated through the display of **ABORT APR**, while the service level annunciation is no longer displayed on the HSI.

If SBAS becomes unavailable on an RNAV LNAV/VNAV approach, **L/VNAV** is displayed in yellow, the system switches to LNAV/VNAV (Baro-VNAV) service level and **APR DWNGRADE** will be displayed (the VDI will be flagged "NO GP" until **APR DWNGRADE** has been acknowledged).

If **APR DWNGRADE** is acknowledged, **L/VNAV** is displayed in magenta.

If **APR DWNGRADE** is not acknowledged, the system will downgrade to LNAV service level, (**LNAV** displayed in magenta), the VDI will remain flagged "NO GP", and no additional downgrade system messages will be generated.

If SBAS becomes unavailable on an RNAV LPV approach, **LPV** will be displayed in yellow, but the CDI and VDI will continue to be shown. At one minute to the FAF, **APR DWNGRADE** will be displayed.

The VDI will be flagged "NO GP". Depending on the available lines of minima for the approach, the system will switch to either LNAV/VNAV or LNAV service level.

Advisory Visual Approaches

The GIFD will provide advisory visual approaches to many runways in the aviation database. Lateral guidance for the visual approach is aligned with the runway bearing. The system also generates vertical guidance from the runway threshold at a GIFD-defined glidepath (usually 3°; refer to the Garmin Pilot's Guide for further information) allowing coupling of the autopilot to the appropriate minimums.

The pilot interface for visual approaches is an extension of the normal approach selection method. At the end of the list of instrument approaches, there will be a set of visual approaches added. Nominally, there will be a visual approach listed for each runway end. The approaches will be labeled with the name VISUAL and the runway number.

Each visual approach has two transitions: the Straight-in transition and the Vectors-to-Final transition. The transitions will be labeled STRAIGHT and VECTORS, respectively. The FMS creates the visual approach waypoints (fixes) based on the runway position and course specified in the navigation database. These are defined in the following table:

Fix Identifier	Description	Distance to runway
RWxxx	Runway fix defined in the navigation database. “xxx” is the runway number and suffix (e.g. RW19L).	N/A
FINAL	The roll-out from the turn to the final approach course is accomplished as this fix is sequenced.	3.5 NM
STRGHT	Initial fix for the Straight-in transition.	6 NM

The waypoints created by the FMS to define a visual approach are fixes stored in the flight plan. When the approach is no longer a part of a flight plan, these waypoints are deleted. A visual approach can be inserted onto the Active Flight Plan or the Standby Flight Plan. A visual approach also can be inserted into a stored flight plan or copied to a stored flight plan in the course of saving the active or standby flight plan.

CDI and VDI indications are equivalent to those of other GPS-based approaches (e.g.- LPV or L/VNAV). The GIFD annunciates VISUAL in the HSI to indicate a visual approach is active.

When conducting a visual approach, it is the pilot's responsibility to ensure terrain and obstacle avoidance. The visual approach does not take terrain or obstacles into account. It is important for the pilot to understand that the Garmin visual approach does not guarantee terrain or obstacle clearance. Therefore, when a visual approach is selected, the message OBSTACLE CLEARANCE IS NOT PROVIDED FOR VISUAL APPROACHES is displayed on the approach selection page and must be acknowledged before the visual approach is loaded into the flight plan.

The TAWS function normally provides some elimination of terrain alerts when flying an approach with vertical guidance. The TAWS logic is adjusted to ensure that there is no elimination of terrain alerts while flying a visual approach.

Visual approaches are intended to be used as an aid to situational awareness. Visual approaches are advisory in nature and do not guarantee terrain and obstacle clearance for the approach runway.

Advisory Vertical Guidance for VOR and NDB Approaches

CAUTION

Advisory vertical guidance does not change the published approach minima.

For VOR and NDB approaches, when a published glide path angle is resident in the navigation databases, the system will provide a GPS-based advisory vertical guidance.

On the touchscreen controllers, the approach selection includes +V when an advisory vertical guidance is available.

During a VOR+V or NDB+V approach, the advisory glidepath indicator is a magenta diamond on the vertical deviation scale.

HomeSafe Emergency Function

HomeSafe is based on the Garmin Emergency Autoland function, which is described in the Garmin Pilot's Guide.

HomeSafe is an emergency autopilot function that is meant to be used in the event of pilot incapacitation, i.e. in situations where the pilot is not capable of operating the airplane. Once activated, HomeSafe enables the automatic landing of the airplane without pilot input.

NOTE

When HomeSafe is activated, the system declares an emergency.

HomeSafe Emergency Function Activation

Anyone on board the airplane can activate the HomeSafe emergency function by pushing the HomeSafe button located on top of the instrument panel.

The HomeSafe emergency function activates when any of the following conditions occurs:

- The HomeSafe activation button is pressed,
- The Level mode has been in operation for two minutes (either by pressing the LVL pushbutton or automatically),
- The EDM function reaches the stabilization altitude (15,000 ft).

When HomeSafe is activated, HOMESAFE RQST is displayed in the CAS window for 15 seconds before HomeSafe starts the automatic landing process. During these 15 seconds, if the autopilot was not engaged prior to the activation of HomeSafe, the Level mode is activated.

HomeSafe uses all of the airplane's systems to perform the airplane's automatic landing.

Once initiated, HomeSafe will perform the following tasks:

- Change the user interface to address non-pilot occupants and inform them about what will occur during the HomeSafe operation in the different flight phases, as shown by a series of informational videos on the MFD,
- Set the transponder to the emergency code (7700),
- Communicate with Air Traffic Control,
- Choose a destination airport and an appropriate flight path to this airport,
- Perform an RNAV approach,
- Establish the airplane in its landing configuration (deploying flaps and the landing gear),
- Land and stop the airplane on the runway,
- Shut down the engine.

To perform this entire sequence, HomeSafe requires the airplane's systems to be fully operational.

WARNING

Use of the HomeSafe emergency function may result in serious injury and/or death because there are too many unknown variables that may affect the successful outcome of an HomeSafe function flight.

HomeSafe Emergency Function Deactivation

The pilot can override the HomeSafe function at any time.

WARNING

HomeSafe deactivation must be performed by a pilot who is:

- **fully capable of flying the airplane, and**
- **fully aware of all actions needed to be performed in reconfiguring the airplane (the flight plan in the FMS is lost, the landing gear and flap positions may not agree with the lever positions for the landing gear and flaps).**

CAUTION

Deactivation of HomeSafe is not recommended while the airplane is on final approach.

While HomeSafe is activated, the cockpit displays no longer comply with the pilot interface requirements (in particular, the engine parameters and CAS messages are not available).

If the pilot is no longer incapacitated and is capable of flying the airplane, he/she must deactivate HomeSafe before taking control of the airplane.

HomeSafe can be deactivated by any of the following actions:

- Pressing twice on the control wheel's AP/TRIM DISC pushbutton,
- Pressing the AP button on the AFCS control unit (applicable only if HomeSafe has taken control of the airplane).

CAUTION

MFD reconfiguration can take up to one minute. During this time, engine instruments and CAS messages can be displayed on the PFD by using DISPLAY BACKUP.

ACFT CONF MISM is displayed in the CAS window if HomeSafe is deactivated after it has begun to set up the airplane in the landing configuration. In this case, the pilot must set the positions of the FLAPS and LANDING GEAR levers to agree with the actual positions of the flaps and landing gear in order to retake control of them.

As the initial flight plan in the FMS has been lost, the pilot will need to create a new one.

Protection - Safety

HS CONFIG MODE is displayed in the CAS window when HomeSafe is in configuration mode.

The HomeSafe function is protected by the HOMESAFE breaker.

Optional Equipment

For optional equipment such as the stormscope, SVS or TAWS, refer to Section 9: Supplements.

Such other optional equipment – as the radio altimeter, the Chartview system or the TAS – are described in the Garmin Pilot's Guide.

NOTE

Refer to Paragraph Chartview System Operating Limitations in Subsection 2.6. for operating limitations of the Chartview system.

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Section 8

Handling, Servicing and Maintenance

Table of Contents

8.1 - General

This section contains the manufacturer-recommended procedures for the airplane's proper ground handling, routine care and servicing of the airplane. Also included in this section are the inspection and maintenance requirements that must be followed if the airplane is to retain its performance and dependability.

It is recommended that a planned schedule of lubrication and preventive maintenance be followed, and this schedule be tailored to the climatic or flying conditions to which the airplane is subjected.

For additional information, refer to the manufacturer's Airplane Maintenance Manual.

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8.2 - Identification Plate

Any correspondence regarding the airplane should include its serial number. This number – together with the model number, type certificate number and production certificate number – is stamped on the identification plate attached to the left side of the fuselage beneath the horizontal stabilizer.

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8.3 - Publications

When the airplane is delivered from the factory, it is supplied with a POH, the Garmin Integrated Flight Deck Pilot's Guide and supplemental data covering optional equipment installed in the airplane (refer to Section 9: Supplements and Pilot's Guides).

In addition, the owner/operator has access to the following publications on the MyTBM.aero website:

- Airplane Maintenance Manual,
- Illustrated Parts Catalog,
- Catalog of Service Bulletins, Service Letters.

CAUTION

The POH must always be carried in the airplane.

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8.4 - Inspection Periods

For information concerning preventive maintenance to be performed, refer to regulations in force in the country of certification.

An Airplane Maintenance Manual must be consulted prior to performing any preventive maintenance to make sure that proper procedures are followed.

Maintenance must be performed by licensed personnel.

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8.5 - Alterations or Repairs

It is essential that the appropriate airworthiness authorities be contacted prior to any alterations or repairs on the airplane to ensure that airplane's airworthiness is not compromised.

Alterations or repairs must be performed by licensed personnel.

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8.6 - Ground Handling

CAUTION

Only move or tow the airplane with someone in the cockpit.

Towing

CAUTION

Using the propeller for ground handling could result in serious damage, especially if pressure or pulling is exerted on blade tips.

The airplane should be moved on the ground with a tow bar and a suitable vehicle in order not to damage the nose gear steering mechanism. The nose gear fork is equipped with an integrated towing fitting.

CAUTION

Do not tow the airplane when the flight controls are secured. When towing with a vehicle, do not exceed the nose gear turning angle, as this may result in damage to the gear and steering mechanism – see Figure 8.6.1.

Parking

When parking the airplane, position it into the wind. Do not set the parking brake when brakes are overheated, or during cold weather when accumulated moisture may freeze the brakes. Care should be taken when using the parking brake for an extended period of time – during which an air temperature rise or drop could cause difficulty in releasing the parking brake or damage the brake system.

Make sure that the FUEL TANK SELECTOR is set to OFF.

NOTE

When the airplane is on ground, do not use solar screens or shields that are installed inside the airplane, or leave sun visors down against windshield. The reflected heat from these items causes a temperature increase that accelerates crack growth or crazing, and may cause the formation of bubbles in the inner layer of multilayer windshields.

When parking the aircraft for periods of longer than 24 hours, use the protective windshield cover, securing it with the lateral and underside straps.

For long term parking, the use of plugs and covers (static ports, pitot, engine air inlet, NACA air inlets, exhaust stubs), along with the cockpit cover, tie-downs, wheel chocks, propeller lock and control lock is recommended.

In severe weather and high wind conditions, tie the airplane down as outlined in the following description.

Tie-down

A proper tie-down procedure is the best protection against damage to the airplane caused by gusty or strong winds. To tie down the airplane securely, proceed as follows:

- Install the control lock – see Figure 8.6.2,
- Chock all wheels,
- - Use sufficiently strong ropes or chains to hold airplane down; insert a rope/ chain in each fitting located under the wings; secure each rope to a ramp tie-down or to a mooring rod,
- Check that airplane doors are closed and locked.

Jacking

When it is necessary to jack the airplane off the ground, refer to the Airplane Maintenance Manual for specific procedures and for the equipment required.

Leveling

Level the airplane as described in the Airplane Maintenance Manual.

Flyable Storage (28 Days or Less)

Airplanes placed in storage for a maximum of 28 days are considered in flyable storage.

Storage from 0 to 7 days:

- Engine: according to the P&WC Engine Maintenance Manual.
- Airplane fueling: keep fuel tanks full to minimize condensation in the tanks.
- Keep the battery fully charged to prevent the electrolyte from freezing in cold weather.
- Close the oxygen cylinder isolation valve.

Storage from 8 to 28 days:

- Engine: according to the P&WC Engine Maintenance Manual.
- Airplane fueling: keep fuel tanks full to minimize condensation in the tanks.
- Battery:
  . Pull the BATT BUS breaker in the front cargo compartment,

. Check the charge level at regular intervals. Keeping the battery fully charged prevents the electrolyte from freezing in cold weather.

- Close the oxygen cylinder isolation valve.

Long Term Storage Without Flying (More Than 28 Days)

Refer to the Airplane Maintenance Manual for the procedures to follow.

Figure 8.6.1 - Turning Angle Limits

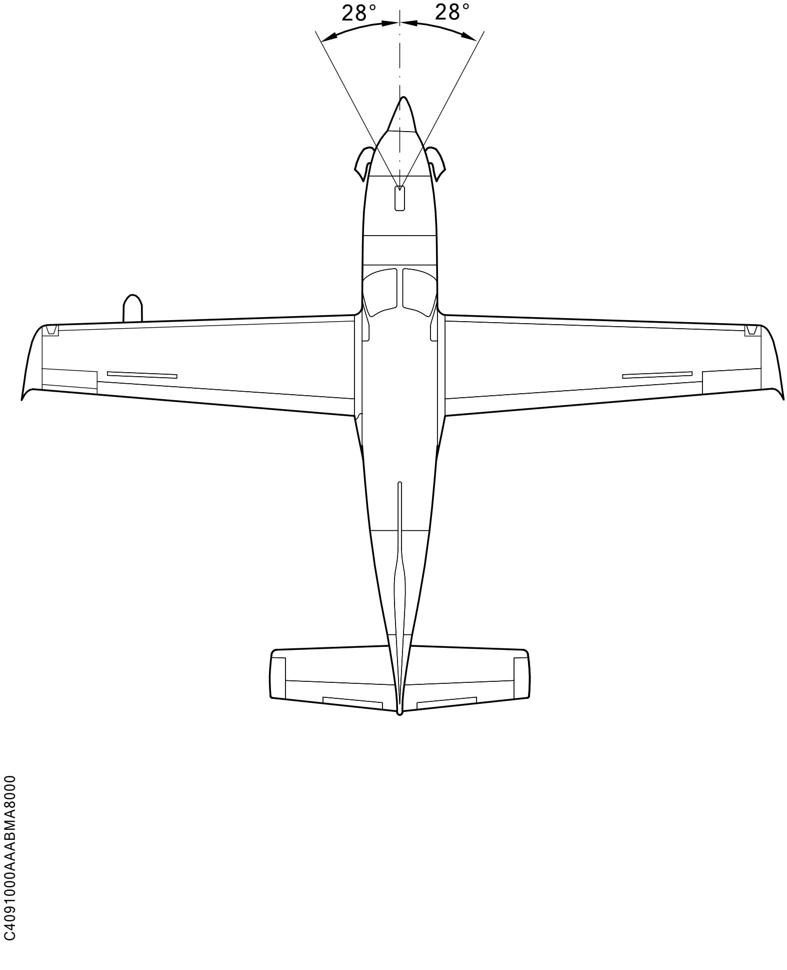
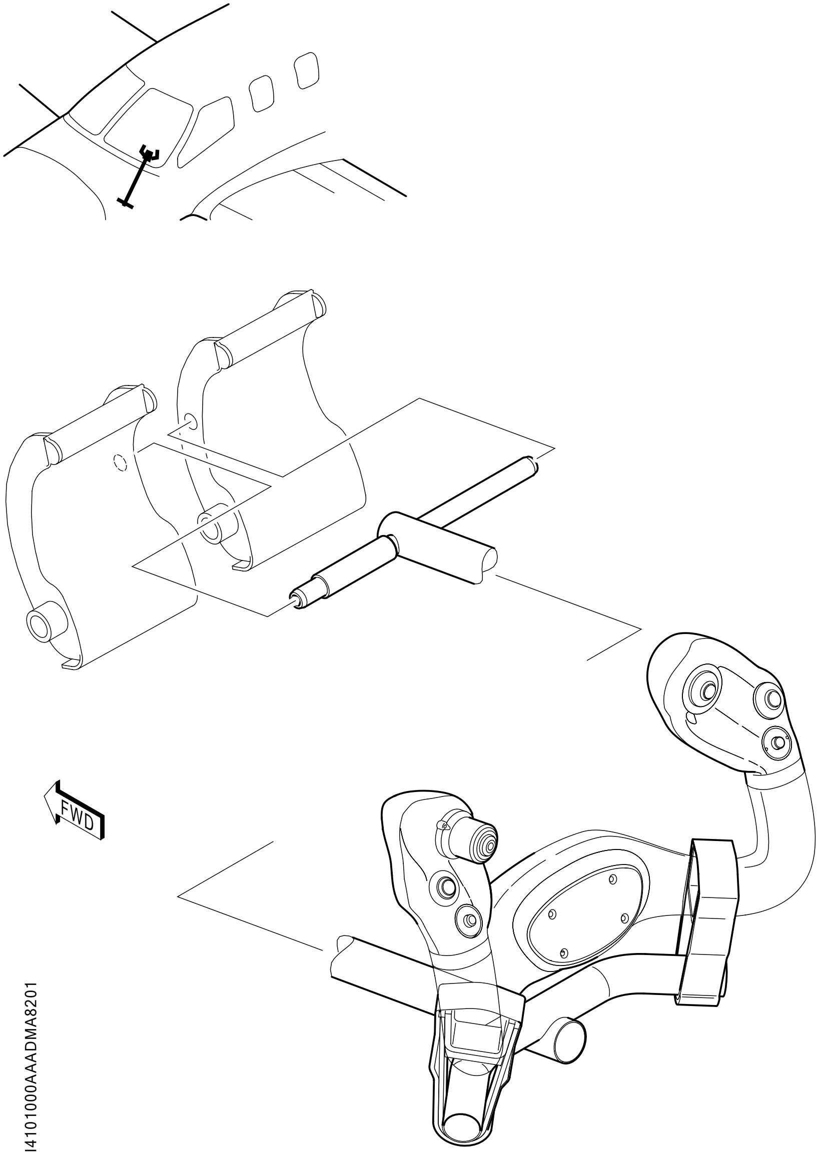


Figure 8.6.2 - Control Lock



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8.7 - Servicing

Maintenance

In addition to the preflight inspection – refer to procedure Preflight Inspection in Subsection 4.4. , the Airplane Maintenance Manual details the airplane's servicing, inspection and test requirements.

The Airplane Maintenance Manual outlines all items that require servicing, inspection, testing or overhaul.

Engine Oil

Type of Oil

CAUTION

Do not mix different viscosities or specifications of oil as their different chemical structure can make them incompatible.

Specification:

Table 8.7.1 - Recommended Engine Oil Types [Reference: P&WC Engine Maintenance Manual, latest revision]

Nominal viscosity	Specification	NATO code
5cSt	MIL-PRF-23699	O-156 (STD) O-154 (HTS)

Oil Capacity

- System total capacity: 12.7 quarts (12 liters) (oil cooler included)
- Usable capacity: 6 quarts (5.7 liters)

Servicing

The oil filter should be cleaned/replaced at intervals recommended in the P&WC Engine Maintenance Manual (EMM) (Refer to Chapter 05-20 – Scheduled Maintenance – Table 2).

Oil Level Check

To prevent overfilling of the engine oil system, and high oil consumption, an oil level check is recommended within 30 minutes after engine shutdown. The ideal interval is 15 to 20 minutes. If more than 30 minutes have passed and the dipstick indicates that oil is needed, start the engine and run at IDLE for five minutes, then recheck the oil level.

Check the oil level against the dipstick marking, and top up as required. Normal oil level is between MAX HOT and one US quart (0.83 Imp. Quart, 0.95 liters) below MAX HOT, with the engine in horizontal attitude.

NOTE

Filling the oil to the maximum level may result in a high consumption rate, with oil exiting through the accessory gearbox breather.

CAUTION

When the filler cap assembly is installed and locked, no movement of the cap should occur.

Fuel

For fuel type, and limitations, refer to Paragraph Fuel in Subsection 2.3. .

CAUTION

Never fly the airplane with non-approved or contaminated fuel (containing water, sand, rust, dust, etc.).

WARNING

During all fueling operations, ensure that fire fighting equipment is available nearby
Do not allow smoking or an open flame in the vicinity of the airplane while fueling.
Attach a grounding wire to an unpainted metallic part of the airplane.
Do not operate any avionics or electrical equipment on the airplane during fueling.

CAUTION

During fueling operations, take care to not damage the pneumatic deicer boots located on wing leading edges.
A protective apron should be used if possible.

Fuel Quality Management

Fuel is contaminated when it contains any material (water, sand, rust, dust, microbial growth, etc.) that was not provided under the fuel specification. In addition, additives that are not compatible with the fuel used can cause the fuel to become contaminated.

All aviation fuels absorb water from the air and contain some dissolved, suspended and/or free water. The amount of dissolved water can increase with the temperature of the fuel. Whenever the temperature of the fuel decreases, the dissolved water becomes suspended water that slowly fall to the bottom of tank and becomes free water.

Among contaminants, water is always present in the fuel because:

- Remaining free water becomes suspended water when the airplane is in motion,
- Dissolved water cannot be fully removed during a fuel service and will be released from suspension as the fuel temperature decreases during flight,
- Water can also be introduced during refueling, or during flight through the fuel tank vent system when descending in humid air.

Fuel quality management is ensured by frequent fuel sampling.

Refer to procedure Preflight Inspection in Subsection 4.4. .

Fuel Sampling

Prior to the first flight of the day and after each fueling, use a clear sampler and drain fuel from all five fuel drain valves to determine if contamination is present in the fuel system and to verify that the airplane was fueled with proper fuel.

If contamination is present, repeatedly take samples from all five of the fuel drain valves until all the contamination has been removed.

WARNING

If after repeated sampling there is still evidence of contamination, the fuel tanks must be completely drained, and the fuel system must be cleaned. Do not fly the airplane with contaminated or unapproved fuel.

NOTE

To minimize the possibility of water condensing on the walls of partially filled tanks, and so free water, it is recommanded that airplane be refueled after each flight, respecting the weight and balance limits.

Fuel Additives

The fuel used must contain an anti-ice additive that conforms to MIL-I-27686 or MIL-I-85470 specifications.

Strict adherence to recommended preflight draining instructions, as outlined in Section 4, will eliminate any free water accumulations in the tank sumps. While small amounts of water may still remain emulsified in the gasoline, it will normally be consumed and go unnoticed during operation of the engine.

One exception to this can be encountered when operating under the combined effect of the use of certain fuels with high humidity conditions on the ground, followed by flight at high altitude and low temperature. Under these unusual conditions, small amounts of emulsified water can precipitate from the fuel stream and freeze in sufficient quantity to induce partial icing of the engine fuel system.

While these conditions are quite rare and will not normally be a problem for owners and operators, they do exist in certain areas of the world and consequently must be dealt with whenever encountered.

Therefore, to alleviate the possibility of fuel icing occurring under these unusual conditions, it is required to add an ethylene glycol monomethyl ether (EGME or DIEGME) compound to the fuel supply.

The introduction of an EGME or DIEGME compound into the fuel provides two distinct effects:

- It absorbs the dissolved water from the fuel,
- Alcohol lowers the fuel’s freezing temperature.

EGME or DIEGME must be carefully mixed with the fuel in a concentration of between a minimum of 0.06% and a maximum of 0.15% by volume. Figure 8.7.1 provides EGME or DIEGME / fuel mixing ratio information.

CAUTION

Do not permit the EGME or DIEGME to come in contact with the airplane finish or fuel tank.
Proper mixing of the EGME or DIEGME with the fuel is extremely important. An excessive concentration (greater than 0.15% by volume maximum) will result in detrimental effects to the fuel tanks through deterioration of the protective primer, sealants and system seals, and engine components. Use only blending equipment recommended by the manufacturer to obtain proper proportioning.

Prolonged storage of the airplane will result in a water buildup in the fuel which leeches out the additive. An indication of this is when an excessive amount of water accumulates in the fuel tank sumps. The concentration can be checked using a differential refractometer. It is imperative that the differential refractometer’s technical manual be followed explicitly when checking the additive concentration.

Fuel and Fuel Additives in Ukraine and CIS countries

It is possible to use kerosene GOST 10227 RT with the addition of anti-icing additive:

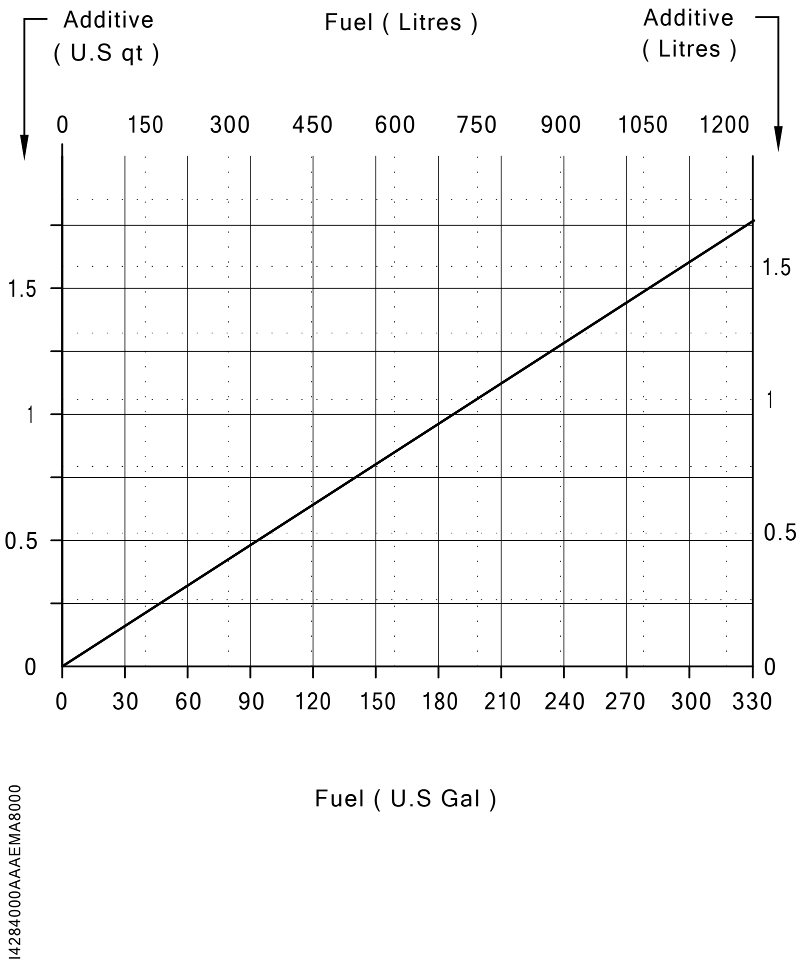
- Liquid И - GOST 8313-88

The above-mentioned additive is added in the quantity equal to 0.3% per volume.

CAUTION

Refer to the P&WC Engine Maintenance Manual's latest revision for appropriate quantities of anti-ice additive.

Figure 8.7.1 - Additive Mixing Ratio (EGME or DIEGME)



Landing Gear

Nose Gear Tire

5.00-5 10 PR - Inflation pressure: 98 psi (6.7 bars) *

Main Gear Tires

18 5.5 10 PR - Inflation pressure: 135 psi (9.32 bars) *

Nose Gear Shock Absorber

Fill with AIR 3520 B (MIL.H5606E) hydraulic fluid; inflate with nitrogen to 87 psi (6 bars).

Main Gear Shock Absorbers

Fill with AIR 3520 B (MIL.H5606E) hydraulic fluid; inflate with nitrogen to 160 psi (11 bars).

Hydraulic System

Check every 100 hours and service with AIR 3520 B (MIL.H5606E) hydraulic fluid.

Brakes

Service as required with AIR 3520 B (MIL.H5606E) hydraulic fluid.

NOTE

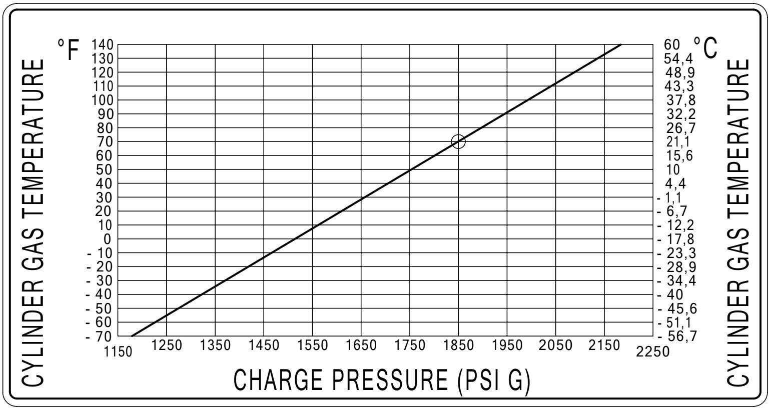
In very cold conditions, it is necessary to apply higher inflation pressures to tires and shock absorbers – refer to Subsection Utilization in Cold Weather (-0 °C to -25 °C) or Very Cold Weather (-25 °C to -40 °C).

(*) Tire inflation pressures are given for an airplane on the ground at 21 °C. An ambient temperature change of 3 °C produces a change in pressure of approximately 1%.

Oxygen

An oxygen replenishment device is installed directly on the oxygen cylinder head. It consists of a charging valve and a pressure gauge graduated from 0 to 2,000 PSIG. A chart located on the inside of the cylinder service door – see Figure 8.7.2 – indicates the maximum cylinder charge pressure for the ambient temperature.

Figure 8.7.2 - Cylinder Charge Pressure Chart



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Replenishment Procedure

WARNING

Make sure that the airplane is fitted with a grounding cable and is properly grounded. The oxygen cart must be electrically bonded to the airplane.
Do not operate the airplane's electrical switches or connect/disconnect ground power during oxygen system replenishment.
Do not operate the oxygen system during refueling/defueling or perform any other servicing procedure that could cause ignition.
The contact of petroleum-based substances such as grease or oil to oxygen creates a serious fire hazard. Do not use oil or grease with the oxygen replenishment equipment.
Always open the shut-off valve slowly to avoid generating heat, and replenish the system slowly at a rate not exceeding 200 PSIG (13.7 bars) per minute.

CAUTION

Replenishment of the oxygen system should only be performed by qualified personnel.

NOTE

The cylinder is fully charged at a pressure of 1,850 PSIG (127 bars) at a temperature of 70 °F (21 °C). For cylinder temperatures other than 70 °F (21 °C), refer to Figure 8.7.2, which lists the required pressures according to the cylinder temperature.

1. Open the oxygen service door at the rear of the right wing's fairing.
2. Measure the oxygen cylinder temperature.
3. Make sure the thermometer indication is constant. Note the indication.
4. Refer to the temperature/pressure chart for the correct oxygen cylinder pressure.
5. If the pressure on the oxygen cylinder gauge is lower than the maximum for the cylinder temperature, fill the oxygen cylinder:

   CAUTION

   The minimum pressure for the oxygen cylinder is 217 PSIG (15 bars). If the oxygen cylinder pressure falls below the minimum, the cylinder must be purged before refilling.
   Inform the maintenance department.

   - Make sure the area around the oxygen cylinder charging valve is clean.
   - Remove the cap from the charging valve.
   - Make sure the oxygen supply hose is clean, and connect it to the charging valve.
   - Slowly pressurize the oxygen cylinder to the correct pressure.
   - Close the oxygen supply and allow the cylinder temperature to stabilize.
   - Monitor the oxygen pressure on the gauge and fill to the correct pressure if necessary.
   - Release the pressure in the oxygen supply hose and disconnect from the charging valve.
   - Install the cap on the charging valve.
6. Make sure all tools and materials are removed and the work area is clean and free from debris.
7. Close the oxygen service door.

Repacking Instructions for Passenger Masks

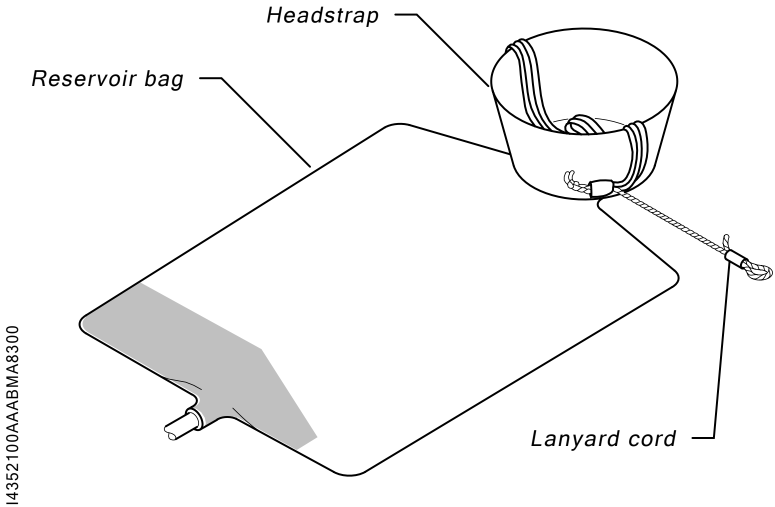
CAUTION

Do not use oil or other petroleum-based lubricants on passenger oxygen masks or deployment containers. Oil-based lubricants are a fire hazard in oxygen-rich environments. Repacking procedures shall be performed by personnel familiar with the instructions and warnings in this document. Improper packing can damage the masks or result in failure of the masks to deploy.

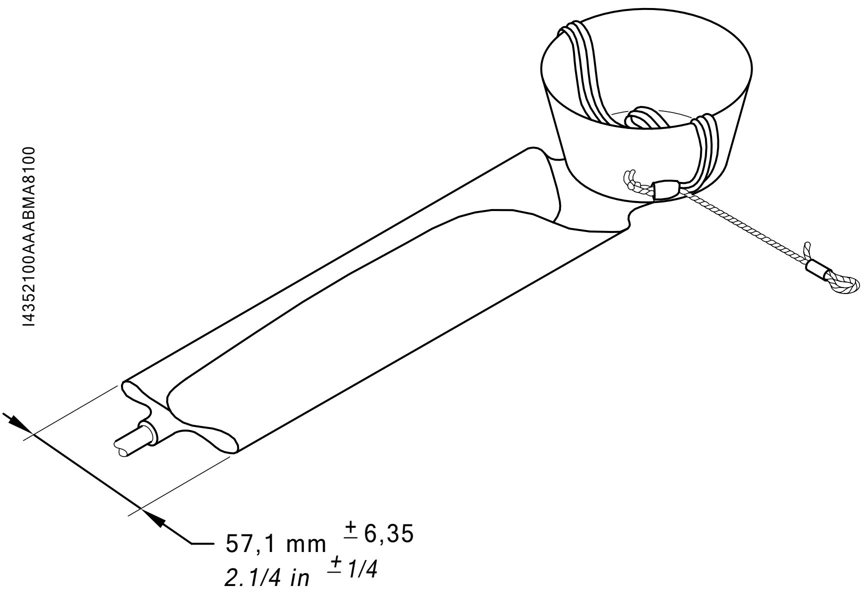
WARNING

Masks shall be repacked in an area free of oil, grease, flammable solvents or other contaminants.

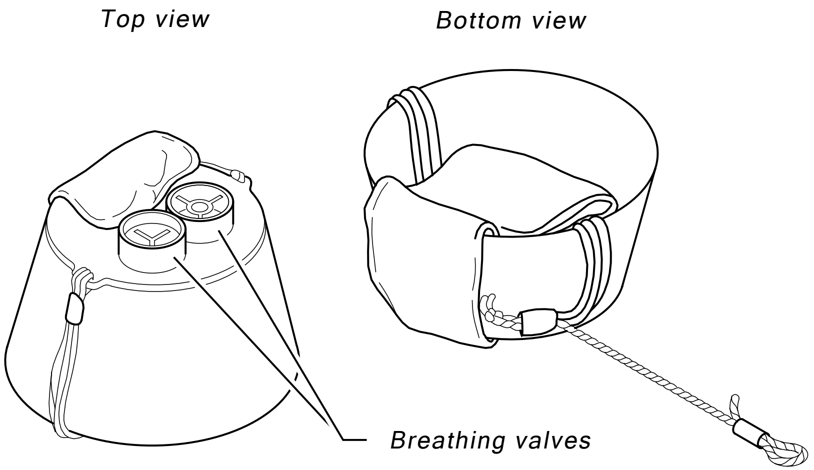
1. Inspect and disinfect the mask and deployment container with an aqueous solution of Zephiran Chloride (Scott Aviation P/N 00-2572) or with disinfection cleaners (EROS P/N SAN50). After disinfecting and thoroughly drying the mask, lightly dust the outside of the facepiece with Neo-Novacite powder (Scott Aviation P/N 00-736). Contamination can be removed with mild soap and water solution.
2. Fold the headstrap into the facepiece. Pull the lanyard cord outward to the facepiece's side so that it does not interfere with repacking.
3. Lay the reservoir bag on a flat surface and smooth out any wrinkles.



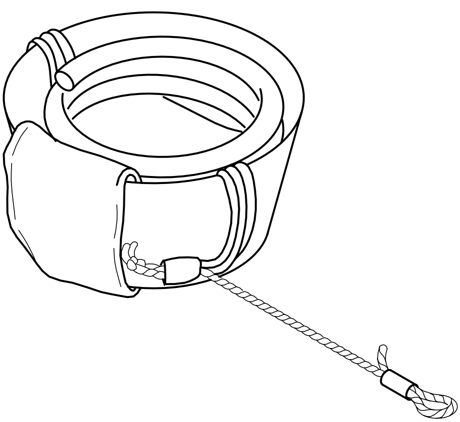
4. Gently fold reservoir bag lengthwise into thirds (outside edges folded inward over the bag's center). Do not crease the bag.



5. Fold the reservoir bag away from breathing valves and into the facepiece. Make sure the bag does not cover the breathing valves.



6. Coil the oxygen tubing inside facepiece over the reservoir bag.



7. Connect oxygen tubing to the manifold oxygen fitting.

WARNING

Make sure the lanyard pin is inserted into the correct check valve for the mask that is being installed. If pins are cross-connected, lanyard cords pulled by passengers will initiate oxygen flow to another mask.

8. Insert lanyard pin into the corresponding check valve.
9. 9. Place the mask in the deployment container with facepiece first. Make sure that the oxygen tubing and lanyard cord are free to deploy and are not caught between the container and the lid.
10. Close and latch deployment container lid.

BatteryMINDer Charger

See Figure 8.7.3.

CAUTION

Carefully read the charger manufacturer's instructions prior to use.
The charger shall be used only on the ground.
The charger is not designed to be permanently installed on the airplane.
Never charge a battery that is frozen or is at a temperature above 51 °C (123 °F).

CAUTION

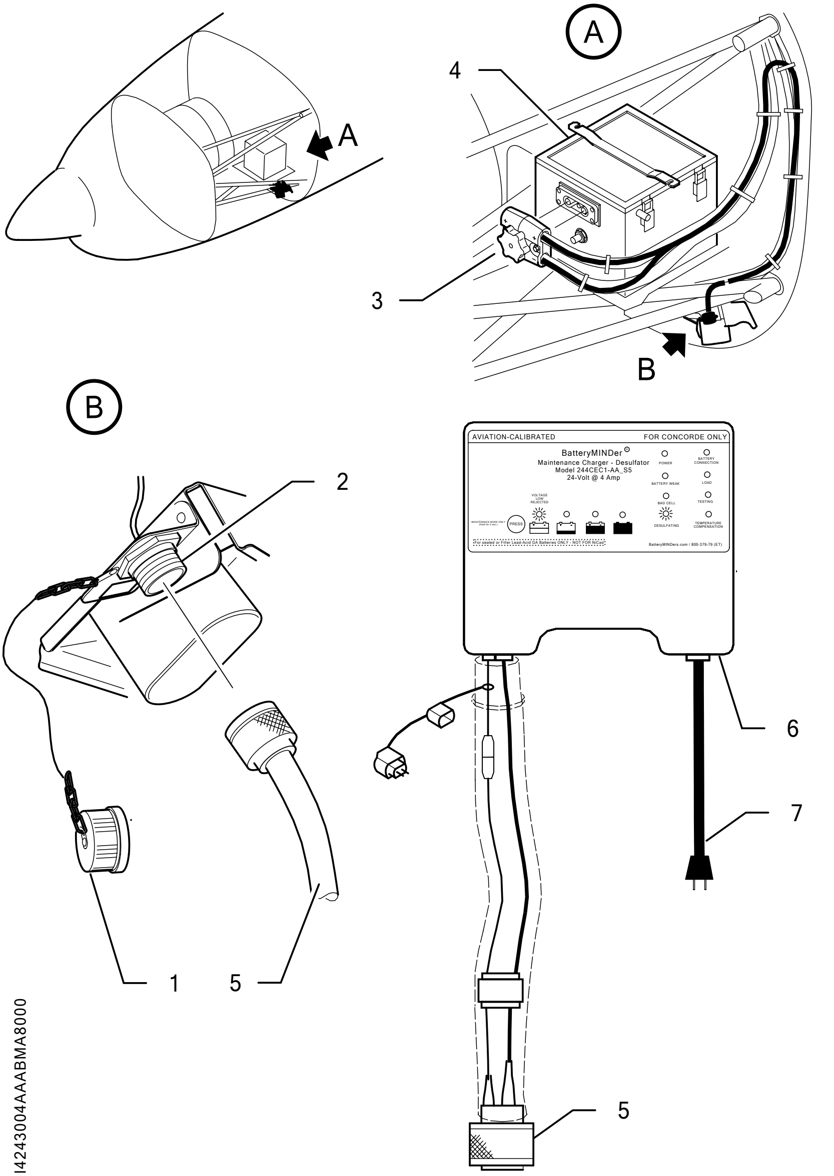
Make sure that the Quick-Disconnect connector (3) is connected to the battery (4) before setting the BatteryMINDer charger's power.

1. Pull down the crash lever.
2. Pull the BATT BUS breaker located in the front cargo compartment.
3. Remove the cap (1).
4. Connect the BatteryMINDer charger connector plug (5) to the airplane connector (2).
5. Connect the BatteryMINDer charger (6) to the electrical mains with the plug (7).
6. Begin the operations according to the charger's instruction manual.
7. After use, disconnect the BatteryMINDer charger plugs (7) then (5), put the cap (1) back on the connector (2) and push the BATT BUS breaker located in the front cargo compartment.

Key to Figure 8.7.3

1) Cap
2) Connector
3) Quick-Disconnect connector
4) Battery
5) BatteryMINDer charger connector plug
6) BatteryMINDer charger
7) Plug

Figure 8.7.3 - Removal / Installation of BatteryMINDer Charger



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8.8 - Airplane Cleaning and Care

Windshield and Windows

The windshield and windows should be cleaned with an airplane windshield cleaner.

NOTE

Refer to the Airplane Maintenance Manual for products and application procedures.

Apply the cleaner sparingly with a soft cloth and rub with moderate pressure until all dirt, oil scum and bug stains are removed. Allow the cleaner to dry, then wipe it off with a soft flannel cloth.

CAUTION

Do not use any of the following products on – or for – the cleaning of windows: methanol, methylated alcohol, gasoline, benzene, xylene, methyl-ethyl-ketone, acetone, carbon tetrachloride, lacquer paint thinners, and commercial or household window cleaning sprays. In case of doubt concerning a product, do not use it.
During the cleaning operation, avoid wearing objects such as rings, watches and bracelets; and exercise care to prevent buttons, buckles and any hard objects from touching the windshield and the windows.
Adhesive tapes other than Minnesota 3M Type 670 shall not be used on acrylic surfaces.
Never use buffing machines, as excessive force or speeds might produce irremediable defects.

Continue the process by carefully washing the windshield/windows with a mild detergent and plenty of water. Rinse thoroughly, then dry with a clean moist chamois. Do not rub the plastic with a dry cloth, as this builds up an electrostatic charge that attracts dust. Waxing will finish the cleaning operation. A thin, even coat of wax polished out by hand with a clean, soft flannel cloth will fill in minor scratches and help prevent further scratching.

Do not use a canvas cover on the windshield unless freezing rain or sleet is anticipated, as the cover may scratch the plastic surface.

Painted Surfaces

Refer to the Airplane Maintenance Manual for the products and procedures to apply.

Propeller Care

Preflight inspection of propeller blades for nicks – and cleaning them occasionally with a cloth soaked with soapy water to remove grass and bug stains – will assure long blade life. Never use an alkaline cleaner on the blades; remove grease and dirt. Refer to the Airplane Maintenance Manual for the procedures to follow.

Engine Care

Refer to the Airplane Maintenance Manual for the procedures to follow.

Interior Care

To remove dust and loose dirt from the upholstery and carpet, clean the interior regularly with a vacuum cleaner.

For additional information, refer to the Airplane Maintenance Manual.

8.9 - Preparation of the Airplane (Equipment and Furnishings)

WARNING

For all cabin layouts, make sure that access to emergency exit is free at all times.

CAUTION

Removed equipment items must be stored in a manner that ensures their integrity.

Numerous cabin layout configurations are authorized by airplane manufacturer. They are outlined in Section 7.

This procedure specifies how to change the 6-seat layout into a 4-seat configuration, and vice versa. Also, it can be used partly to remove or install equipment items.

However, it is the pilot's responsibility to ensure that all necessary authorizations are obtained from the appropriate regulatory authority.

1. Conversion of 6-seat accommodation into 4-seat accommodation – see Figure 8.9.1, Figure 8.9.2, Figure 8.9.3 and Figure 8.9.4
   A. Tools and consumable materials
      - Seat protective covers
   B. Preparation
      1) Make sure the SOURCE selector is set to OFF and the crash lever is down.
   C. Removal of rear seats – see Figure 8.9.1

      To remove rear seats, perform the following operations:

      CAUTION

      To prevent damage to seat cushion covers, protective covers should be put on the seats.

      1) Install protective covers.
      2) Unlock backrest using backrest tilting handle and fold it forward.

NOTE

For the right-side rear seat, the backrest tilting handle is located behind backrest.

3) Unlock seat using seat tilting handle and tilt it forward.

CAUTION

Make sure to disconnect the seat heating system and the headset plug harnesses before the removal of the seat to prevent harness damage.

4) Disconnect both the heating system and the headset plug harnesses. Clip the loose connectors to the holders located on the seat structure.

NOTE

Left-side rear seat does not have a plug for headset. At this station, the headset is plugged behind the right-side rear seat backrest.

5) Clear the carpet from under the seat to facilitate moving in rails.
6) Open the floor hatch and clip the loose connectors to the holders located under floor panel. Close the floor hatch.
7) Hold the seat in tilted position and unscrew quick links of strap located under the left-side seatpan.

NOTE

This operation is specific to the left-side seat.

8) Pull up and hold left-side and right-side rings, and turn knobs by 90° in order to release and keep locks in up position.
9) Move the seat in the rails to line up pads with rail apertures.
10) Remove the seat.

NOTE

Ensure proper storage of strap with left-side rear seat to avoid loosing part.

D. Removal of intermediate seats – see Figure 8.9.2 and Figure 8.9.4

To remove intermediate seats, perform the following operations:

1) Install protective covers.
2) Pull backrest bottom upholstery to remove it.

CAUTION

Make sure to disconnect the seat heating system and the headset plug harnesses before the removal of the seat to prevent harness damage.

3) Disconnect both the heating system and the headset plug harnesses. Clip the loose connectors to the holders located on the seat structure.
4) Clear the carpet from under the seat to facilitate moving in rails.
5) Open the floor hatch and clip the loose connectors to the holders located under floor panel. Close the floor hatch.
6) Pull up locking handle located under the pan, on the seat rear side, to unlock it.
7) Move the seat in the rails to line up pads with rail apertures.
8) Remove the seat.
9) Install backrest bottom upholstery.

CAUTION

In order to prevent deflectors damage, it is necessary to remove them.

10) Remove deflector maintained with self-gripping strap.
11) If necessary, remove the cabin central carpet.

NOTE

If one of two cargo nets must be installed, it is necessary to use the carpet with appropriate cuttings.

E. Removal of a cabinet

NOTE

This operation must be carried out by a service center.

F. Installation of intermediate seats – see Figure 8.9.2 and Figure 8.9.4

1) Install deflector, ensuring that both red marks are aligned with the deflector holes – see Figure 8.9.4.

NOTE

Position deflectors as indicated on label, according to future position of intermediate seat, in order to optimize cabin cooling.

NOTE

If seats are installed facing flight direction (frontwards), the left-side seat must be installed on the right and the right-side seat on the left in order to have the armrest on aisle side.

2) Pull backrest bottom upholstery to remove it.
3) Clear the carpet from seat area to facilitate moving in rails.
4) Position the seat and put lock near the color mark made on rail bottom on aisle side.

NOTE

The color mark in the rail is aligned with red marks.

5) Open the floor hatch and remove the clips from the holders located under the floor panel and connect both the heating system and headset plug harnesses. Clip the connectors on the holders located on the seat structure.
6) Pull up locking handle , insert pads into rail apertures and then, move the seat so that lock is in front of the color mark.
7) Release locking handle to lock the seat.

WARNING

Verify that lock and all pads are engaged and locked into rails, trying to move seat forward and backward.

8) Install backrest bottom upholstery.

NOTE

Adjust it properly; make sure not to obstruct deflector outlet.

9) Slide properly the carpet under the seat.

10) Remove protective covers.

G. Final operations

1) If removed, install cabin central carpet suited to the intended use.

NOTE

Slide properly the carpet under doorstep.

2) If necessary, remove the baggage compartment partition net and install the small or large cargo net – refer to Paragraph Use of Cargo Nets in Subsection 7.3. .

3) Make sure the work area is clean and free from debris.

4) Determine weight and balance – refer to Paragraph General in Subsection 6.4. .

2. Conversion of 4-seat accommodation into 6-seat accommodation – see Figure 8.9.1, Figure 8.9.2, Figure 8.9.3 and Figure 8.9.4

A. Tools and consumable materials

- Seat protective covers

B. Preparation

1) Make sure the SOURCE selector is set to OFF and the crash lever is down.

2) If installed, remove the cargo net.

3) Remove intermediate seats – refer to paragraph 1.D.

4) Remove the deflectors maintained with self-gripping strap.

5) If necessary, remove the cabin central carpet.

C. Installation of cabinet

NOTE

This operation must be carried out by a service center.

D. Installation of intermediate seats

1) Install intermediate seats – refer to paragraph 1.F.

2) If removed, install the baggage compartment partition net.

3) If removed, install cabin central carpet.

E. Installation of rear seats – see Figure 8.9.1

1) Make sure the work area is clean and free from debris.

2) Clear the carpet from seat area to facilitate moving in rails.

3) Check that knobs maintain locks in up position.

4) Position the seat, fold it forward, refer to detail B, and insert pads into rail apertures.
5) Move the seat so that locks are in front of the color mark made on rail bottom.
6) Pull up and hold left-side and right-side rings and turn knobs by 90° in order to insert locks into rail apertures.
7) Make sure the seat is correctly locked on rails.
8) Tilt seat forward, hold it and slip strap around the locking control hinge pin. Screw quick links.
9) Open the floor hatch and remove clip from holder located under floor panel and connect heating system harness. Clip connectors on the holder located on the seat structure.
10) Tilt the seat rearward and lock it using seat tilting handle.
11) Fold up the backrest and lock it using backrest tilting handle.
12) Slide properly the carpet under the seat.
13) Remove protective covers.

F. Reconditioning

1) Make sure the work area is clean and free from debris.
2) Determine weight and balance – refer to Paragraph General in Subsection 6.4. .

3. Additional configurations

NOTE

Removed seats can only be reinstalled at their original locations. Rear seats (left or right) are the only ones that can be installed in the rear seat zone along the cabin axis on both central rails – refer to Paragraph Seats, Belts and Harnesses in Subsection 7.3. .

NOTE

Numerous cabin layout combinations involving the seats (rear and intermediate) are authorized, and can be performed by the pilot or service centers; installation arrangements with cabinet(s) are to be performed by service centers only.
However, it is the pilot's responsibility to ensure that all necessary authorizations are obtained from the appropriate regulatory authority.

NOTE

To remove or install these elements, use Paragraph 1 or 2. Refer to Table 8.9.1.

NOTE

After these operations, determine the weight and balance. Refer to Paragraph General in Subsection 6.4. .

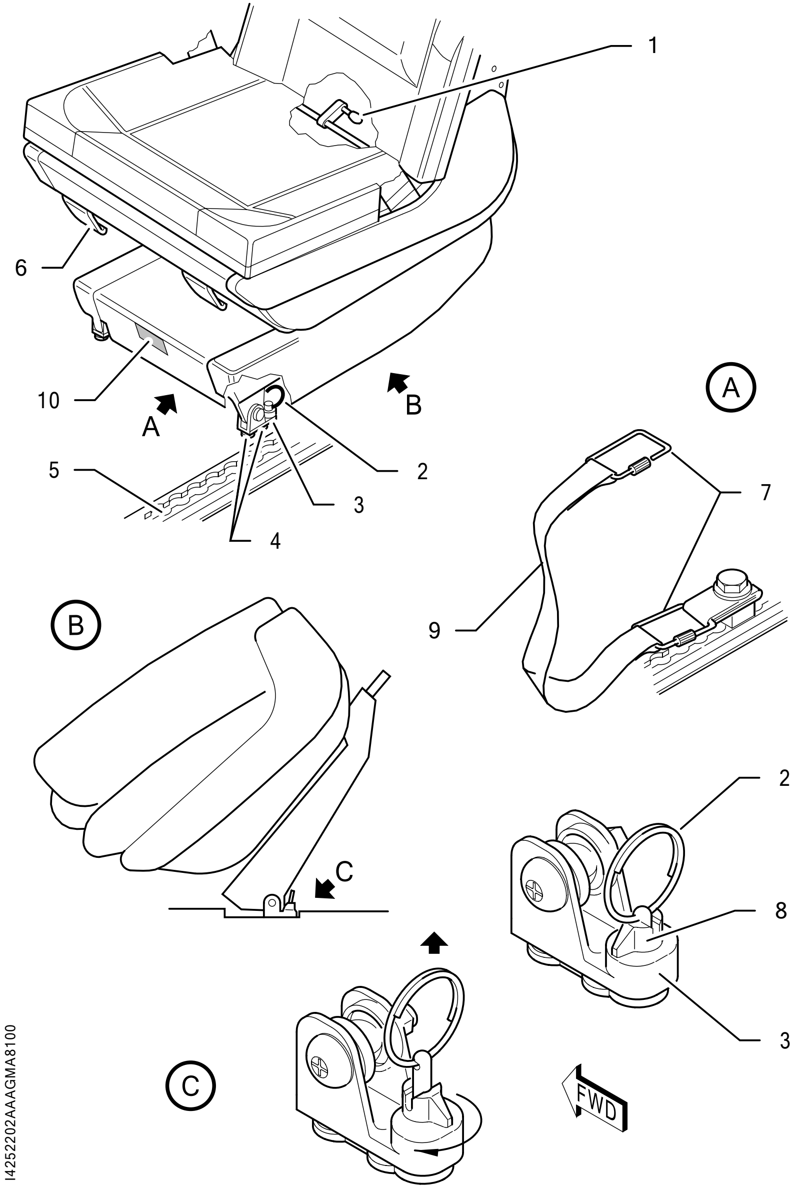
Table 8.9.1 - Additional Configurations

Equipment	Action	Description / Operation
Rear seat	Removal	Paragraph 1.C.
	Installation	Paragraph 2.E.
Intermediate seat	Removal	Paragraph 1.D.
	Installation	Paragraph 1.F.
Cargo net	Installation	Paragraph Use of Cargo Nets in Subsection 7.3.

Key to Figure 8.9.1

1) Seat tilting handle
2) Ring
3) Lock
4) Pad
5) Rail
6) Backrest tilting handle
7) Quick link
8) Knob
9) Strap
10) Seat heaters and headset connectors

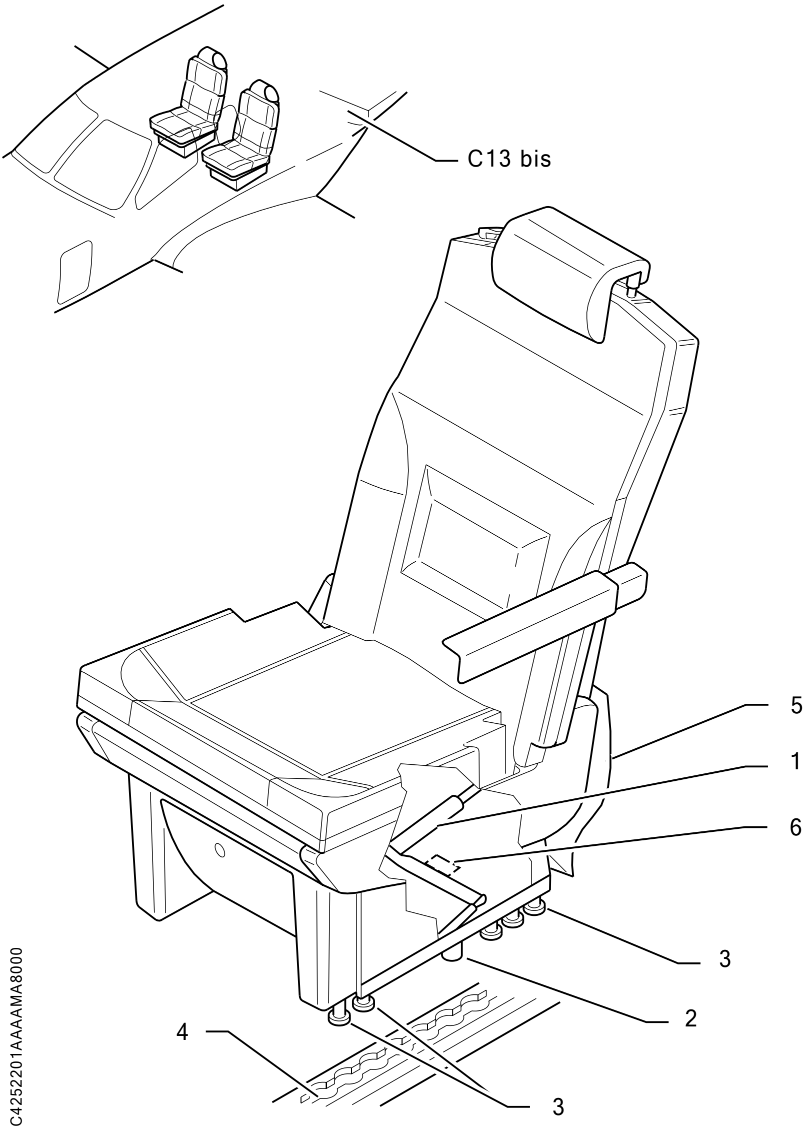
Figure 8.9.1 - Removal / Installation of Rear Seat



Key to Figure 8.9.2

1) Locking handle
2) Lock
3) Pad
4) Rail
5) Backrest bottom upholstery
6) Seat heaters and headset connectors

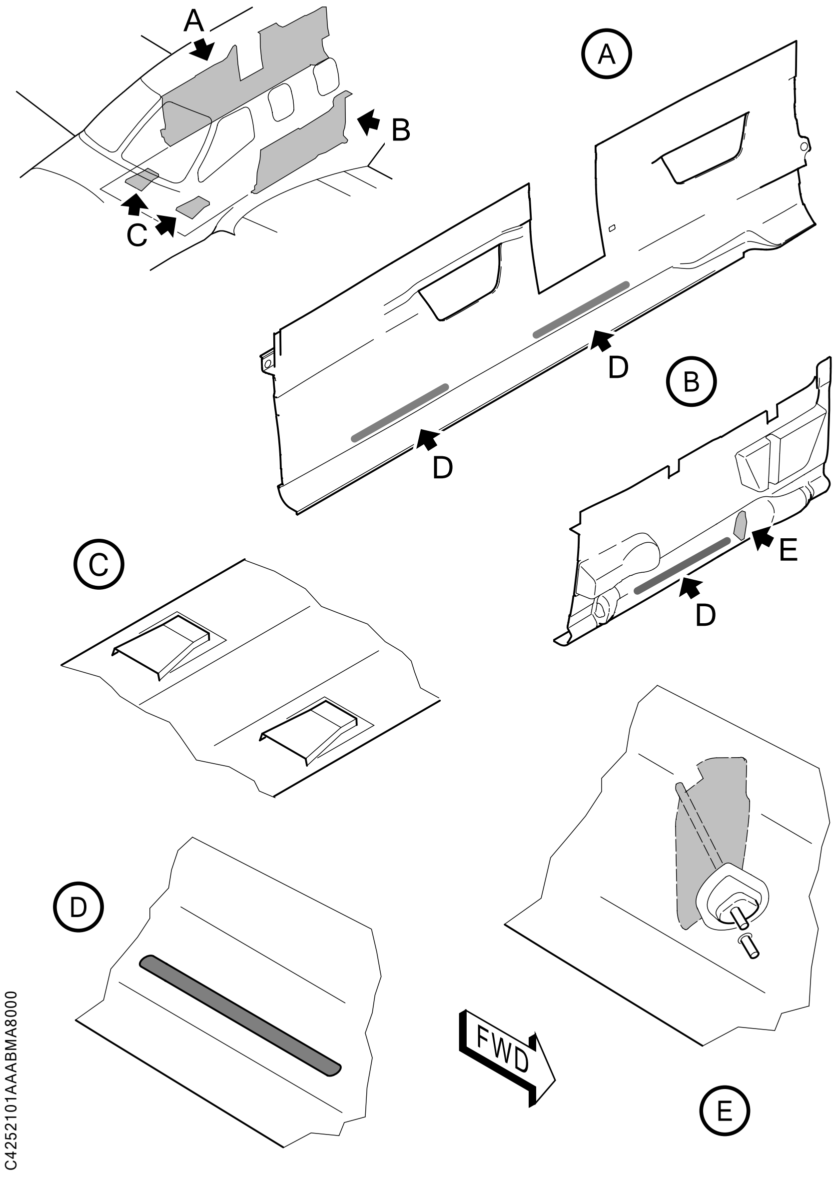
Figure 8.9.2 - Removal / Installation of Intermediate Seat



Key to Figure 8.9.3

1) Blanking plug
2) Blanking plug
3) Blanking device assy
4) Deflector

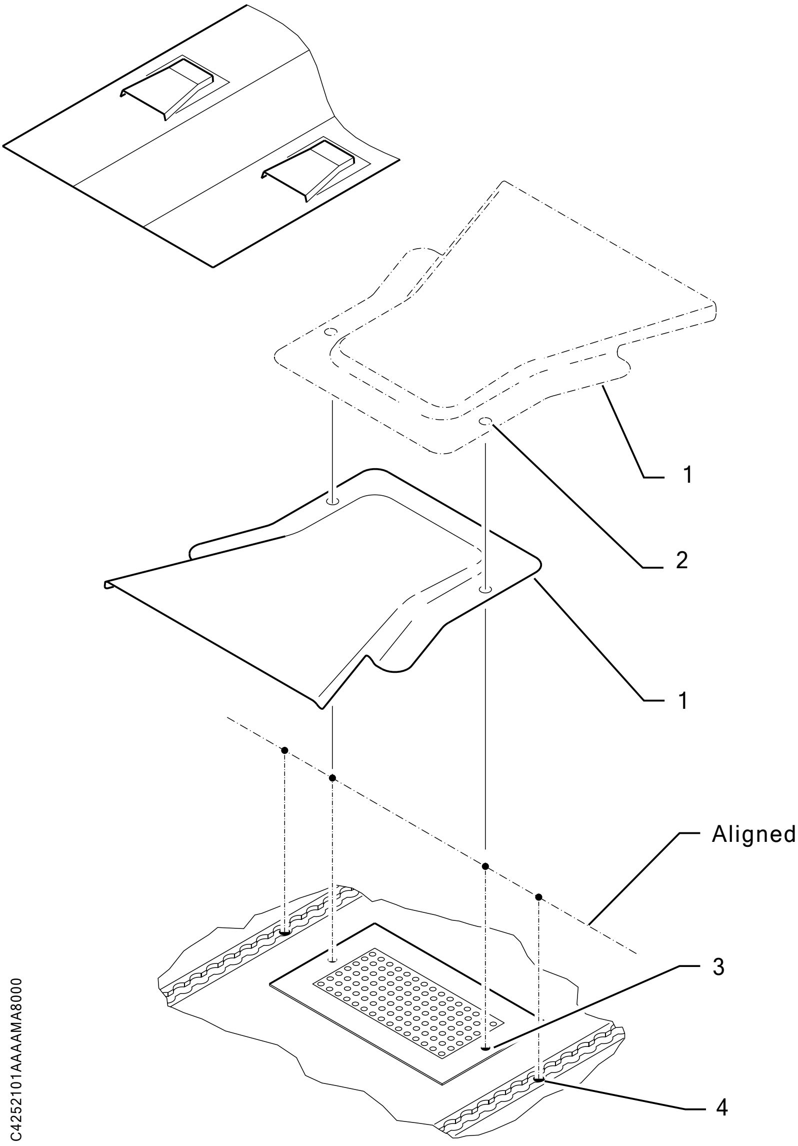
Figure 8.9.3 - Cabin Comfort – Hot Air Outlets and Deflectors



Key to Figure 8.9.4

1) Deflector
2) Deflector hole
3) Red mark
4) Color mark

Figure 8.9.4 - Cabin Comfort – Installation of Deflector



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8.10 - Utilization in Cold Weather (-0 °C to -25 °C) or Very Cold Weather (-25 °C to -40 °C)

NOTE

Check shock absorber and tire pressure values inside a hangar that is heated at about 15 °C with control equipment at room temperature.

If a landing is foreseen in cold or very cold weather, or if prolonged operation of the airplane is anticipated in such conditions, it is recommended to prepare the airplane as follows:

1. Smear the door and engine cowlings seals with silicone grease, as well as the leading-edge deicers.
2. Apply engine oil on the engine cowling latches.
3. Inflate the main landing gear shock absorbers to 247 psi (17 bars) at a room temperature of 15 °C.
4. Position a 0.59 in (15 mm) shim at the bottom of the piston tube and against the forward landing gear's half-fork to reduce shock absorber travel. Then refill the shock absorber with hydraulic liquid. Remove the shim and inflate the shock absorber to 138 psi (9.5 bars) at a room temperature of 15 °C.
5. Inflate main landing gear tires to 130 psi (8.96 bars) and the nose tire to 102 psi (7 bars) at a room temperature of 15 °C.

NOTE

See Table 8.10.1 to check pressure values and to inflate tires and shock absorbers.

Check pressure values and inflate shock absorbers and tires if necessary, according to Table 8.10.1 during operation in cold weather only.

Table 8.10.1 - Tire and Shock Absorber Pressures in Cold or Very Cold Weather

Inflation Pressures		OAT (°C)				
		-40	-30	-20	-10	+15
Main landing gear shock absorber	psi (bars)	189 (13)	196 (13.5)	203 (14)	218 (15)	247 (17)

Continue ►

► *Continuing*

Table 8.10.1 - Tire and Shock Absorber Pressures in Cold or Very Cold Weather

Inflation Pressures		OAT (°C)				
		-40	-30	-20	-10	+15
Nose gear shock absorber	psi (bars)	102 (7)	109 (7.5)	116 (8)	123 (8.5)	138 (9.5)
Main landing gear tire	psi (bars)	144 (9.96)	144 (9.96)	130 (8.96)	130 (8.96)	130 (8.96)
Nose gear tire	psi (bars)	94 (6.5)	94 (6.5)	102 (7)	102 (7)	102 (7)

Section 3

Emergency Procedures

Table of Contents

Fire or Smoke in Flight 1 / 4

Symptoms: smoke or fire is detected in the cockpit or the cabin area.

1 - Oxygen masks and goggles .... Use
Refer to procedure Oxygen Use in Subsection 3.13.

2 - PASSENGER OXYGEN switch .... DEPLOY

WARNING

The pilot and the front passenger must set the regulator control tab on oxygen masks to 100 % oxygen, and the control knob to EMERGENCY to breathe oxygen at positive pressure.

3 - BLEED switch .... OFF/RST

WARNING

The cabin pressurization system is inoperative, and the cabin altitude increases towards airplane altitude.

4 - FAN selector .... OFF

5 - Transmit a MAYDAY signal on current ATC frequency, or on COM VHF 121.5 MHz

6 - Transponder .... Squawk 7700

7 - Perform procedure .... Maximum Rate Descent in Subsection 3.6.

When the cabin differential pressure is below 0.5 psi:

8 - DUMP switch .... Press

9 - EMERGENCY RAM AIR control knob .... Pull

If smoke or fire increases:

10 - EMERGENCY RAM AIR control knob .... Push

11 - Cabin fire extinguisher .... As required

Continue ►

Fire or Smoke in Flight 2 / 4

► *Continuing*

WARNING

Avoid prolonged exposure to toxic residue from the extinguishing agents.

If smoke or fire disappears:

► Land as soon as possible ◄

End of procedure ■

If smoke or fire persists:

12 - GENERATOR selector .... OFF

13 - Left hand DISPLAY BACKUP pushbutton .... Press

14 - ESS BUS TIE switch .... EMER

► Land as soon as possible ◄

WARNING

If the cause of the smoke is an unextinguished fire, maintain OFF/RST for the BLEED switch and OFF for the FAN selector to eliminate the risk of spreading the fire.

CAUTION

Only the left Primary Flight Display (PFD 1) is available.
Autopilot (AP) and Autothrottle (AT) are inoperative.
Ice detection and de-icing system are inoperative.
Landing Gear and Flaps controls are inoperative.
Automatic fuel tank selection is inoperative.
Electric Boost Pump (AUX BP) is inoperative.

NOTE

In this configuration, the battery only supplies power to ESS BUS 1, ESS BUS 2, and BATT BUS, refer to BUS Bars BUS Bars in Subsection 3.9. .

Continue ►

Fire or Smoke in Flight 3 / 4

► *Continuing*

If smoke or fire persists:

► Fly the airplane ◄

15 - Crash lever .... Pull down

16 - Use the standby instrument (MD302) for:

- attitude
- airspeed
- altitude
- heading

NOTE

The internal battery will provide power to the MD302 for one hour.

If smoke or fire stops:

17 - Crash lever .... Up

NOTE

This will allow the pilot to use PFD 1 and COM 1.

18 - Use VHF 1 to seek assistance from Air Traffic Control for landing

If not:

19 - Return to VMC conditions if possible

For approach and landing:

20 - Perform procedure .... Emergency Gear Extension in Subsection 3A.7.

21 - Minimum airspeed according to conditions and flaps configuration

	Normal Conditions	Icing Conditions
Flaps UP	105	135
Flaps TO	100	115

Continue ►

Fire or Smoke in Flight 4 / 4

► *Continuing*

Flaps LDG	85	95

22 - Land normally

When airplane is stopped:

23 - THROTTLE .... IDLE

24 - ENGINE MODE switch .... OFF

25 - FUEL TANK SELECTOR .... OFF

26 - Brakes .... As required

27 - Crash lever .... Pull down

► Evacuate as soon as possible ◄

End of procedure.

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